SPECIFICATION

PROPOSED NURSERY

at

PARKLANDS PRIMARY SCHOOL,
WIGSTON

for

THE GOVERNORS OF THE SCHOOL

YMD Boon Limited,

April 2015
SECTION ONE

PRELIMINARIES
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<td>A54 PROVISIONAL WORK/ ITEMS</td>
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</tbody>
</table>
### A10 PROJECT PARTICULARS

#### 110 The Project
Name: Parklands Primary School - Proposed Nursery  
Nature: Alterations to form proposed nursery  
Location: Parklands Primary School, Saint Thomas Road, Wigston, Leicester, LE18 4TA  
Length of contract: To be confirmed

#### 120 Employer (Client)
Name: The Governors of the School  
Address: Parklands Primary School, Saint Thomas Road, Wigston, Leicester, LE18 4TA  
Contact: Mrs Jane Windsor (Head Teacher)  
Telephone: (0116) 278 2142  
Email: 

#### 130 Principal contractor (CDM)
Name: To be confirmed.  
Address: To be confirmed.  
Contact: To be confirmed.  
Telephone: To be confirmed.  
E-mail: To be confirmed.

#### 140 Architect/ Contract Administrator
Name: YMD Boon Limited.  
Address: York House, Fernie Road, Market Harborough LE16 7PH.  
Contact: Mr Jonathan Warren  
Telephone: 01858 464482  
Email: admin@ymdboon.co.uk

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Total for page £

To be carried forward to General Summary (page 41)
150  **CDM Coordinator**  
Name: J P Services (Chesterfield) Limited  
Address: 24, Highfield Avenue, Newbold, Chesterfield, Derbyshire, S41 7AX  
Contact: Alison Bailey  
Telephone: 07985 937785  
E-mail: jpserviceschesterfield@btinternet.com

160  **Quantity Surveyor**  
Name: YMD Boon Limited.  
Address: York House, Fernie Road, Market Harborough LE16 7PH.  
Telephone: 01858 464482.

**A11 TENDER AND CONTRACT DOCUMENTS**

110  **Tender drawings**  
The tender drawings are:  
YMD Boon drawings

120  **Contract drawings**  
The Contract Drawings: The same as the tender drawings.

160  **Preconstruction information**  
Format: The Preconstruction information is described in these preliminaries in Section A34. It refers to information given elsewhere in the preliminaries and other tender documents.

**A12 THE SITE/ EXISTING BUILDINGS**

110  **The site**  
Description:  
The site is located at Parkland Primary School, Saint Thomas Road, Wigston, LE18 4TA

120  **Existing buildings on/ adjacent to the site**  
Description:  
Existing school buildings on the site; residential buildings adjacent to the site

140  **Existing utilities and services**  
Drawings: (Information shown is indicative only):  
The Contractor is to establish locations and positions of mains and services.  
Other information:  
The Contractor will be responsible for determining the exact nature and location of all site main/services and he will be required to carry out all necessary surveys to determine this information.
200 **Access to the site**  
**Description:**  
Access to the site can be made via Counterthorpe Road  
**Limitations:**  
Vehicular access to the area of the site works will be from Counterthorpe Road with an area indicated as to be kept clear as an access route at all times during the construction works. Please allow for these costs in this section of the preliminaries.

210 **Parking**  
Restrictions on parking of the Contractor's and employees’ vehicles:  
There will be room for parking on the site via the gated access from Counterthorpe Road - the existing car park at the front of the school will not be used and is to be maintained for the use of the school only at all times. An area for the Contractor to set up his compound will be set aside on the site; the Main Contractor is to use the compound areas for storage, deliveries, welfare facilities and site parking.

220 **Use of the site**  
**General:** Do not use the site for any purpose other than carrying out the Works.  
**Limitations:**  
The Contractor must not display or permit others to display any advertisements on the site without prior written authority from the Contract.

230 **Surrounding land/building uses**  
**General:** Adjacent or nearby uses or activities are as follows: Existing school buildings and adjacent residential dwellings.

240 **Health and safety hazards**  
**General:** The nature and condition of the site/building cannot be fully and certainly ascertained before it is opened up. However the following hazards are or may be present:  
See Asbestos Survey Report  
**Information:** The accuracy and sufficiency of this information is not guaranteed by the Employer or the Employer's representative. Ascertain if any additional information is required to ensure the safety of all persons and the Works.  
Site staff: Draw to the attention of all personnel working on the site the nature of any possible contamination and the need to take appropriate precautionary measures.

250 **Site visit**  
**Assessment:** Ascertain the nature of the site, access thereto and all local conditions and restrictions likely to affect the execution of the Works.  
**Arrangements for visit:**  
May be made by prior appointment with the school on (0116) 278 2142

<table>
<thead>
<tr>
<th>Total for page £</th>
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To be carried forward to General Summary (page 41)
A13 DESCRIPTION OF THE WORK

110 Preparatory work by others
Works: Carried out under a separate contract and completed before the start of work on site for this Contract.
Description:
The Client will remove all loose fittings and furniture from the vicinity of the area prior to the commencement of the works.

120 The works
Description:
The works comprise the removal of a number of structural internal walls including the existing chimney, construction of a new toilet block to serve the children, installation of a new kitchenette, office space, reception area and cloaks as detailed on the drawings provided. Externally, there will be new fencing to the perimeter, landscaping works and clearance of vegetation to the rear of the site.

130 Work by others concurrent with the contract
Description:
The following works will be carried out by others as detailed within the schedule of works: Fire alarm, intruder alarm, electrical installation.

A20 JCT MINOR WORKS BUILDING CONTRACT WITH CONTRACTOR’S DESIGN (MWD)

JCT MINOR WORKS BUILDING CONTRACT WITH CONTRACTOR’S DESIGN
Requirement: Allow for the obligations, liabilities and services described as follows:

THE RECITALS

First The Works and the Contract Administrator
The work comprises:
The removal of fittings in the existing kitchen and PO rooms and the demolition of the dividing stud wall to form a new SGR complete with new wall floor and ceiling finishes, electrical lighting, power and data. As part of the works the Cleaners sink in the PO room will be retained and relocated in an existing room elsewhere in the building

Second Contractor’s designed portion
The Works include the design and construction of:
Electrical lighting, new power and data installations to proposed nursery; hot and cold water supply and waste pipework to the kitchenette, wet area and new toilet block.

Third Contract documents
Contract drawings: As listed in clause A11/120.
Contract documents: The following have been prepared which show and describe the work to be done
A specification
Fourth Priced documents
Documents to be priced or provided by the Contractor:
Contract specification

THE ARTICLES

3 Architect/ Contract Administrator

4 and 5 CDM Coordinator/ Principal Contractor
Articles 4 and 5 will be deleted.

CONTRACT PARTICULARS

Fifth Recital and Schedule 2 Base date
Base date:
Ten days prior to the date for receipt of tenders.

Fifth Recital and clause 4.2 Construction industry scheme (CIS)
Employer at base date
is not a 'contractor' for the purposes of the CIS.

Sixth Recital CDM Regulations
The project
is notifiable.

Seventh Recital Framework agreement
Framework agreement:
Does not apply
Details:
- Date:
  Not applicable
- Title:
  Not applicable
- Parties:
  Not applicable

To be carried forward to General Summary (page 41)
**Eighth Recital and Schedule 3 Supplemental provisions**

<table>
<thead>
<tr>
<th>Collaborative working: Paragraph 1</th>
<th>Applies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health and safety: Paragraph 2</td>
<td>Applies</td>
</tr>
<tr>
<td>Cost savings and value improvements: Paragraph 3</td>
<td>Applies</td>
</tr>
<tr>
<td>Sustainable development and environmental considerations:</td>
<td>Paragraph 4 does not apply</td>
</tr>
<tr>
<td>Performance indicators and monitoring: Paragraph 5</td>
<td>does not apply</td>
</tr>
<tr>
<td>Notification and negotiation of disputes: Paragraph 6</td>
<td>applies</td>
</tr>
</tbody>
</table>

Where paragraph 6 applies, the respective nominees of the parties are:
- Employer's nominee: To be confirmed
- Contractor's nominee: To be confirmed

Or such replacement as each party may notify to the other from time to time.

**Article 7 Arbitration**

Article 7 and Schedule 1 apply

**Clause 1.1 CDM planning period**

Shall mean the period of 2 weeks ending on the date of possession

**Clause 2.3 Commencement and Completion**

Date for Commencement of the Works:
- 8th June 2015

Date for Completion:
- 14th August 2015

**Clause 2.9 Liquidated damages**

At the rate of £500.00 per calendar week or pro-rata there to.

**Clause 2.11 Rectification period**

Period:
Six months from the date of practical completion.

**Clause 4.3 Percentage of the total value of the work etc.**

Percentage:
- 95 per cent

**Clause 4.4 Percentage of the total amount to be paid to the Contractor**

Percentage:
- 97½ per cent
Clause 4.8.1  Supply of documentation for computation of amount to be finally certified
Period:
Three months from the date of practical completion.

Clause 4.11 and Schedule 2  Contribution, levy and tax changes
Clause 4.11 and Schedule 2 will be deleted.

Clause 5.3.2  Contractor's insurance - injury to persons or property
Insurance cover (for any one occurrence or series of occurrences arising out of one event):
Not less than £5,000,000.00.

Clauses 5.4A, 5.4B and 5.4C  Insurance of the works etc - alternative provisions
Clause
5.4C (Existing structures insurance by Employer in own name) applies.

Clauses 5.4A.1 and 5.4B.1.2  Percentage to cover professional fees
Addition:
15 per cent.

Clause 7.2  Adjudication
The Adjudicator is:
To be confirmed
Nominating body:
The Royal Institute of Chartered Surveyors

Schedule 1 paragraph 2.1  Arbitration
Appointor of Arbitrator (and of any replacement): President or a Vice president of the:
The Royal Institution of Chartered Surveyors

THE CONDITIONS

Section 1: Definitions and Interpretation

Section 2: Carrying out the Works

Section 3: Control of the Works

Section 4: Payment (Clause 4.3 shall be amended to read "The final date for payment by the Employer of the amount so certified shall be 21 days from the date of issue of that certificate")

Section 5: Injury, Damage and Insurance

Section 6: Termination

Section 7: Settlement of Disputes

Total for page £
To be carried forward to General Summary (page 41)
**EXECUTION**
The Contract: Will be executed as a deed

### A30 TENDERING/ SUBLETTING/ SUPPLY
#### MAIN CONTRACT TENDERING

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<th>110</th>
<th>Scope</th>
<th>General: These conditions are supplementary to those stated in the Invitation to Tender and on the form of tender.</th>
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</thead>
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<tr>
<td>145</td>
<td>Tendering procedure</td>
<td>General: In accordance with NBS Guide to Tendering for Construction Projects. Errors: Alternative 1 is to apply.</td>
</tr>
<tr>
<td>160</td>
<td>Exclusions</td>
<td>Inability to tender: Immediately inform if any parts of the work as defined in the tender documents cannot be tendered. Relevant parts of the work: Define those parts, stating reasons for the inability to tender.</td>
</tr>
<tr>
<td>170</td>
<td>Acceptance of tender</td>
<td>Acceptance: No guarantee is offered that any tender will be recommended for acceptance or be accepted, or that reasons for non acceptance will be given. Costs: No liability is accepted for any cost incurred in the preparation of any tender.</td>
</tr>
<tr>
<td>190</td>
<td>Period of validity</td>
<td>Period: After submission or lodgement, keep tender open for consideration (unless previously withdrawn) for not less than 60 days Date for possession/ commencement: See section A20.</td>
</tr>
</tbody>
</table>

#### PRICING/ SUBMISSION OF DOCUMENTS

| 210 | Preliminaries in the specification | The Preliminaries/ General conditions sections (A10-A56 inclusive) must not be relied on as complying with SMM7. |
| 250 | Priced schedules of work | Alterations: Do not alter or qualify the priced schedules of work without written consent. Tenders containing unauthorised alterations or qualifications may be rejected. Measurements: Where not stated, ascertain from the drawings. Deemed included: Costs relating to items, which are not priced, will be deemed to have been included elsewhere in the tender. Submit: with tender |
| 280 | Quantities in the schedules of work | Quantities included in the schedules of work are approximate and will be reviewed when the works commences on site |

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<th></th>
<th>Fixed</th>
<th>Time Related</th>
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<td>Total for page £</td>
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To be carried forward to General Summary (page 41)
Tender

General: Tenders must include for all work shown or described in the tender documents as a whole or clearly apparent as being necessary for the complete and proper execution of the Works.

Tender stage method statements

Method statements: Prepare, describing how and when the following is to be carried out:
Removal of any asbestos.
Statements: Submit within one week of request

Alternative method tenders

General: In addition to and at the same time as tendering for the Works as defined in the tender documents, alternative methods of construction/installation may be submitted for consideration. Alternatives, which would involve significant changes to other work, may not be considered.
Alternative tenders: Such alternatives will be deemed to be alternative tenders and each must include a complete and precise statement of the effects on cost and programme.
Safety method statement: Carry out a health and safety risk assessment for each alternative and where appropriate provide a safety method statement suitable for incorporation in the Health and Safety Plan.
Full technical data: Submit for each alternative together with details of any consequential amendments to the design and/or construction of other parts of the Works.
Submit: within one week of request

Alternative time tenders

General: In addition to and at the same time as tendering based upon the date or period specified in section A20, an alternative tender based upon a different date for completion or period may be submitted.
Date for completion: If any such tender is accepted the date for completion inserted in the Contract will be the date stated in the alternative tender or determined from the period stated in the alternative tender.

Design documents

Scope: Include the following in the Contractor's Proposals:
- Design drawings:
  Electrical lighting, new power and data installations to proposed Nursery; heating, hot and cold water supply and waste pipework
- Technical information:
  Electrical lighting, new power and data installations to proposed Nursery; heating, hot and cold water supply and waste pipework
Submit: With tender.
530 Substitute products
Details: If products of different manufacture to those specified are proposed, submit details with the tender giving reasons for each proposed substitution. Substitutions, which have not been notified at tender stage, may not be considered.
Compliance: Substitutions accepted will be subject to the verification requirements of clause A31/200.

550 Health and safety information
Content: Describe the organisation and resources to safeguard the health and safety of operatives, including those of subcontractors, and of any person whom the Works may affect.
Include:
- A copy of the contractor's health and safety policy document, including risk assessment procedures.
- Accident and sickness records for the past five years.
- Records of previous Health and Safety Executive enforcement action.
- Records of training and training policy.
- The number and type of staff responsible for health and safety on this project with details of their qualifications and duties.
Submit:
Within one week of request
Outline construction phase health and safety plan

Content: Submit the following information within one week of request:
- Method statements on how risks from hazards identified in the pre-construction information and other hazards identified by the contractor will be addressed.
- Details of the management structure and responsibilities.
- Arrangements for issuing health and safety directions.
- Procedures for informing other contractors and employees of health and safety hazards.
- Selection procedures for ensuring competency of other contractors, the self-employed and designers.
- Procedures for communications between the project team, other contractors and site operatives.
- Arrangements for cooperation and coordination between contractors.
- Procedures for carrying out risk assessment and for managing and controlling the risk.
- Emergency procedures including those for fire prevention and escape.
- Arrangements for ensuring that all accidents, illness and dangerous occurrences are recorded.
- Arrangements for welfare facilities.
- Procedures for ensuring that all persons on site have received relevant health and safety information and training.
- Arrangements for consulting with and taking the views of people on site.
- Arrangements for preparing site rules and drawing them to the attention of those affected and ensuring their compliance.
- Monitoring procedures to ensure compliance with site rules, selection and management procedures, health and safety standards and statutory requirements.
- Review procedures to obtain feedback.

Freedom of Information

Records: Retain, make available for inspection and supply on request information reasonably required to allow response to requests made under the provisions of the Freedom of Information Act.

Determination: Submit requests received. Do not supply information outside the project participants without express written permission.

Confidentiality: Maintain at all times.

A31 PROVISION, CONTENT AND USE OF DOCUMENTS

DEFINITIONS AND INTERPRETATIONS

Definitions
Meaning: Terms, derived terms and synonyms used in the preliminaries/ general conditions and specification are as stated therein or in the appropriate British Standard or British Standard glossary.
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<th>Communication</th>
<th>Fixed</th>
<th>Time Related</th>
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<tbody>
<tr>
<td>120</td>
<td><strong>Definition:</strong> Includes advise, inform, submit, give notice, instruct, agree, confirm, seek or obtain information, consent or instructions, or make arrangements. Format: In writing to the person named in clause A10/140 unless specified otherwise. Response: Do not proceed until response has been received.</td>
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<tr>
<th></th>
<th>Products</th>
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<tr>
<td>130</td>
<td><strong>Definition:</strong> Materials, both manufactured and naturally occurring, and goods, including components, equipment and accessories, intended for the permanent incorporation in the Works. Includes: Goods, plant, materials, site materials and things for incorporation into the Works.</td>
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<tr>
<th></th>
<th>Site equipment</th>
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<tbody>
<tr>
<td>135</td>
<td><strong>Definition:</strong> All appliances or things of whatsoever nature required in or about the construction for completion of the Works but not materials or other things intended to form or forming part of the Permanent Works. Includes: Construction appliances, vehicles, consumables, tools, temporary works, scaffolding, cabins and other site facilities.</td>
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<th></th>
<th>Drawings</th>
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<tr>
<td>140</td>
<td><strong>Definitions:</strong> To BSRIA BG 6/2009 A design framework for building services. Design activities and drawing definitions. CAD data: In accordance with BS 1192.</td>
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<tr>
<th></th>
<th>Contractor's choice</th>
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<tbody>
<tr>
<td>145</td>
<td><strong>Meaning:</strong> Selection delegated to the Contractor, but liability to remain with the specifier.</td>
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<thead>
<tr>
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<th>Contractor's Design</th>
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<tbody>
<tr>
<td>150</td>
<td><strong>Meaning:</strong> Design to be carried out or completed by the Contractor and supported by appropriate contractual arrangements, to correspond with specified requirements.</td>
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<th>Submit proposals</th>
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<tbody>
<tr>
<td>155</td>
<td><strong>Meaning:</strong> Submit information in response to specified requirements.</td>
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</tbody>
</table>
160 **Terms used in specification**

Remove: Disconnect, dismantle as necessary and take out the designated products or work and associated accessories, fixings, supports, linings and bedding materials. Dispose of unwanted materials. Excludes taking out and disposing of associated pipework, wiring, ductwork or other services.

Fix: Receive, unload, handle, store, protect, place and fasten in position and disposal of waste and surplus packaging including all labour, materials and site equipment for that purpose.

Supply and fix: As above, but including supply of products to be fixed. All products to be supplied and fixed unless stated otherwise.

Keep for reuse: Do not damage designated products or work. Clean off bedding and jointing materials. Stack neatly, adequately protect and store until required by the Employer/Purchaser or for use in the Works as instructed.

Make good: Execute local remedial work to designated work. Make secure, sound and neat. Excludes redecoration and/or replacement.

Replace: Supply and fix new products matching those removed. Execute work to match original new state of that removed.

Repair: Execute remedial work to designated products. Make secure, sound and neat. Excludes redecoration and/or replacement.

Refix: Fix removed products.

Ease: Adjust moving parts of designated products or work to achieve free movement and good fit in open and closed positions.

Match existing: Provide products and work of the same appearance and features as the original, excluding ageing and weathering. Make joints between existing and new work as inconspicuous as possible.

System: Equipment, accessories, controls, supports and ancillary items, including installation, necessary for that section of the work to function.

170 **Manufacturer and product reference**

Definition: When used in this combination:

- Manufacturer: The firm under whose name the particular product is marketed.
- Product reference: The proprietary brand name and/or reference by which the particular product is identified.

Currency: References are to the particular product as specified in the manufacturer's technical literature current on the date of the invitation to tender.
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
</table>
| 200     | **Substitution of products**  
Products: If an alternative product to that specified is proposed, obtain approval before ordering the product.  
Reasons: Submit reasons for the proposed substitution.  
Documentation: Submit relevant information, including:  
- manufacturer and product reference;  
- cost;  
- availability;  
- relevant standards;  
- performance;  
- function;  
- compatibility of accessories;  
- proposed revisions to drawings and specification;  
- compatibility with adjacent work;  
- appearance;  
- copy of warranty/guarantee.  
Alterations to adjacent work: If needed, advise scope, nature and cost.  
Manufacturers’ guarantees: If substitution is accepted, submit before ordering products. |
| 210     | **Cross references**  
Accuracy: Check remainder of the annotation or item description against the terminology used in the section or clause referred to.  
Related terminology: Where a numerical cross-reference is not given the relevant sections and clauses of the specification will apply.  
Relevant clauses: Clauses in the referred to specification section dealing with general matters, ancillary products and execution also apply.  
Discrepancy or ambiguity: Before proceeding, obtain clarification or instructions. |
| 220     | **Referenced documents**  
Conflicts: Specification prevails over referenced documents. |
| 230     | **Equivalent products**  
Inadvertent omission: Wherever products are specified by proprietary name the phrase ‘or equivalent’ is to be deemed included. |
| 240     | **Substitution of standards**  
Specification to British Standard or European Standard: Substitution may be proposed complying with a grade or category within a national standard of another Member State of the European Community or an international standard recognised in the UK.  
Before ordering: Submit notification of all such substitutions.  
Documentary evidence: Submit for verification when requested as detailed in clause A31/200. Any submitted foreign language documents must be accompanied by certified translations into English. |
| 250     | **Currency of documents**  
Currency: References to published documents are to the editions, including amendments and revisions, current on the date of the Invitation to Tender. |
### Sizes
General dimensions: Products are specified by their co-ordinating sizes.

Timber: Cross section dimensions shown on drawings are:
- Target sizes as defined in BS EN 336 for structural softwood and hardwood sections.
- Finished sizes for non-structural softwood or hardwood sawn and further processed sections.

### DOCUMENTS PROVIDED ON BEHALF OF THE EMPLOYER

<table>
<thead>
<tr>
<th>410</th>
<th>Additional copies of drawings/ documents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Additional copies: Issued on request and charged to the Contractor.</td>
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<table>
<thead>
<tr>
<th>440</th>
<th>Dimensions</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Scaled dimensions: Do not rely on.</td>
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<table>
<thead>
<tr>
<th>460</th>
<th>The specification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coordination: All sections must be read in conjunction with Main Contract Preliminaries/ General conditions.</td>
</tr>
</tbody>
</table>

### DOCUMENTS PROVIDED BY CONTRACTOR/ SUBCONTRACTORS/ SUPPLIERS

<table>
<thead>
<tr>
<th>600</th>
<th>Contractor's Design information</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General: Complete the design and detailing of parts of the Works as specified.</td>
</tr>
<tr>
<td></td>
<td>Provide:</td>
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<tr>
<td></td>
<td>- Production information based on the drawings, specification and other information.</td>
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<tr>
<td></td>
<td>- Liaison to ensure coordination of the work with related building elements and services.</td>
</tr>
<tr>
<td></td>
<td>Master programme: Make reasonable allowance for completing design/ production information, submission (including to the CDM Coordinator), comment, inspection, amendment, resubmission and reinspection.</td>
</tr>
<tr>
<td></td>
<td>Information required:</td>
</tr>
<tr>
<td></td>
<td>Drawings and calculations.</td>
</tr>
<tr>
<td></td>
<td>- Format: Microsoft Office Word and AutoCAD.</td>
</tr>
<tr>
<td></td>
<td>- Number of copies: two number copies</td>
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<td></td>
<td>Submit: Within one week of request.</td>
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<tr>
<th>620</th>
<th>As built drawings and information</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Contractor designed work: Provide drawings/ information: As Clause A31/600.</td>
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<tr>
<td></td>
<td>Submit: At least two weeks before date for completion.</td>
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<tr>
<th>630</th>
<th>Technical literature</th>
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<tr>
<td></td>
<td>Information: Keep on site for reference by all supervisory personnel:</td>
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<tr>
<td></td>
<td>- Manufacturers' current literature relating to all products to be used in the Works.</td>
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<td></td>
<td>- Relevant British, EN or ISO Standards.</td>
</tr>
</tbody>
</table>

**Total for page £**

To be carried forward to General Summary (page 41)
640 Maintenance instructions and guarantees
Components and equipment: Obtain or retain copies, register with manufacturer and hand over on or before completion of the Works.
Emergency call out services: Provide telephone numbers for use after completion. Extent of cover: twenty four hours seven days a week

A32 MANAGEMENT OF THE WORKS

GENERALLY

110 Supervision
General: Accept responsibility for coordination, supervision and administration of the Works, including subcontracts.
Coordination: Arrange and monitor a programme with each subcontractor, supplier, local authority and statutory undertaker, and obtain and supply information as necessary for coordination of the work.

112 Disclosure and Barring Service (Pre commencement DBS checks)
The Contractor shall in respect of any of its staff who may come into contact with children or vulnerable adults in the performance of these works, wherever possible prior to such person commencing the performance of the works, undertake a check of the person's previous convictions and criminal records history of the most extensive available kind with the Disclosure and Barring Service (a DBS check) and shall either a) prior to commencement of the works on site (after obtaining the consent of the specific member of staff) supply to the School or other such Authority the original documents confirming the DBS Check or b) if the consent of the specific member of staff is not obtained, warrant to the School or other such Authority that the DBS check in respect of the specific member of staff does not disclose any convictions.

113 Disclosure and Barring Service (Persons not DBS checked)
Where it is not possible to obtain a DBS check prior to such person commencing the performance of the works, the Contractor shall promptly notify the School or other such Authority of this fact and shall a) procure that at all times such person is accompanied by a member of the Contractor’s or School’s staff who has already undergone a DBS checks; and b) if so requested conduct a DBS check as soon as reasonably practicable. Immediately (and after obtaining consent of the specific member of staff) supply to the School or other such Authority the original documents forming the DBS check or, if the consent of the specific member of staff is not obtained, warrant to the School or other such Authority that the DBS check in respect of the specific member of staff does not disclose any convictions.

To be carried forward to General Summary (page 41)
114 Disclosure and Barring Service (Persons with previous convictions and criminal records)
In the event that a person discloses, or as a result of any DBS check required to be carried out pursuant to this Contract, is found to have a conviction, caution, pending prosecution, binding over order or other criminal record (Conviction), or refuses to complete a DBS check, the Contractor shall not engage such persons in the performance of the works without the prior written approval of the School or other such Authority.

114a Disclosure and Barring Service (DBS check renewals)
The Contractor shall renew DBS checks at the request of the School or other such Authority and shall at all times and without delay a) on obtaining the necessary consent of the specific member of staff supply to the School or other such Authority the original documents forming the DBS check or b) if the consent of the specific member of staff is not obtained warrant to the School or other such Authority that the DBS check in respect of the specific member of staff does not disclose any convictions.

114b Disclosure and Barring Service (Reimbursement)
Where the School or other such Authority, firms or bodies provide reasonable assistance, where necessary, to secure the obtaining of such DBS checks where the Contractor is unable to obtain such checks then the Contractor shall reimburse the School or other such Authority, firms or bodies reasonable costs in providing such assistance.

114c Disclosure and Barring Service (Indemnification)
The Contractor shall indemnify and keep indemnified the School or other such Authority against any loss arising out of any claim by any person in respect of whom the School or other Authority does not consent to being engaged in the performance of the works.

115 Considerate constructors scheme
Registration: Before starting work, register the site and pay the appropriate fee:
Contact:
- Address: Considerate Constructors Scheme Office, PO Box 75, Great Amwell, Ware, Hertfordshire, SG12 0YX.
- Tel. 01920 485959.
- Fax. 01920 485958.
- Free phone 0800 7831423
- Web. www.ccscheme.org.uk
- E mail. enquiries@ccscheme.org.uk
Standard: Comply with the Scheme’s Code of Considerate Practice.
- Minimum compliance level: basic compliance

120 Insurance
Documentary evidence: Before starting work on site submit details, and/ or policies and receipts for the insurances required by the Conditions of Contract.
125 **Professional Indemnity Insurance**  
Provide and maintain insurance in respect of Contractor Designed Works:  
- Level of cover:  
Relates to claims or series of claims arising out of one event  
- Period of insurance for these purposes:  
one year  
Amount of indemnity required: £2,000,000.00. Evidence to be submitted prior to commencement of works.  
Limit of cover for pollution/contamination claims (If none is stated, the required level of cover shall be the full amount of the indemnity cover stated): £as above  
Expiry of required period of CDP Professional Indemnity insurance:  
twelve years (If no period is selected, the expiry date shall be 6 years from the date of practical completion of the Works).  
Documentary evidence: Submit details before starting work on site and/or policies and receipts for the insurances required.  
- Format:  
Electronic

130 **Insurance claims**  
Notice: If any event occurs which may give rise to any claim or proceeding in respect of loss or damage to the Works or injury or damage to persons or property arising out of the Works, immediately give notice to the Employer, the person named in clause A10/140 and the Insurers.  
Failure to notify: Indemnify the Employer against any loss, which may be caused by failure to give such notice.

140 **Climatic conditions**  
Information: Record accurately and retain:  
- Daily maximum and minimum air temperatures (including overnight).  
- Delays due to adverse weather, including description of the weather, types of work affected and number of hours lost.

150 **Ownership**  
Alteration/clearance work: Materials arising become the property of the Contractor except where otherwise stated. Remove from site as work proceeds.

**PROGRAMME/PROGRESS**

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210 Programme
Master programme: Immediately when requested and before starting work on site submit in an approved form a master programme for the Works, which must include details of:
- Planning and mobilisation by the Contractor
- Subcontractor's work.
- Running in, adjustment, commissioning and testing of all engineering services and installations.
- Work resulting from instructions issued in regard to the expenditure of provisional sums.
- Work by others concurrent with the Contract.
Submit two copies

245 Start of work on site
Notice: Before the proposed date for start of work on site give minimum notice of one week

250 Monitoring
Progress: Record on a copy of the programme kept on site. Avoiding delays: If any circumstances arise which may affect the progress of the Works submit proposals or take other action as appropriate to minimize any delay and to recover any lost time.
Key Performance Indicators:
- Details: Not applicable
- Record progress against each of the KPIs. If performance against KPI falls short of target, submit proposals for remediation.

260 Site meetings
General: Site meetings will be held to review progress and other matters arising from administration of the Contract.
Frequency: Every month
Location: On site.
Accommodation: Ensure availability at the time of such meetings.
Attendees: Attend meetings and inform subcontractors and suppliers when their presence is required.
Chairperson (who will also take and distribute minutes): Contract Administrator

290 Notice of completion
Requirement: Give notice of the anticipated dates of completion of the whole or parts of the Works.
Associated works: Ensure necessary access, services and facilities are complete.
Period of notice (minimum):
Two weeks
310 **Extensions of time**
Notice: When a notice of the cause of any delay or likely delay in the progress of the works is given under the contract, written notice must also be given of all other causes which apply concurrently.
Details: As soon as possible submit:
- Relevant particulars of the expected effects, if appropriate, related to the concurrent causes.
- An estimate of the extent, if any, of the expected delay in the completion of the Works beyond the date for completion.
- All other relevant information required.

420 **Removal/ replacement of existing work**
Extent and location: Agree before commencement.
Execution: Carry out in ways that minimize the extent of work.

430 **Proposed instructions**
Estimates: If a proposed instruction requests an estimate of cost, submit without delay and in any case within seven days.

440 **Measurement**
Covered work: Give notice before covering work required to be measured.

450 **Daywork vouchers**
Before commencing work: Give reasonable notice to person countersigning daywork vouchers.
Content: Before delivery each voucher must be:
- Referenced to the instruction under which the work is authorised.
- Signed by the Contractor's person in charge as evidence that the operatives' names, the time daily spent by each and the equipment and products employed are correct.
Submit: By the end of the week in which the work has been executed.

470 **Products not incorporated into the Works**
Ownership: At the time of each valuation, supply details of those products not incorporated into the Works which are subject to any reservation of title inconsistent with passing of property as required by the Conditions of Contract, together with their respective values.
Evidence: When requested, provide evidence of freedom of reservation of title.

A33 **QUALITY STANDARDS/ CONTROL**

**STANDARDS OF PRODUCTS AND EXECUTIONS**
110 Incomplete documentation
General: Where and to the extent that products or work are not fully documented, they are to be:
- Of a kind and standard appropriate to the nature and character of that part of the Works where they will be used.
- Suitable for the purposes stated or reasonably to be inferred from the project documents.
Contract documents: Omissions or errors in description and/or quantity shall not vitiate the Contract nor release the Contractor from any obligations or liabilities under the Contract.

120 Workmanship skills
Operatives: Appropriately skilled and experienced for the type and quality of work.
Registration: With Construction Skills Certification Scheme.
Evidence: Operatives must produce evidence of skills/qualifications when requested.

130 Quality of products
Generally: New. (Proposals for recycled products may be considered).
Supply of each product: From the same source or manufacturer.
Whole quantity of each product required to complete the Works: Consistent kind, size, quality and overall appearance.
Tolerances: Where critical, measure a sufficient quantity to determine compliance.
Deterioration: Prevent. Order in suitable quantities to a programme and use in appropriate sequence.

135 Quality of execution
Generally: Fix, apply, install or lay products securely, accurately, plumb, neatly and in alignment.
Colour batching: Do not use different colour batches where they can be seen together.
Dimensions: Check on-site dimensions.
Finished work: Without defects, e.g. not damaged, disfigured, dirty, faulty, or out of tolerance.
Location and fixing of products: Adjust joints open to view so they are even and regular.

140 Compliance
Compliance with proprietary specifications: Retain on site evidence that the proprietary product specified has been supplied.
Compliance with performance specifications: Submit evidence of compliance, including test reports indicating:
- Properties tested.
- Pass/ fail criteria.
- Test methods and procedures.
- Test results.
- Identity of testing agency.
- Test dates and times.
- Identities of witnesses.
- Analysis of results.
150 **Inspections**
Products and executions: Inspection or any other action must not be taken as approval unless confirmed in writing referring to:
- Date of inspection.
- Part of the work inspected.
- Respects or characteristics which are approved.
- Extent and purpose of the approval.
- Any associated conditions.

160 **Related work**
Details: Provide all trades with necessary details of related types of work. Before starting each new type or section of work ensure previous related work is:
- Appropriately complete.
- In accordance with the project documents.
- To a suitable standard.
- In a suitable condition to receive the new work.
Preparatory work: Ensure all necessary preparatory work has been carried out.

170 **Manufacturer's recommendations/ instructions**
General: Comply with manufacturer's printed recommendations and instructions current on the date of the Invitation to tender.
Changes to recommendations or instructions: Submit details.
Ancillary products and accessories: Use those supplied or recommended by main product manufacturer.
Agrément certified products: Comply with limitations, recommendations and requirements of relevant valid certificates.

180 **Water for the works**
Mains supply: Clean and uncontaminated.
Other: Do not use until:
- Evidence of suitability is provided.
- Tested to BS EN 1008 if instructed.

### SAMPLES/ APPROVALS

210 **Samples**
Products or executions: Comply with all other specification requirements and in respect of the stated or implied characteristics either:
- To an express approval.
- To match a sample expressly approved as a standard for the purpose.

220 **Approval of products**
Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.
Approval: Relates to a sample of the product and not to the product as used in the Works. Do not confirm orders or use the product until approval of the sample has been obtained.
Complying sample: Retain in good, clean condition on site. Remove when no longer required.
230 **Approval of execution**
Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.
Approval: Relates to the stated characteristics of the sample. (If approval of the finished work as a whole is required this is specified separately). Do not conceal, or proceed with affected work until compliance with requirements is confirmed.
Complying sample: Retain in good, clean condition on site. Remove when no longer required.

**ACCURACY/ SETTING OUT GENERALLY**

320 **Setting out**
General: Submit details of methods and equipment to be used in setting out the Works.
Levels and dimensions: Check and record the results on a copy of drawings. Notify discrepancies and obtain instructions before proceeding.
Inform: When complete and before commencing construction.

330 **Appearance and fit**
Tolerances and dimensions: If likely to be critical to execution or difficult to achieve, as early as possible either:
- Submit proposals; or
- Arrange for inspection of appearance of relevant aspects of partially finished work.
General tolerances (maximum): To BS 5606, tables 1 and 2.

340 **Critical dimensions**
Critical dimensions: Set out and construct the Works to ensure compliance with the tolerances stated.
Location: Detailed on drawings
See drawings

350 **Levels of structural floors**
Maximum tolerances for designed levels to be:
- Floors to be self-finished, and floors to receive sheet or tile finishes directly bedded in adhesive: +/- 10 mm.
- Floors to receive dry board/ panel construction with little or no tolerance on thickness: +/- 10 mm.
- Floors to receive mastic asphalt flooring/ underlays directly: +/- 10 mm.
- Floors to receive mastic asphalt flooring/ underlays laid on mastic asphalt levelling coat(s): +/- 15 mm.
- Floors to receive fully bonded screeds/ toppings/ beds: +/- 15 mm.
- Floors to receive unbonded or floating screeds/ beds: +/- 20 mm.

360 **Record drawings**
Site setting out drawing: Record details of all grid lines, setting-out stations, benchmarks and profiles. Retain on site throughout the contract and hand over on completion.

**SERVICES GENERALLY**
410 **Services regulations**
New or existing services: Comply with the Byelaws or Regulations of the relevant Statutory Authority.

420 **Water regulations/ byelaws notification**
Requirements: Notify Water Undertaker of any work carried out to or which affects new or existing services and submit any required plans, diagrams and details.
Consent: Allow adequate time to receive Undertaker's consent before starting work. Inform immediately if consent is withheld or is granted subject to significant conditions.

430 **Water regulations/ byelaws contractor's certificate**
On completion of the work: Submit (copy where also required to the Water Undertaker) a certificate including:
- The address of the premises.
- A brief description of the new installation and/or work carried out to an existing installation.
- The Contractor's name and address.
- A statement that the installation complies with the relevant Water Regulations or Byelaws.
- The name and signature of the individual responsible for checking compliance.
- The date on which the installation was checked.

435 **Electrical installation certificate**
Submit: When relevant electrical work is completed.
Original certificate: To be lodged in the Building Manual.

440 **Gas, oil and solid fuel appliance installation certificate**
Before the completion date stated in the Contract: Submit a certificate stating:
- The address of the premises.
- A brief description of the new installation and/or work carried out to an existing installation.
- Any special recommendations or instructions for the safe use and operation of appliances and flues.
- The Contractor's name and address.
- A statement that the installation complies with the appropriate safety, installation and use regulations.
- The name, qualification and signature of the competent person responsible for checking compliance.
- The date on which the installation was checked.
Certificate location: Building Manual

445 **Service runs**
General: Provide adequate space and support for services, including unobstructed routes and fixings.
Ducts, chases and holes: Form during construction rather than cut.
Coordination with other works: Submit details of locations, types/methods of fixing of services to fabric and identification of runs and fittings.
### Mechanical and electrical services

Final tests and commissioning: Carry out so that services are in full working order at completion of the Works. Building Regulations notice: Copy to be lodged in the Building Manual.

### SUPERVISION/ INSPECTION/ DEFECTIVE WORK

#### Access

Extent: Provide at all reasonable times access to the Works and to other places of the Contractor or subcontractors where work is being prepared for the Contract.

Designate:

Contract Administrator

#### Overtime working

Notice: Prior to overtime being worked, submit details of times, types and locations of work to be done.

- Minimum period of notice: Three days

Concealed work: If executed during overtime for which notice has not been given, it may be required to be opened up for inspection and reinstated at the Contractor's expense.

#### Defects in existing work

Undocumented defects: When discovered, immediately give notice. Do not proceed with affected related work until response has been received.

Documented remedial work: Do not execute work which may:

- Hinder access to defective products or work; or
- Be rendered abortive by remedial work.

#### Tests and inspections

Timing: Agree and record dates and times of tests and inspections to enable all affected parties to be represented.

Confirmation: One working day prior to each such test or inspection. If sample or test is not ready, agree a new date and time.

Records: Submit a copy of test certificates and retain copies on site.

#### Defective products/ executions

Proposals: Immediately any work or product is known, or appears, to be not in accordance with the Contract, submit proposals for opening up, inspection, testing, making good, adjustment of the Contract Sum, or removal and re-execution.

Acceptability: Such proposals may be unacceptable and contrary instructions may be issued.

### WORK AT OR AFTER COMPLETION

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To be carried forward to General Summary (page 41)
## Work before completion

**General:** Make good all damage consequent upon the Works.

Temporary markings, coverings and protective wrappings: Remove unless otherwise instructed.

Cleaning: Clean the Works thoroughly inside and out, including all accessible ducts and voids. Remove all splashes, deposits, efflorescence, rubbish and surplus materials.

Cleaning materials and methods: As recommended by manufacturers of products being cleaned, and must not damage or disfigure other materials or construction.

COSHH dated data sheets: Obtain for all materials used for cleaning and ensure they are used only as recommended by their manufacturers.

Minor faults: Touch up in newly painted work, carefully matching colour and brushing out edges. Repaint badly marked areas back to suitable breaks or junctions.

Moving parts of new work: Adjust, ease and lubricate as necessary to ensure easy and efficient operation, including doors, windows, drawers, ironmongery, appliances, valves and controls.

## Security at completion

**General:** Leave the Works secure with, where appropriate, all accesses closed and locked.

**Keys:** Account for and adequately label all keys and hand over to Employer with itemized schedule, retaining duplicate schedule signed by Employer as a receipt.

## Making good defects

**Remedial work:** Arrange access with Contract Administrator

**Rectification:** Give reasonable notice for access to the various parts of the Works.

**Completion:** Notify when remedial works have been completed.

## SECURITY/ SAFETY/ PROTECTION

### Security

**Protection:** Safeguard the site, the Works, products, materials, and any existing buildings affected by the Works from damage and theft.

**Access:** Take all reasonable precautions to prevent unauthorized access to the site, the Works and adjoining property.

**Special requirements:**

The Contractor is to erect all necessary temporary hoardings as necessary to enable the works to be safely commenced and allow for all costs in connection therewith.

### Stability

**Responsibility:** Maintain the stability and structural integrity of the Works and adjacent structures during the Contract.

**Design loads:** Obtain details, support as necessary and prevent overloading.

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**Total for page £**

To be carried forward to General Summary (page 41)
170 Occupied premises
Extent: Existing buildings will be occupied and/ or used during the Contract as follows:
The remainder of the school premises will be unoccupied during the contract works carried out during the summer holiday period. The Contractor should be aware however that members of staff will be using other areas of the school in preparation for the Autumn term. The school re-opens on Thursday 25th August 2015
Works: Carry out without undue inconvenience and nuisance and without danger to occupants and users.
Overtime: If compliance with this clause requires certain operations to be carried out during overtime, and such overtime is not required for any other reason, the extra cost will be paid to the Contractor, provided that such overtime is authorized in advance.

200 Mobile telephones and portable electronic equipment
Restrictions on use:
- Inside the school buildings.

210 Employer’s representatives site visits
Safety: Submit details in advance, to the Employer or the person identified in clause A10/140, of safety provisions and procedures (including those relating to materials, which may be deleterious), which will require their compliance when visiting the site.
Protective clothing and/ or equipment: Provide and maintain on site for the Employer and the person stated in clause A10/140 and other visitors to the site.

330 Noise control
Standard: Comply with the recommendations of BS 5228-1, in particular clause 7.3, to minimize noise levels during the execution of the Works.
Noise levels from the Works: Maximum level:
- 85 dB(A) when measured from the adjacent school premises.
Equipment: Fit compressors, percussion tools and vehicles with effective silencers of a type recommended by manufacturers of the compressors, tools or vehicles.
Restrictions: Do not use:
- Pneumatic drills and other noisy appliances without consent during the hours of 8.30am to 3.30pm
- Radios or other audio equipment or permit employees to use in ways or at times that may cause nuisance.

340 Pollution
Prevention: Protect the site, the Works and the general environment including the atmosphere, land, streams and waterways against pollution.
Contamination: If pollution occurs inform immediately, including to the appropriate Authorities and provide relevant information.

350 Pesticides
Use: Not permitted.
360 **Nuisance**
Duty: Prevent nuisance from smoke, dust, rubbish, vermin and other causes.
Surface water: Prevent hazardous build-up on site, in excavations and to surrounding areas and roads.

370 **Asbestos containing materials**
Duty: Report immediately any suspected materials discovered during execution of the Works.
- Do not disturb.
- Agree methods for safe removal or encapsulation.

371 **Dangerous or hazardous substances**
- Do not disturb.
- Agree methods for safe removal or remediation.

380 **Fire prevention**
Duty: Prevent personal injury or death, and damage to the Works or other property from fire.
Standard: Comply with Joint Code of Practice 'Fire Prevention on Construction Sites', published by the Construction Confederation and The Fire Protection Association (The 'Joint Fire Code').

390 **Smoking on site**
Smoking on site: Not permitted.

400 **Burning on site**
Burning on site: Not permitted.

410 **Moisture**
Wetness or dampness: Prevent, where this may cause damage to the Works.
Drying out: Control humidity and the application of heat to prevent:
- Blistering and failure of adhesion.
- Damage due to trapped moisture.
- Excessive movement.

420 **Infected timber/ Contaminated materials**
Removal: Where instructed to remove material affected by fungal/ insect attack from the building, minimize the risk of infecting other parts of the building.
Testing: carry out and keep records of appropriate tests to demonstrate that hazards presented by concentrations of airborne particles, toxins and other micro organisms are within acceptable levels.
**430 Waste**
Includes: Rubbish, debris, spoil, containers and surplus material.
Minimize: Keep the site and Works clean and tidy.
Remove: Frequently and dispose off site in a safe and competent manner:
- Non-hazardous material: In a manner approved by the Waste Regulation Authority.
- Hazardous material: As directed by the Waste Regulation Authority and in accordance with relevant regulations.
Voids and cavities in the construction: Remove rubbish, dirt and residues before closing in.
Waste transfer documentation: Retain on site.

**440 Electromagnetic interference**
Duty: Prevent excessive electromagnetic disturbance to apparatus outside the site.

**460 Power actuated fixing systems**
Use: Not permitted.

**510 Existing services**
Confirmation: Notify all service authorities, statutory undertakers and/ or adjacent owners of proposed works not less than one week before commencing site operations.
Identification: Before starting work, check and mark positions of utilities/ services. Where positions are not shown on drawings obtain relevant details from service authorities, statutory undertakers or other owners.
Work adjacent to services:
- Comply with service authority's/ statutory undertaker's recommendations.
- Adequately protect, and prevent damage to services: Do not interfere with their operation without consent of service authorities/ statutory undertakers or other owners.
Identifying services:
- Below ground: Use signboards, giving type and depth;
- Overhead: Use headroom markers.
Damage to services: If any results from execution of the Works:
- Immediately give notice and notify appropriate service authority/ statutory undertaker.
- Make arrangements for the work to be made good without delay to the satisfaction of service authority/ statutory undertaker or other owner as appropriate.
- Any measures taken to deal with an emergency will not affect the extent of the Contractor's liability.
Marker tapes or protective covers: Replace, if disturbed during site operations, to service authority's/ statutory undertakers recommendations.

**520 Roads and footpaths**
Duty: Maintain roads and footpaths within and adjacent to the site and keep clear of mud and debris.
Damage caused by site traffic or otherwise consequent upon the Works: Make good to the satisfaction of the Employer, Local Authority or other owner.
## Existing topsoil/ subsoil

**Duty:** Prevent over compaction of existing topsoil and subsoil in those areas which may be damaged by construction traffic, parking of vehicles, temporary site accommodation or storage of materials and which will require reinstatement prior to completion of the Works.

**Protection:** Before starting work submit proposals for protective measures.

## Retained trees/ shrubs/ grassed areas

**Protection:** Preserve and prevent damage, except those not required.

**Replacement:** Mature trees and shrubs if uprooted, destroyed, or damaged beyond reasonable chance of survival in their original shape, as a consequence of the Contractor's negligence, must be replaced with those of a similar type and age at the Contractor's expense.

## Retained trees

**Protected area:** Unless agreed otherwise do not:
- Dump spoil or rubbish, excavate or disturb topsoil, park vehicles or plant, store materials or place temporary accommodation within an area which is the larger of the branch spread of the tree or an area with a radius of half the tree's height, measured from the trunk.
- Sever roots exceeding 25 mm in diameter. If unintentionally severed give notice and seek advice.
- Change level of ground within an area 3 m beyond branch spread.

## Existing features

**Protection:** Prevent damage to existing buildings, fences, gates, walls, roads, paved areas and other site features, which are to remain in position during execution of the Works.

**Special requirements:** None

## Existing work

**Protection:** Prevent damage to existing work, structures or other property during the course of the work.

**Removal:** Minimum amount necessary.

**Replacement work:** To match existing.

## Building interiors

**Protection:** Prevent damage from exposure to the environment, including weather, flora, fauna, and other causes of material degradation during the course of the work.

## Existing furniture, fittings and equipment

**Protection:** Prevent damage or move as necessary to enable the Works to be executed. Reinstall in original positions.

**Extent:** Before work in each room starts the Employer will remove the following:
- Loose furniture and fittings.

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**Total for page £**

To be carried forward to General Summary (page 41)
### Adjoining property restrictions

**Precautions:**
- Prevent trespass of workpeople and take precautions to prevent damage to adjoining property.
- Pay all charges.
- Remove and make good on completion or when directed.

**Damage:** Bear cost of repairing damage arising from execution of the Works.

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<tbody>
<tr>
<td><strong>Existing structures</strong></td>
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<tr>
<td>Duty: Check proposed methods of work for effects on adjacent structures inside and outside the site boundary.</td>
<td></td>
</tr>
<tr>
<td>Supports: During execution of the Works:</td>
<td></td>
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<tr>
<td>- Provide and maintain all incidental shoring, strutting, needling and other supports as may be necessary to preserve stability of existing structures on the site or adjoining, that may be endangered or affected by the Works.</td>
<td></td>
</tr>
<tr>
<td>- Do not remove until new work is strong enough to support existing structure.</td>
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<tr>
<td>- Prevent overstressing of completed work when removing supports.</td>
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<td>Adjacent structures: Monitor and immediately report excessive movement.</td>
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<tr>
<td>Standard: Comply with BS 5975 and BS EN 12812.</td>
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<tbody>
<tr>
<td><strong>Materials for recycling/reuse</strong></td>
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<tr>
<td>Duty: Sort and prevent damage to stated products or materials, clean off bedding and jointing materials and other contaminants.</td>
<td></td>
</tr>
<tr>
<td>Storage: Stack neatly and protect until required by the Employer or for use in the Works as instructed.</td>
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### A35 SPECIFIC LIMITATIONS ON METHOD/SEQUENCE/TIMING

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<tbody>
<tr>
<td><strong>Method/sequence of work</strong></td>
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<tr>
<td>Specific Limitations: Include the following in the programme: Establish compound area and erect all necessary temporary hoardings to secure the site. These works comprise of the provision of temporary signage to any temporary routes made for the duration of the works. Please allow for these costs in this section of the preliminaries.</td>
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<td><strong>Use or disposal of materials</strong></td>
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<tr>
<td>Specific limitations:</td>
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<td>None.</td>
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<tr>
<td><strong>Working hours</strong></td>
<td></td>
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<tr>
<td>Specific limitations:</td>
<td></td>
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<tr>
<td>Do not work outside normal working hours without the Contract Administrator's approval.</td>
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</tbody>
</table>

### A36 FACILITIES/TEMPORARY WORK/SERVICES

**GENERALLY**

Total for page £

To be carried forward to General Summary (page 41)
110 **Spoil heaps, temporary works and services**
Location: Give notice and details of intended siting.
Maintenance: Alter, adapt and move as necessary. Remove when no longer required and make good.

160 **Temporary welfare facilities**
The Contractor shall provide for the following:
- Toilets provided to be operable and functioning when used. Normal flushing to be maintained in good working order.
- Hand wash basins provided shall be minimum 400mm wide to allow the washing of hands, face and forearms.
- Water flow rate shall be maintained to 1.5 litres per minute.
- Provide hot and cold running water.

230 **Temporary accommodation**
Proposals for temporary accommodation and storage for the Works: Submit two weeks prior to starting on site.
Details to be included: Type of accommodation and storage, its siting and the programme for site installation and removal.

310 **Roads**
Permanent roads, hard standings and footpaths on the site:
The following may be used, subject to clause A34/520:
- Details:
  Access ways to the site area.
  Restrictions on use:
  Heavy vehicles.
- Protective or remedial measures:
  Prevent damage and minimise the deposit of mud and clay on roads and footpaths. Adequately protect roads, car parks, pathways, playgrounds, kerbs and channels from all damage. Rectify any damage caused and pay all charges in connection therewith.

320 **Temporary works**
Employer's specific requirements: Provide:
- Hoardings; internal screens.

340 **Name boards/ advertisements**
Name boards/ advertisements: Not permitted.

420 **Lighting and power**
Supply: Electricity from the Employer's mains may be used for the Works as follows:
- Metering:
  Metered by the Contractor and charged to the Contractor
  Point of supply:
  To be ascertained by the Main Contractor
  Available capacity:
  To be ascertained by the Main Contractor
  Frequency: 50 Hz.
  Phase:
  To be ascertained by the Main Contractor prior to the execution of the works
  Current: Alternating.
  Continuity: The Employer will not be responsible for the consequences of failure or restriction in supply.

**Total for page £**
To be carried forward to General Summary (page 41)
430 Water
Supply: The Employer's mains may be used for the Works as follows:
- Metering:
  Metered by the Contractor and charged to the Contractor
- Source:
  To be ascertained by the Main Contractor prior to the execution of the works
- Location of supply point:
  To be ascertained by the Main Contractor prior to the execution of the works
- Conditions/ Restrictions:
  To be ascertained by the Main Contractor prior to the execution of the works
Continuity: The Employer will not be responsible for the consequences of failure or restriction in supply.

440 Telephones
Direct communication: As soon as practicable after the Date of Possession provide the Contractor's person in charge with a mobile telephone.

530 Beneficial use of installed systems
Permanent systems: Do not use for the Works.

540 Meter readings
Charges for service supplies: Where to be apportioned ensure that:
- Meter readings are taken by relevant authority at possession and/ or completion as appropriate.
- Copies of readings are supplied to interested parties.

550 Thermometers
General: Provide on site and maintain in accurate condition a maximum and minimum thermometer for measuring atmospheric shade temperature, in an approved location.

570 Personal protective equipment
General: Provide for the sole use of those acting on behalf of the Employer, in sizes to be specified:
- Safety helmets to BS EN 397, neither damaged nor time expired. Number required: 3
- High visibility waistcoats to BS EN 471 Class 2. Number required: 3
- Safety boots with steel insole and toecap to BS EN ISO 20345. Pairs required: 3
- Disposable respirators to BS EN 149.FFP1S.
- Ear protection - muffs to BS EN 352-1, plugs to BS EN 352-2
- Hand protection - to BS EN 388, 407, 420 or 511 as appropriate.
A37 OPERATION/ MAINTENANCE OF THE FINISHED WORKS

110 The building manual
Responsibility:
The Contractor
Content: Obtain and provide comprehensive information for owners and users of the completed Works. Include an overview of the main design principles and describe key components and systems within the finished Works, so affording a complete understanding of the Works, including all buildings and their systems to enable efficient and safe operation and maintenance.
Specific requirements:
Include an overview of the main design principles and describe key components and systems within the finished Works, so affording a complete understanding of the Works, including all buildings and their systems to enable efficient and safe operation and maintenance.
Format:
CD copies.
Number of copies:
Two
Delivery to:
YMD Boon Limited . by (date)
2 weeks prior to completion date.

115 Health and safety information
Content: Obtain and provide the following information:
Refer to document entitled "Information for the Health and Safety File" included in Appendix A to these Preliminaries
Format:
Refer to document entitled "Information for the Health and Safety File" included in Appendix A to these Preliminaries
Deliver to:
Contract Administrator
No later than:
Refer to document entitled "Information for the Health and Safety File" included in Appendix A to these Preliminaries

155 Content of the building manual
General: Details of the property, the parties, fire safety strategy, operational requirements and constraints of a general nature.
Building fabric: Design criteria, maintenance details, product details, and environmental and trafficking conditions.
Building services: Description and operation of systems, diagrammatic drawings, record drawings, identification of services, product details, equipment settings, maintenance schedules, consumable items, spares and emergency procedures.
Documentation: Guarantees, warranties, maintenance agreements, test certificates and reports.

To be carried forward to General Summary (page 41)
### Presentation of building manual
Format: A4 size, plastics covered, loose leaf, four ring binders with hard covers, each indexed, divided and appropriately cover titled.
Selected drawings needed to illustrate or locate items mentioned in the Manual: Where larger than A4, to be folded and accommodated in the binders so that they may be unfolded without being detached from the rings.
As-built drawings: The main sets may form annexes to the Manual.

### A40 CONTRACTOR’S GENERAL COST ITEMS:
**MANAGEMENT AND STAFF**
- **110 Management and staff**
  - Cost significant items:
    - Management and Staff

### A41 CONTRACTOR’S GENERAL COST ITEMS:
**SITE ACCOMMODATION**
- **110 Site accommodation**
  - Details: Site accommodation required or made/ not made available by the Employer: See section A36.
  - Cost significant items:
    - Site Accommodation

### A42 CONTRACTOR’S GENERAL COST ITEMS:
**SERVICES AND FACILITIES**
- **110 Services and facilities**
  - Details: Services or facilities required or made/ not made available by the Employer: See section A36.
  - Cost significant items:

### A43 CONTRACTOR’S GENERAL COST ITEMS:
**MECHANICAL PLANT**
- **110 Mechanical plant**
  - Cost significant items:
    - Hoists, Personnel Transport, Transport,
### A44 CONTRACTOR'S GENERAL COST ITEMS:
#### TEMPORARY WORKS

<table>
<thead>
<tr>
<th>110</th>
<th>Temporary works</th>
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<tbody>
<tr>
<td>Details: Temporary works required or made/ not made available by the Employer: See section A36.</td>
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<td>Cost significant items: Hoardings and Fencing, Internal Screens, Temporary Signage.</td>
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### A54 PROVISIONAL WORK/ ITEMS

<table>
<thead>
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<th>Provisional sums for defined work</th>
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<td>Item: Asbestos Removal</td>
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<tr>
<td>Description of work: Works involved with removal of asbestos based materials</td>
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<tr>
<td>Provisional Sums: Include £1500.00 (One Thousand &amp; Five Hundred Pounds)</td>
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<td>Allow for general attendance.</td>
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<td>Provisional sum: Include: £5,000.00 (Five Thousand Pounds)</td>
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Page 38

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Total carried to Tender Summary £

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Signed  

For and on behalf of  

Date  

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SECTION TWO

REFERENCE SPECIFICATION
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<td>F30 Accessories/ sundry items for brick/ block/ stone walling</td>
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<tr>
<td>K10 Plasterboard dry linings/ partitions/ ceilings</td>
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<td>K32 Panel cubicles/ duct and wall linings/ screens</td>
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<td>M50 Rubber/ plastics/ cork/ lino/ carpet tiling/ sheeting</td>
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<td>P31 Holes, chases, covers and supports for services</td>
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<td>Q10 Kerbs/ edgings/ channels/ paving accessories</td>
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C20 Demolition

To be read with Preliminaries/General conditions

GENERAL REQUIREMENTS

110 DESK STUDY/ SURVEY
  • Scope: Before starting deconstruction/ demolition work, examine available information, and carry out a survey of:
    - the structure or structures to be deconstructed/ demolished,
    - the site on which the structure or structures stand, and
    - the surrounding area.
  • Report and method statements: Submit, describing:
    - Form, condition and details of the structure or structures, the site, and the surrounding area.
    - Extent: Removal of internal load-bearing and non-loadbearing walls and chimney stack .
    - Type, location and condition of features of historical, archaeological, geological or ecological importance.
    - Type, location and condition of adjoining or surrounding premises that might be adversely affected by removal of the structure or structures, or by noise, vibration and/ or dust generated during deconstruction/ demolition.
    - Identity and location of services above and below ground, including those required for the Contractor's use, and arrangements for their disconnection and removal.
    - Form and location of flammable, toxic or hazardous materials, including lead-based paint, and proposed methods for their removal and disposal.
    - Form and location of materials identified for reuse or recycling, and proposed methods for removal and temporary storage.
    - Proposed programme of work, including sequence and methods of deconstruction/ demolition.
    - Details of specific pre-weakening required.
    - Arrangements for protection of personnel and the general public, including exclusion of unauthorized persons.
    - Arrangements for control of site transport and traffic.
    - Special requirements: None .
  • Format of report: Electronic submission in .pdf format .

120 EXTENT OF DECONSTRUCTION/ DEMOLITION
  • General: Subject to retention requirements specified elsewhere, deconstruct/ demolish structures down to below FFL level generally and make good surface finishes .

140 BENCH MARKS
  • Unrecorded bench marks and other survey information: Give notice when found. Do not remove marks or destroy the fabric on which they are found.

SERVICES AFFECTED BY DECONSTRUCTION/ DEMOLITION

210 SERVICES REGULATIONS
  • Work carried out to or affecting new and/ or existing services: Carry out in accordance with the byelaws and/ or regulations of the relevant Statutory Authority.
220  LOCATION OF SERVICES
   • Services affected by deconstruction/ demolition work: Locate and mark positions.
   • Mains services marking: Arrange with the appropriate authorities for services to be located and marked.
     - Marking standard: In accordance with National Joint Utilities Group 'Guidelines on the positioning and colour coding of underground utilities' apparatus'.

230  SERVICES DISCONNECTION ARRANGED BY CONTRACTOR
   • General: Arrange with the appropriate authorities for disconnection of services and removal of fittings and equipment owned by those authorities prior to starting deconstruction/ demolition.

240  DISCONNECTION OF DRAINS
   • General: Locate, disconnect and seal disused foul and surface water drains.
   • Sealing: Permanent, and within the site.

250  LIVE FOUL AND SURFACE WATER DRAINS
   • Drains and associated manholes, inspection chambers, gullies, vent pipes and fittings:
     - Protect; maintain normal flow during deconstruction/ demolition.
     - Make good any damage arising from deconstruction/ demolition work.
     - Leave clean and in working order at completion of deconstruction/ demolition work.
   • Other requirements: None.

260  SERVICE BYPASS CONNECTIONS
   • General: Provide as necessary to maintain continuity of services to occupied areas of the site on which the deconstruction/ demolition is taking place and to adjoining sites/ properties.
   • Minimum notice to adjoining owners and all affected occupiers: 72 hours, if shutdown is necessary during changeover.

270  SERVICES TO BE RETAINED
   • Damage to services: Give notice, and notify relevant service authorities and/ or owner/ occupier regarding damage arising from deconstruction/ demolition.
   • Repairs to services: Complete as directed, and to the satisfaction of the service authority or owner.

DECONSTRUCTION/ DEMOLITION WORK

310  WORKMANSHIP
   • Standard: Demolish structures in accordance with BS 6187.
   • Operatives:
     - Appropriately skilled and experienced for the type of work.
     - Holding, or in training to obtain, relevant CITB Certificates of Competence.
   • Site staff responsible for supervision and control of work: Experienced in the assessment of risks involved and methods of deconstruction/ demolition to be used.

320  GAS OR VAPOUR RISKS
   • Precautions: Prevent fire and/ or explosion caused by gas and/ or vapour from tanks, pipes, etc.

330  DUST CONTROL
   • General: Reduce airborne dust by periodically spraying deconstruction/ demolition works with an appropriate wetting agent. Keep public roadways and footpaths clear of mud and debris.
   • Lead dust: Submit method statement for control, containment and clean-up regimes.
340 HEALTH HAZARDS
• Precautions: Protect site operatives and general public from hazards associated with vibration, dangerous fumes and dust arising during the course of the Works.

350 ADJOINING PROPERTY
• Temporary support and protection: Provide. Maintain and alter, as necessary, as work proceeds. Do not leave unnecessary or unstable projections.
• Defects: Report immediately on discovery.
• Damage: Minimize. Repair promptly to ensure safety, stability, weather protection and security.
• Support to foundations: Do not disturb.

360 STRUCTURES TO BE RETAINED
• Extent: As drawings.
• Parts which are to be kept in place: Protect.
• Interface between retained structures and deconstruction/ demolition: Cut away and strip out with care to minimize making good.

370 PARTLY DEMOLISHED STRUCTURES
• General: Leave in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse. Make secure outside working hours.
• Temporary works: Prevent overloading due to debris.
• Access: Prevent access by unauthorized persons.

380 DANGEROUS OPENINGS
• General: Provide guarding at all times, including outside of working hours. Illuminate during hours of darkness.
• Access: Prevent access by unauthorized persons.

390 ASBESTOS-CONTAINING MATERIALS – KNOWN OCCURRENCES
• General: Materials containing asbestos are known to be present in: areas as indicated in the asbestos survey.
• Removal: By contractor licensed by the Health and Safety Executive, and prior to other works starting in these locations.

391 ASBESTOS-CONTAINING MATERIALS – UNKNOWN OCCURRENCES
• Discovery: Give notice immediately of suspected asbestos-containing materials when discovered during deconstruction/ demolition work. Avoid disturbing such materials.
• Removal: Submit statutory risk assessments and details of proposed methods for safe removal.

410 UNFORESEEN HAZARDS
• Discovery: Give notice immediately when hazards such as unrecorded voids, tanks, chemicals, are discovered during deconstruction/ demolition.
• Removal: Submit details of proposed methods for filling, removal, etc.

450 SITE CONDITION AT COMPLETION
• Debris: Clear away and leave the site in a tidy condition.
• Other requirements: None.
MATERIALS ARISING

510 CONTRACTOR’S PROPERTY

- Components and materials arising from the deconstruction/demolition work: Property of the Contractor except where otherwise provided.
- Action: Remove from site as work proceeds where not to be reused or recycled for site use.

511 EMPLOYER’S PROPERTY

- Components and materials to remain the property of the Employer: All sheds, benches & planters within the area of works.
- Protection: Maintain until these items are removed by the Employer or reused in the Works, or until the end of the Contract.
- Special requirements: None.

520 RECYCLED MATERIALS

- Materials arising from deconstruction/demolition work: Can be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification and in accordance with any site waste management plan.
- Evidence of compliance: Submit full details and supporting documentation.
  - Verification: Allow adequate time in programme for verification of compliance.
D20 Excavating and filling

To be read with Preliminaries/General conditions

GENERALLY/THE SITE

150 EXISTING SERVICES, FEATURES AND STRUCTURES
  • Services: See section A12 for locations.
  • Site features to be retained: See section A12 for details.
  • Structures: See section A34 for details of protection.

CLEARANCE/EXCAVATING

164 TREE ROOTS
  • Protected area: Do not cut roots within precautionary protection area.
    - Size of area: Branch spread of the tree.
  • Excavation in protected area:
    - Method: By hand.
    - Backfill as soon as possible or temporarily line with polyethylene sheet to reduce evaporation.
  • Outside protected area: Give notice of roots exceeding 25 mm and do not cut without approval.
  • Cutting:
    - Make clean smooth cuts with no ragged edges.
    - Pare cut surfaces smooth with a sharp knife.
    - Treatment of cut roots: Not required.
  • Backfill: As dug material, enriched with phosphate fertilizer.

168 SITE CLEARANCE
  • Timing: Before topsoil stripping, if any.
  • General: Clear site of rubbish, debris and vegetation. Do not compact topsoil.
  • Treatment: Apply a suitable non-residual herbicide to areas to receive planting.

170 REMOVING SMALL TREES, SHRUBS, HEDGES AND ROOTS
  • Identification: Clearly mark trees to be removed.
  • Small trees, shrubs and hedges: Cut down
  • Roots: Grub up and dispose of without undue disturbance of soil and adjacent areas
  • Safety: Comply with HSE/ Arboriculture and Forestry Advisory Group safety leaflets.

180 CHIPPING AND SHREDDING
  • General: Permitted, remove arisings from site.

220 STRIPPING TOPSOIL
  • General: Before beginning general excavation or filling, strip topsoil from areas where there will be regrading, buildings, pavings/roads and other areas shown on drawings.
  • Depth:
    - Remove to an average depth of 150 mm.
    - Give notice where the depth of topsoil is difficult to determine.
  • Handling: Handle topsoil for reuse or sale in accordance with clause 225.
  • Around trees: Do not remove topsoil from below the spread of trees to be retained.
  • Site storage: Keep separate from excavated sub-soil.
221 TREATING TOPSOIL
- Treatment: Apply a suitable translocated nonresidual herbicide.
- Timing: Not less than two weeks before excavating topsoil.

225 HANDLING TOPSOIL
- Standard: To BS 3882.
- Aggressive weeds:
  - Species: Included in the Weeds Act, section 2 or the Wildlife and Countryside Act, Schedule 9, part II.
  - Give notice: Obtain instructions before moving topsoil.
- Contamination: Do not mix topsoil with:
  - Subsoil, stone, hardcore, rubbish or material from demolition work.
  - Other soil or material containing aggressive weeds, sharps, plastics and non soil forming materials and notifiable animal or plant diseases.
  - Oil, fuel, cement or other substances harmful to plant growth.
  - Other classifications of topsoil.
- Multiple handling: Keep to a minimum. Use topsoil immediately after stripping.

330 UNRECORDED FEATURES
- Give notice: If unrecorded foundations, beds, voids, basements, filling, tanks, pipes, cables, drains, manholes, watercourses, ditches, etc. not shown on the drawings are encountered.

DISPOSAL OF MATERIALS

415 EXCAVATED TOPSOIL REMOVAL
- General: Remove from site.

450 WATER
- Generally: Keep all excavations free from water until:
  - Formations are covered.
  - Below ground constructions are completed.
  - Basement structures and retaining walls are able to resist leakage, water pressure and flotation.
- Drainage: Form surfaces of excavations and fill to provide adequate falls.
- Removal of water: Provide temporary drains, sumps and pumping as necessary. Do not pollute watercourses with silt laden water.

454 GROUND WATER LEVEL, SPRING OR RUNNING WATER
- Give notice: If it is considered that the excavations are below the water table.
- Springs/ Running water: Give notice immediately if encountered.

457 PUMPING
- General: Do not disturb excavated faces or stability of adjacent ground or structures.
- Pumped water: Discharge without flooding the site or adjoining property.
- Sumps: Construct clear of excavations. Fill on completion.
  - Locations: Submit proposals.
FILLING

500 PROPOSED FILL MATERIALS
• Details: Submit full details of proposed fill materials to demonstrate compliance with specification, including:
  - Type and source of imported fill.
  - Proposals for processing and reuse of material excavated on site.
  - Test reports as required elsewhere.
• Timing: At least 21 days before starting filling.

510 HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS
• General: Do not use fill materials which would, either in themselves or in combination with other materials or ground water, give rise to a health hazard, damage to building structures or instability in the filling, including material that is:
  - Frozen or containing ice.
  - Organic.
  - Contaminated or noxious.
  - Susceptible to spontaneous combustion.
  - Likely to erode or decay and cause voids.
  - With excessive moisture content, slurry, mud or from marshes or bogs.
  - Clay of liquid limit exceeding 80 and/or plasticity index exceeding 55.
  - Unacceptable, class U2 as defined in the Highways Agency 'Specification for highway works', clause 601.

512 LIMITATION OF SULFATE CONTENT IN FILL MATERIALS
• Test specification: To BRE Digest 279.
• Sulfate content: Expressed as SO3.
  - Water soluble sulfate (maximum): 1500 mg/L in 2:1 water/soil extract.
  - Total potential sulfate (maximum): 0.6%.
  - Oxidizable sulfides (maximum): No requirement.
• Certificates of test result: Submit.

520 FROST SUSCEPTIBILITY
• General: Except as allowed below, fill must be non frost-susceptible as defined in Highways Agency 'Specification for Highway Works', clause 801.8.
• Test reports: If the following fill materials are proposed, submit a laboratory report confirming they are non frost-susceptible:
  - Fine grained soil with a plasticity index less than 20%.
  - Coarse grained soil or crushed granite with more than 10% retained on a 0.063 mm sieve.
  - Crushed chalk.
  - Crushed limestone fill with average saturation moisture content in excess of 3%.
  - Burnt colliery shale.
• Frost-susceptible fill: May only be used:
  - At depths below the finished ground surface greater than: 600 mm.
  - Within the external walls of buildings below spaces that will be heated. Protect from frost during construction.
  - Where frost heave will not affect structural elements.
525 TESTING OF SUITABILITY OF FILL MATERIALS BEFORE START OF FILLING

- Laboratory: UKAS/ NAMAS accredited laboratory.
- Submit report to: Structural engineer (two copies).
- Timing: 21 days before starting filling.
- Samples: Deliver to laboratory as required.
- Additional requirements: None.
- Tests: As directed.
- Frequency: Submit with tender proposed rate and frequency of testing to demonstrate continuing compliance of imported or reprocessed fill with specified properties.

530 PLACING FILL

- Surfaces of excavations and areas to be filled: Free from loose soil, topsoil, organic material, rubbish and standing water.
- Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.
- Adjacent structures, membranes and buried services:
  - Do not overload, destabilise or damage.
  - Submit proposals for temporary support necessary to ensure stability during filling.
  - Allow 14 days (minimum) before backfilling against in situ concrete structures.
- Layers: Place so that only one type of material occurs in each layer.
- Earthmoving equipment: Vary route to avoid rutting.

535 COMPACTION GENERALLY

- General: Compact fill not specified to be left loose as soon as possible after placing.
- After compaction: Surface of each layer must be well closed, showing no movement under compaction plant, and without cracks, holes, ridges, loose material and the like.
- Defective areas: Remove and recompact to full thickness of layer using new material.

540 BENCHING IN FILL

- Adjacent areas: If, during filling the difference in level between adjacent areas of fill exceeds 600 mm, cut into edge of higher filling to form benches 600 mm minimum width and height equivalent to depth of a layer of compacted filling.
- New filling: Spread and compact to ensure maximum continuity with previous filling.

626 COMPACTED GENERAL FILL

- Suitable material: Make up shortfall in excavated material with imported material of a similar type.
- Excavated material: Select suitable material and keep separate.
- Filling: Spread and level material in layers. As soon as possible thoroughly compact each layer.
- Required compaction: To suit uses of fill as shown on drawing.
- Proposals: Well in advance of starting work submit details of proposed:
  - Materials to be used, including quantities of each type.
  - Type of plant.
  - Maximum depth of each compacted layer.
  - Minimum number of passes per layer.

640 STARTER LAYER OF COMPACTED FILLING

- Fill: Suitable hard granular material. Compact thoroughly.
- Thickness: 450 mm.
650 PROTECTION OF COMPACTED FILLING
• Temporary protective filling: Before allowing construction traffic, raise level of compacted cohesive soil filling at least 150 mm above formation level using properly compacted temporary filling.
• Removal: Remove temporary protective filling from site before permanent construction.

700 BACKFILLING AROUND FOUNDATIONS
• Under oversite concrete and pavings: Hardcore as clause 710.
• Under grassed or soil areas: Material excavated from the trench, laid and compacted in 300 mm maximum layers.

710 HARDCORE FILLING
• Fill: Granular material, free from excessive dust, well graded, all pieces less than 75 mm in any direction, minimum 10% fines value of 50 kN when tested in a soaked condition to BS 812-111, and in any one layer only one of the following:
  - Crushed rock (other than argillaceous rock) or quarry waste with not more binding material than is required to help hold the stone together.
  - Crushed concrete, crushed brick or tile, free from plaster, timber and metal.
  - Crushed non-expansive slag.
  - Gravel or hoggin with not more clay content than is required to bind the material together, and with no large lumps of clay.
  - Well-burned non-plastic colliery shale.
  - Natural gravel.
  - Natural sand.
• Filling: Spread and level in 150 mm maximum layers. Thoroughly compact each layer.

730 BLINDING
• Surfaces to receive sheet overlays or concrete:
  Blind with:
  - Concrete where shown on drawings; or
  - Sand, fine gravel, or other approved fine material applied to fill interstices. Moisten as necessary before final rolling to provide a flat, closed, smooth surface.
• Sand for blinding: To BS EN 12620, grade 0/4 or 0/2 (MP).
• Permissible deviations on surface level: +0 -25 mm.
E10 Mixing/casting/curing in situ concrete

To be read with Preliminaries/General conditions.

CONCRETE

101 SPECIFICATION
• Concrete generally: To BS 8500-2.
• Exchange of information: Provide concrete producer with information required by BS 8500-1, clauses 4 and 5.

MATERIALS, BATCHING AND MIXING

215 READY-MIXED CONCRETE
• Production plant: Currently certified by a body accredited by UKAS to BS EN 45011 for product conformity certification of ready-mixed concrete.
• Source of ready-mixed concrete: Obtain from one source if possible. Otherwise, submit proposals.
  - Name and address of depot: Submit before any concrete is delivered.
  - Delivery notes: Retain for inspection.
• Declarations of nonconformity from concrete producer: Notify immediately.

218 SITE MIXED CONCRETE
• Batching by mass:
  - Restrictions: None.
  - Accuracy of measuring devices: To BS EN 206-1, clause 9.6.2.2.
  - Tolerances for quantity of constituent material: To BS EN 206-1, table 21.
• Batching by volume:
  - Restrictions: None.
• Mixing: To BS 8000-2.1, subsections 2, 3 and 4.

221 INFORMATION ABOUT PROPOSED CONCRETES
• Submit when requested:
  - Details listed in BS 8500-1, clause 5.2.
  - Additional information: Data concerning the anticipated rate of strength gain.

225 CHANGES TO SPECIFICATION
• Changes to specification of fresh concrete (outside concrete producer’s responsibility): Submit proposals.

230 INTERRUPTION OF SUPPLY DURING CONCRETING
• Elements without joints: Where elements are detailed to be cast in a single pour without joints, make prior arrangements for a back-up supply of concrete.
• Elsewhere:
  - Preparation: Manage pour to have a full face, and have materials available to form an emergency construction joint while concrete can still be worked.
  - Before pour is completed: Submit location and details of joint, make proposals for joint preparation.

313 PROPRIETARY AGGREGATE
• Standard: To BS 8500-2.
315 AGGREGATES FOR EXPOSED VISUAL CONCRETE
- Limitations on contaminants: Free from absorbent particles which may cause 'popouts', and other particles such as coal and iron sulfide which may be unsightly or cause unacceptable staining.
- Colour: Consistent.
- Supply: From a single source and maintained throughout the contract.
- Samples: Submit on request.

325 MATERIALS FOR EXPOSED VISUAL CONCRETE
- Alterations to sources, types and proportions: Submit proposals.

415 ADMIXTURES
- Calcium chloride and admixtures containing calcium chloride: Do not use.

490 PROPERTIES OF FRESH CONCRETE
- Adjustments to suit construction process: Determine with concrete producer. Maintain conformity to the specification.

PROJECT TESTING/ CERTIFICATION

505 PROJECT TESTING OF CONCRETE - GENERAL
- Testing: To BS 8500-1, Annex B.
- Nonconformity: Obtain instructions immediately.
- Recording: Maintain complete correlated records including:
  - Concrete designation.
  - Sampling, site tests, and identification numbers of specimens tested in the laboratory.
  - Location of the parts of the structure represented by each sample.
  - Location in the structure of the batch from which each sample is taken.

PLACING/ COMPACTING/ CURING AND PROTECTING

620 TEMPERATURE OF CONCRETE
- Application: Under no circumstances shall the concrete have a temperature of less than 5°C at the time of placing; a minimum of 10°C is preferable.
- Objective: Limit maximum temperature of concrete to minimize cracking during placing, compaction and curing. Take account of:
  - High temperatures and steep temperature gradients: Prevent build-up during first 24 hours after casting. Prevent coincidence of maximum heat gain from cement hydration with high air temperature and/or solar gain.
  - Rapid changes in temperature: Prevent during the first seven days after casting.
- Proposals for meeting objective: Submit.

630 PREMATURE WATER LOSS
- Requirement: Prevent water loss from concrete laid on absorbent substrates.
  - Underlay: Select from:
    - Polyethylene sheet: 250 micrometres thick.
    - Building paper: To BS 1521, grade B1F.
  - Installation: Lap edges 150 mm.

648 ADVERSE TEMPERATURE CONDITIONS
- Requirement: Submit proposals for protecting concrete when predicted ambient temperatures indicate risk of concrete freezing or overheating.
SURFACES TO RECEIVE CONCRETE
  • Cleanliness of surfaces immediately before placing concrete: Clean with no debris, tying wire clippings, fastenings or free water.

INSPECTION OF SURFACES
  • Notice: Give notice to allow inspections of reinforcement and surfaces before each pour of concrete.
  - Period of notice: Obtain instructions.
  • Timing of inspections: To be agreed.

TRANSPORTING
  • General: Avoid contamination, segregation, loss of ingredients, excessive evaporation and loss of workability. Protect from heavy rain.
  • Entrained air: Anticipate effects of transport and placing methods in order to achieve specified air content.

PLACING
  • Records: Maintain for time, date and location of all pours.
  • Timing: Place as soon as practicable after mixing and while sufficiently plastic for full compaction.
  • Temperature limitations for concrete: 30°C (maximum) and 5°C (minimum), unless otherwise specified. Do not place against frozen or frost covered surfaces.
  • Continuity of pours: Place in final position in one continuous operation up to construction joints. Avoid formation of cold joints.
  • Discharging concrete: Prevent uneven dispersal, segregation or loss of ingredients or any adverse effect on the formwork or formed finishes.
  • Thickness of layers: To suit methods of compaction and achieve efficient amalgamation during compaction.
  • Poker vibrators: Do not use to make concrete flow horizontally into position, except where necessary to achieve full compaction under void formers and cast-in accessories and at vertical joints.

COMPACTING
  • General: Fully compact concrete to full depth to remove entrapped air. Continue until air bubbles cease to appear on the top surface.
  - Areas for particular attention: Around reinforcement, under void formers, cast-in accessories, into corners of formwork and at joints.
  • Consecutive batches of concrete: Amalgamate without damaging adjacent partly hardened concrete.
  • Methods of compaction: To suit consistence class and use of concrete.

LIGHTWEIGHT AGGREGATE CONCRETE
  • Placing and compacting: Prevent flotation of coarse aggregate and formation of excessive blowholes.

VIBRATORS
  • General: Maintain sufficient numbers and types of vibrator to suit pouring rate, consistency and location of concrete.
  • External vibrators: Obtain approval for use.
730 PLASTIC SETTLEMENT
  • Settlement cracking: Inspect fresh concrete closely and continuously wherever cracking is likely to occur, including the top of deep sections and at significant changes in the depth of concrete sections.
    - Timing: During the first few hours after placing and whilst concrete is still capable of being fluidized by the vibrator.
  • Removal of cracks: Revibrate concrete.

810 CURING GENERALLY
  • Requirement: Keep surface layers of concrete moist throughout curing period, including perimeters and abutments, by either restricting evaporation or continuously wetting surfaces of concrete.
    - Surfaces covered by formwork: Retain formwork in position and, where necessary to satisfy curing period, cover surfaces immediately after striking.
    - Top surfaces: Cover immediately after placing and compacting. If covering is removed for finishing operations, replace it immediately afterwards.
  • Surface temperature: Maintain above 5°C throughout the specified curing period or four days, whichever is longer.
  • Records: Maintain details of location and timing of casting of individual batches, removal of formwork and removal of coverings. Keep records on site, available for inspection.

811 COVERINGS FOR CURING
  • Sheet coverings: Suitable impervious material.
  • Curing compounds: Selection criteria:
    - Curing efficiency: Not less than 75% or for surfaces exposed to abrasion 90%.
    - Colouring: Fugitive dye.
    - Application to concrete exposed in the finished work: Readily removable without disfiguring the surface.
    - Application to concrete to receive bonded construction/finish: No impediment to subsequent bonding.
  • Interim covering to top surfaces of concrete: Until surfaces are in a suitable state to receive coverings in direct contact, cover with impervious sheeting held clear of the surface and sealed against draughts at perimeters and junctions.

812 PREVENTING EARLY AGE THERMAL CRACKING
  • Deep lifts or large volume pours: Submit proposals for curing to prevent early age thermal cracking, taking account of:
    - Temperature differentials across sections.
    - Coefficient of thermal expansion of the concrete.
    - Strain capacity of the concrete mix (aggregate dependent).
    - Restraint.

815 ADDITIONAL CURING REQUIREMENT - WATER CURING
  • Commencement of water curing: As soon as practicable after placing and compacting concrete.
    - Surfaces covered by formwork: Expose to water curing as soon as practicable.
    - Top surfaces: Cover immediately with impermeable sheeting to prevent evaporation before commencement of water curing.
  • Water curing: Wet surfaces continuously throughout curing period.
    - Select methods from:
      Mist spray.
      Wet hessian covered with impermeable sheeting.

818 CURING PERIODS GENERALLY
  • Minimum periods: When not otherwise indicated, to BS 8110-1, table 6.1.
820 CURING PERIODS FOR CONCRETE

- General: Curing periods are in days (minimum).
  - Definition of 't': The average surface temperature of concrete in degrees Celsius during the curing period.
- Curing periods for concrete made using CEM1 strength class 42.5 or 52.5, or SRPC class 42.5:
  - Drying winds or dry, sunny weather (relative humidity < 50%): 6 days when surface temperature is between 5°C and 10°C.
  - Intermediate conditions (relative humidity between 50 and 80%): 4 days when surface temperature is between 5°C and 10°C.
  - Damp weather, protected from sun and wind (relative humidity > 80%): 6 days when surface temperature is between 5°C and 10°C.
- Curing periods for concrete made using cements listed in BS8500-1, table A.6 except for those listed above and for supersulfated cement:
  - Drying winds or dry, sunny weather (relative humidity < 50%): 10 days when surface temperature is between 5°C and 10°C.
  - Intermediate conditions (relative humidity between 50 and 80%): 6 days when surface temperature is between 5°C and 10°C.
  - Damp weather, protected from sun and wind (relative humidity > 80%): 10 days when surface temperature is between 5°C and 10°C.
- Curing periods: For concretes using admixtures or other types of cements/combinations:
  Submit proposals.
- Other requirements: None.

840 PROTECTION

- Prevent damage to concrete, including:
  - Surfaces generally: From rain, indentation and other physical damage.
  - Surfaces to exposed visual concrete: From dirt, staining, rust marks and other disfiguration.
  - Immature concrete: From thermal shock, physical shock, overloading, movement and vibration.
  - In cold weather: From entrapment and freezing expansion of water in pockets, etc.
F10 Brick/ block walling

To be read with Preliminaries/ General conditions.

TYPES OF WALLING

110 CLAY FACING BRICKWORK ABOVE DPC
- Bricks: To BS EN 771-1.
  - Manufacturer: Contractors choice - to match existing.
  - Product reference: N/A.
  - Recycled content: None permitted.
  - Special shapes: None.
- Mortar: As section Z21.
  - Standard: Not applicable.
  - Mix: 1:3 masonry cement:sand.
  - Additional requirements: None.
- Bond: Half lap stretcher.
- Joints: Approved.
- Features: None.

380 CONCRETE COMMON BLOCKWORK TO INNER LEAF OF EXTERNAL WALLS & INTERNAL PARTITIONS
- Blocks: To BS EN 771-3.
  - Manufacturer: Hanson Building Products. Stewartby, Bedford, Bedfordshire, MK43 9LZ.
  - Tel: 08705 258258. Fax: 01234 762040. Web: www.hanson.com/uk Email: info.buildingproducts@hanson.com.
  - Product reference: Fenlite.
  - Compressive strength: Generally 3.6 N/mm². 7.3 N/mm² below ground.
  - Category: I.
  - Freeze/ Thaw resistance: F2.
  - Thermal properties: Thermal conductivity: 0.48 W/mK.
  - Recycled content: None permitted.
  - Work sizes (length x width x height): 440 x 100 x 215 mm.
  - Tolerance category: D1.
  - Special shapes: None.
  - Additional requirements: None.
- Mortar: As section Z21.
  - Standard: Not applicable.
  - Additional requirements: None.
- Bond: Half lap stretcher.
385 ENGINEERING BRICKWORK TO PADSTONE'S

• Bricks: To BS EN 771-1.
  - Manufacturer: Contractor’s choice.
  - Product reference: Contractor’s choice.
  - Type: HD.
  - Mean compressive strength: B. Greater than or equal to 75 N/mm².
  - Category: I.
  - Water absorption: Equal to or less than 7.5%.
  - Freeze/Thaw category: F2.
  - Active soluble salts content category: S2.
  - Additional requirements: None.
• Mortar: As section Z21.
  - Standard: Not applicable.
  - Mix: 1:0.25:3 cement:lime:sand.
  - Additional requirements: None.
• Bond: Half lap stretcher.
• Joints: Flush.

WORKMANSHIP GENERALLY

430 CONDITIONING OF CLAY AND CALCIUM SILICATE BRICKS AND CLAY BLOCKS

• Bricks and blocks delivered warm from manufacturing process: Do not use until cold.
• Absorbent bricks in warm weather: Wet to reduce suction. Do not soak.

440 CONDITIONING OF CONCRETE BRICKS/ BLOCKS

• Autoclaved concrete bricks/blocks delivered warm from manufacturing process: Do not use.
• Age of nonautoclaved concrete bricks/blocks: Do not use until at least four weeks old.
• Avoidance of suction in concrete bricks/blocks: Do not wet.
  - Use of water retaining mortar admixture: Submit details.
MORTAR GROUPS

- Mix proportions: For a specified group select a mix design from the following:
  - Group 1:
    1:0–0.25:3 (Portland cement:lime:sand with or without air entraining additive).
    1:3 (Portland cement:sand and air entraining additive).
  - Group 2:
    1:0.5:4–5 (Portland cement:lime:sand with or without air entraining additive).
    1:3 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
    1:2.5–3.5 (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
    1:3–4 (Portland cement:sand and air entraining additive.)
  - Group 3:
    1:1:5–6 (Portland cement:lime:sand with or without air entraining additive).
    1:3.5–4 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
    1:4–5 (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
    1:5–6 (Portland cement:sand and air entraining additive).
  - Group 4:
    1:2:8–9 (Portland cement:lime:sand with or without air entraining additive).
    1:4.5 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
    1:5.5–6.5 (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
    1:7–8 (Portland cement:sand and air entraining additive).
- Batching: Mix proportions by volume.
- Mortar type: Continuous throughout any one type of masonry work.

LAYING GENERALLY

- Mortar joints: Fill vertical joints. Lay bricks, solid and cellular blocks on a full bed.
- AAC block thin mortar adhesive and gypsum block adhesive joints: Fill vertical joints. Lay blocks on a full bed.
- Clay block joints:
  - Thin layer mortar: Lay blocks on a full bed.
  - Interlocking perpends: Butted.
- Bond where not specified: Half lap stretcher.
- Vertical joints in brick and concrete block facework: Even widths. Plumb at every fifth cross joint.

ACCURACY

- Courses: Level and true to line.
- Faces, angles and features: Plumb.
- Permissible deviations:
  - Position in plan of any point in relation to the specified building reference line and/ or point at the same level ± 10 mm.
  - Straightness in any 5 m length ± 5 mm.
  - Verticality up to 3 m height ± 10 mm.
  - Verticality up to 7 m height ± 14 mm.
  - Overall thickness of walls ± 10 mm.
  - Level of bed joints up to 5 m (brick masonry) ± 11 mm.
  - Level of bed joints up to 5 m (block masonry) ± 13 mm.
HEIGHT OF LIFTS IN WALLING USING CEMENT GAUGED OR HYDRAULIC LIME MORTAR
- Quoins and advance work: Rack back.
- Lift height (maximum): 1.2 m above any other part of work at any time.
- Daily lift height (maximum): 1.5 m for any one leaf.

HEIGHT OF LIFTS IN WALLING USING THIN JOINT MORTAR GLUE
- Quoins and advance work: Rack back.
- Lift height (maximum): 1.3 m above any other part of work at any time.

LEVELLING OF SEPARATE LEAVES
- Locations for equal levelling of cavity wall leaves: As follows:
  - Every course containing vertical twist type ties or other rigid ties.
  - Every third tie course for double triangle/butterfly ties.
  - Courses in which lintels are to be bedded.

COURSING BRICKWORK WITH EXISTING
- Gauge: Line up with existing brick courses.

LAYING FROGGED BRICKS
- Single frogged bricks: Frog uppermost.
- Double frogged bricks: Larger frog uppermost.
- Frog cavity: Fill with mortar.

LAYING CELLULAR BRICKS
- Orientation: Cavities downward.

LINTELS
- Bearing: Ensure full length masonry units occur immediately under lintel ends.

SUPPORT OF EXISTING WORK
- Joint above inserted lintel or masonry: Fully consolidated with semidry mortar to support existing structure.

BRICKWORK TO RECEIVE ASPHALT DPC
- Substrate: Mortar bed finished flush, smooth and level.

BLOCK BONDING NEW WALLS TO EXISTING
- Pocket requirements: Formed as follows:
  - Width: Full thickness of new wall.
  - Depth (minimum): 100 mm.
  - Vertical spacing:
    - Brick to brick: 4 courses high at 8 course centres.
    - Block to block: Every other course.
- Pocket joints: Fully filled with mortar.

JOINTING
- Profile: Consistent in appearance.

ACCESSIBLE JOINTS NOT EXPOSED TO VIEW
- Jointing: Struck flush as work proceeds.
665 POINTING TO ALL WALLING
- Mortar: As section Z21.
  - Standard: Not applicable.
  - Additional requirements: None.
- Profile: to match existing.

671 FIRE STOPPING
- Avoidance of fire and smoke penetration: Fit tightly between cavity barriers and masonry. Leave no gaps.

690 ADVERSE WEATHER
- General: Do not use frozen materials or lay on frozen surfaces.
- Air temperature requirements: Do not lay bricks/ blocks:
  - In cement gauged mortars when at or below 3°C and falling or unless it is at least 1°C and rising.
  - In hydraulic lime:sand mortars when at or below 5°C and falling or below 3°C and rising.
  - In thin joint mortar glue when outside the limits set by the mortar manufacturer.
- Temperature of walling during curing: Above freezing until hardened.
- Newly erected walling: Protect at all times from:
  - Rain and snow.
  - Drying out too rapidly in hot conditions and in drying winds.

ADDITIONAL REQUIREMENTS FOR FACEWORK

710 THE TERM FACEWORK
- Definition: Applicable in this specification to brick/ block walling finished fair.
- Painted facework: The only requirement to be waived is that relating to colour.

740 FINISHED MASONRY WORK REFERENCE PANELS
- General: Before proceeding to construct the following walling types, construct panels as specified. Give notice when panels are dry.
- Selection of masonry units: Reasonably representative of the average quality of the whole order to be delivered.
- Panel types:
  - Walling type: All.
  - Location: To be agreed.
  - Size: 1.5 x 1.5 m.
  - Other requirements: None.

750 COLOUR CONSISTENCY OF MASONRY UNITS
- Colour range: Submit proposals of methods taken to ensure that units are of consistent and even appearance within deliveries.
- Conformity: Check each delivery for consistency of appearance with previous deliveries and with approved reference panels; do not use if variation is excessive.
- Finished work: Free from patches, horizontal stripes and racking back marks.
760 APPEARANCE
  • Brick/block selection: Do not use units with damaged faces or arrises.
  • Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.
  • Quality control: Lay masonry units to match relevant reference panels.
    - Setting out: To produce satisfactory junctions and joints with built-in elements and components.
    - Coursing: Evenly spaced using gauge rods.
  • Lifts: Complete in one operation.
  • Methods of protecting facework: Submit proposals.

780 GROUND LEVEL
  • Commencement of facework: Not less than 150 mm below finished level of adjoining ground or external works level.

790 PUTLOG SCAFFOLDING
  • Use: Not permitted in facework.

800 TOOTHED BOND
  • New and existing facework in same plane: Bond together at every course to achieve continuity.

830 CLEANLINESS
  • Facework: Keep clean.
  • Mortar on facework: Allow to dry before removing with stiff bristled brush.
  • Removal of marks and stains: Rubbing not permitted.
F30 Accessories/ sundry items for brick/ block/ stone walling

To be read with Preliminaries/ General conditions.

CAVITIES

110 CONCRETE FILL TO BASE OF CAVITY
  • Concrete generally: To BS EN 206-1 and BS 8500-2.
  - Designated concrete: GEN 1.
  Workability: High.
  • Extent: Maintain 75 mm between top of fill and external ground level and a minimum of 225
    mm between top of fill and ground level dpc.
  • Placement: Compact to eliminate voids.

120 CLEANLINESS
  • Cavity base and faces, ties, insulation and exposed dpcs: Free from mortar and debris.

132 PERPEND JOINT PLASTICS WEEP HOLES
  • Manufacturer: Rytons Building Products Ltd. Design House, Orion Way, Kettering Business
    Park, Kettering, Northamptonshire, NN15 6NL. Tel: 01536 511874. Fax: 01536 310455.
    Web: www.vents.co.uk Email: lit@rytons.com.
  - Product reference: Rytons Rytweep® - Colour to be confirmed.
  • Locations: Through outer leaf immediately above base of cavity, at cavity trays, stepped
    dpcs and external openings. 75 mm above top of cavity fill at base of cavity.
  • Provision: At not greater than 1000 mm centres and not less than two over each opening.

145 FULL FILL CAVITY INSULATION
  • Insulation: Rock mineral wool batts to BS EN 13162.
  • Manufacturer: Knauf Insulation Ltd. PO Box 10, Stafford Road, St Helens, Merseyside,
    WA10 3NS. Tel: 01744 766600. Fax: 01744 612007. Web: www.knaufinsulation.co.uk
    Email: sales@knaufinsulation.com.
  - Product reference: DriTherm Cavity Slab 32 with ECOSE™ Technology.
  • Recycled content: None permitted.
  • Face size (nominal length x width): 1200 x 455 mm.
  • Thickness (nominal): 100 mm.
  • Thermal conductivity: 0.032 W/mK.
  • Reaction to fire class: A1.
  • Additional requirements: None.
  • Placement: Continuous and free of mortar and debris.

160 AIR BRICKS IN EXTERNAL WALLING
  • Standard: To BS 493, class 1.
  • Manufacturer: Manthorpe Group. Manthorpe House, Brittian Drive, Codnor Gate Business
    Park, Ripley, Derbyshire, DE5 3ND. Tel: 01773 514 200. Fax: 01773 514 262. Web:
    www.manthorpe.co.uk Email: bpsales@manthorpe.co.uk.
  - Product reference: G930 Air Brick.
  • Apertures: Rectangular hole.
  • Work sizes: 220 x 72 mm.
  • Material/Colour: Plastics - Terracotta.
  • Placement: Built in with no gaps at joints.
161 TELESCOPIC AIR VENTS
- Standard: To BS 493, class 1.
- Manufacturer: Manthorpe Group. Manthorpe House, Brittain Drive, Codnor Gate Business Park, Ripley, Derbyshire, DE5 3ND. Tel: 01773 514 200. Fax: 01773 514 262. Web: www.manthorpe.co.uk Email: bpsales@manthorpe.co.uk.
- Apertures: Rectangular hole.
- Work sizes: 220 x 72 mm.
- Placement: Built in with no gaps at joints.

162 REMOTE VOID VENTILATOR
- Standard: To BS 493, class 1.
- Manufacturer: Manthorpe Group. Manthorpe House, Brittain Drive, Codnor Gate Business Park, Ripley, Derbyshire, DE5 3ND. Tel: 01773 514 200. Fax: 01773 514 262. Web: www.manthorpe.co.uk Email: bpsales@manthorpe.co.uk.
- Design: Remote void ventilator is design to connect the G960 Telescopic Under Floor Void Ventilator to a length of 110 mm dia. soil pipe.
- Work sizes: 236 x 74 mm connector to G960 & 116 mm dia. connector to pipe.
- Placement: Built in with no gaps at joints.
- Accessories: Approx 2400 mm length of 110 mm dia. soil pipe to run below proposed Link Corridor floor construction. ICT Suite sub-floor to be excavated as necessary to ensure pipe adequately vents sub-floor space.

180 CAVITY CLOSERS AROUND OPENINGS TO ALL EXTERNAL WALLS
- Manufacturer: Kingspan Insulation Ltd. Pembridge, Leominster, Herefordshire, HR6 9LA. Tel: 0870 733 8333. Fax: 01544 387299. Web: www.insulation.kingspan.com Email: techline.uk@insulation.kingspan.com.
  - Product reference: Kingspan Thermabate® 100 - Green for 100–110 mm wide cavities.

REINFORCING/ FIXING ACCESSORIES

205 CAVITY WALL TIES FOR ALL CAVITY WALLS
- Standard: To BS EN 845-1.
  - Type: 2 (Masonry general purpose).
- Manufacturer: Ancon Building Products. President Way, President Park, Sheffield, South Yorkshire, S4 7UR. Tel: 0114 275 5224. Fax: 0114 276 8543. Web: www.ancon.co.uk Email: info@ancon.co.uk
  - Product reference: Double Triangle.
  - Sizes: 200 mm.

228 FIXING TIES IN MASONRY CAVITY WALLS WITH FULL FILL CAVITY INSULATION
- Embedment in mortar beds (minimum): 50 mm.
- Placement: Sloping slightly downwards towards outer leaf, without bending. Drip centred in the cavity and pointing downwards.
- Spacing: Staggered in alternate courses.
  - Horizontal centres: 900 mm.
  - Vertical centres: 450 mm.
- Provision of additional ties:
  - One row to support lowest row of insulation batts.
  - Within 225 mm of reveals of unbonded openings.
  - Spacing: At not more than 300 mm centres vertically.
241 **WALL STARTERS/ CONNECTORS**
- Manufacturer: Catnic. Pontypandy Industrial Estate, Caerphilly, CF83 3GL. Tel: 029 2033 7900. Fax: 029 2086 7796. Web: www.catnic.com  Email: catnic.technical@corusgroup.com .
  - Product reference: STRONGHOLD Wall Starter (SWC) .
  - Material/ finish: Stainless steel, to BS EN1088-2-1.4301 .
  - Sizes: 2 x 1200 mm long .

**FLEXIBLE DAMP PROOF COURSES/ CAVITY TRAYS**

330 **DAMP PROOF COURSE - ETHYLENE POLYPROPYLENE**
- Manufacturer: RIW.  Arc House, Terrace Road South,, Binfield, Bracknell, Berkshire, RG42 4PZ. Tel: 01344 397777. Fax: 01344 862010. Web: www.riw.co.uk  Email: technical@riw.co.uk .
  - Product reference: Sheetseal 9000 .

370 **PREFORMED CAVITY TRAYS**
- Manufacturer: RIW.  Arc House, Terrace Road South,, Binfield, Bracknell, Berkshire, RG42 4PZ. Tel: 01344 397777. Fax: 01344 862010. Web: www.riw.co.uk  Email: technical@riw.co.uk .
  - Product references and locations: Sheetseal 9000 .
  - Placement: To provide a free draining and watertight installation.

385 **PREFORMED DPC/ CAVITY TRAY JUNCTION CLOAKS/ STOP ENDS**
- Manufacturer: RIW.  Arc House, Terrace Road South,, Binfield, Bracknell, Berkshire, RG42 4PZ. Tel: 01344 397777. Fax: 01344 862010. Web: www.riw.co.uk  Email: technical@riw.co.uk .
  - Product references and locations: As shown on drawings.
  - Placement: Seal laps with dpcs and/ or cavity trays.

390 **SITE FORMED DPC/ CAVITY TRAY JUNCTIONS/ STOP ENDS**
- Three dimensional changes in shape: Form to provide a free draining and watertight installation. Seal laps.
- Alternative use of preformed junction cloaks/ stop ends: Submit proposals.

**INSTALLATION OF DPCS/ CAVITY TRAYS**

415 **HORIZONTAL DPCS**
- Placement: In continuous lengths on full even bed of fresh mortar, with 100 mm laps at joints and full laps at angles.
- Width: At least full width of leaf unless otherwise specified. Edges of dpc not covered with mortar or projecting into cavity.
- Overlying construction: Immediately cover with full even bed of mortar to receive next masonry course.
- Overall finished joint thickness: As close to normal as practicable.

425 **GROUND LEVEL DPCS**
- Joint with damp proof membrane: Continuous and effectively sealed.

435 **STEPPED DPCS IN EXTERNAL WALLS**
- External walls on sloping ground: Install dpcs not less than 150 mm above adjoining finished ground level.
445 SILL DPCS
- Form and placement: In one piece and turned up at back when sill is in contact with inner leaf.

455 COPING/ CAPPING DPCS
- Placement: Bed in one operation to ensure maximum bond between masonry units, mortar and dpc.
- Dpcs crossing cavity: Provide rigid support to prevent sagging.

465 SEALING DPCS GENERALLY
- Overlaps and junctions: Seal with Adhesive recommended by dpc manufacturer.

475 SITE FORMED CAVITY TRAYS
- Requirements to prevent downward ingress of water:
  - Profiles: To match those shown on drawings. Firmly secured.
  - Joint treatment: Use unjointed wherever possible, otherwise lap at least 100 mm and seal to produce a free draining and watertight installation.
  - Horizontal cavity trays: Support using cavity closer.
  - Sloping cavity trays: Prevent sagging.
  - Cleanliness: Free from debris and mortar droppings.

485 CAVITY TRAYS OVER OPENINGS AND OTHER CAVITY BRIDGINGS
- Length: To extend not less than 150 mm beyond ends of lintels/bridgings.

515 DPC/ CAVITY TRAY LEADING EDGE IN FACEWORK - FLUSH
- Treatment at face of masonry: Finish flush and clear of mortar at the following locations: Generally.

560 VERTICAL DPCS GENERALLY
- Form: In one piece wherever possible.
  - Joints: Upper part overlapping lower not less than 100 mm.

570 JAMB DPCS AT OPENINGS
- Joint with cavity tray/ lintel at head: Full underlap.
- Joint with sill/ horizontal dpc at base: Full overlap.
- Projection into cavity: Not less than 25 mm.
- Relationship with frame: In full contact.

580 JAMB DPCS TO BUILT IN TIMBER FRAMES
- Fixing: Securely fastened to back of frame.
  - Fasteners: Galvanized clout nails or staples.

JOINTS

605 MOVEMENT JOINTS WITH SEALANT TO EXTERNAL FACING BRICKWORK & EXTERNAL WALL STARTER LOCATIONS
- Joint preparation and sealant application: As section Z22.
- Refer to David Smith Associates drawings.

630 UNEXPOSED CONTRACTION JOINTS
- Formation: Close butt as work proceeds.
650** POINTING IN FLASHINGS**
- Joint preparation: Free of debris and lightly wetted.
- Pointing mortar: As for adjacent walling.
- Placement: Fill joint and finish flush.

660** PINNING UP TO SOFFITS**
- Top joint of loadbearing walls: Fill and consolidate with mortar.

665** TOPS OF NONLOADBEARING WALLS**
- Restraints: Generally.
  - Fixing: Secure to soffit.
- Manufacturer: Ancon Building Products. President Way, President Park, Sheffield, South Yorkshire, S4 7UR. Tel: 0114 275 5224. Fax: 0114 276 8543. Web: www.ancon.co.uk
  - Email: info@ancon.co.uk.
- Joint filler: Fire stopping & acoustic sealant.
- Manufacturer: PFC Corofil Fire Stop Products. Davis Road, Chessington, Surrey, KT9 1TU. Tel: 020 8391 0533. Fax: 020 8391 2723. Web: www.pfc-corofil.com
  - Email: sales@pfc-corofil.co.uk.
  - Product reference: Acoustic Intumescent Sealant
- Placement: Full, no gaps.

755** PREFABRICATED STEEL LINTELS**
- Standard: To BS EN 845-2.
- Manufacturer: Refer to Steven Bacon Design Structural Details.
  - Product reference: As above.
- Types: As schedule.
- Sizes: As schedule.
- Additional requirements: As schedule.
- Placement: Bed on mortar used for adjacent work.
  - Bearing length (minimum): 150 mm.

**MISCELLANEOUS ITEMS**

840** OPENINGS FOR FRAMES**
- Formation: Use accurate, rigid templates to required size.

850** WALL PLATES**
- Placement: On full bed of mortar to correct horizontal level.
G20 Carpentry/ timber framing/ first fixing

To be read with Preliminaries/ General conditions.

GENERAL

105 TIMBER PROCUREMENT

- Timber (including timber for wood based products): Obtained from well managed forests/plantations in accordance with:
  - The laws governing forest management in the producer country or countries.
  - International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
- Documentation: Provide either:
  - Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied, or
  - Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.

150 STRENGTH GRADING OF TIMBER

- Grader: A company currently registered under a third party quality assurance scheme operated by a certification body approved by the UK Timber Grading Committee.

160 GRADING AND MARKING OF SOFTWOOD

- Timber of a target/ finished thickness less than 100 mm and not specified for wet exposure: Graded at an average moisture content not exceeding 20% with no reading being in excess of 24% and clearly marked as 'DRY' or 'KD' (kiln dried).
- Timber graded undried (green) and specified for installation at higher moisture contents: Clearly marked as 'WET' or 'GRN'.
- Structural timber members cut from large graded sections: Regraded to approval and marked accordingly.

PRODUCTS

210 STRUCTURAL SOFTWOOD (GRADED DIRECT TO STRENGTH CLASS) FOR STRUCTURAL USE GENERALLY

- Grading standard: To BS 4978, BS EN 14081-1, or other national equivalent and so marked.
- Strength class to BS EN 338: C16 generally.
- Treatment:
    Design service life: 40 years.
  - Fire retardant treatment: None required.

265 UNGRADED SOFTWOOD FOR EXTERNAL NON-STRUCTURAL USE

- Quality of timber: Free from decay, insect attack (except pinhole borers) and with no knots wider than half the width of the section.
- Surface finish: Sawn.
- Treatment:
  - Design service life: 40 years.
  - Fire retardant treatment: None required.
270 UNGRADED SOFTWOOD FOR INTERNAL NON-STRUCTURAL USE
• Quality of timber: Free from decay, insect attack (except pinhole borers) and with no knots wider than half the width of the section.
• Surface finish: Sawn.
• Treatment:
  - Preservative treatment: None required.
  - Design service life: 40 years.
  - Fire retardant treatment: None required.

WORKMANSHIP GENERALLY

401 CROSS SECTION DIMENSIONS OF STRUCTURAL SOFTWOOD AND HARDWOOD
• Dimensions: Dimensions in this specification and shown on drawings are target sizes as defined in BS EN 336.
• Tolerances: The tolerance indicators (T1) and (T2) specify the maximum permitted deviations from target sizes as stated in BS EN 336, clause 4.3:
  - Tolerance class 1 (T1) for sawn surfaces.
  - Tolerance class 2 (T2) for further processed surfaces.

420 WARPING OF TIMBER
• Bow, spring, twist and cup: Not greater than the limits set down in BS 4978 or BS EN 14081-1 for softwood, or BS 5756 for hardwood.

430 SELECTION AND USE OF TIMBER
• Timber members damaged, crushed or split beyond the limits permitted by their grading: Do not use.

435 NOTCHES, HOLES AND JOINTS IN TIMBER
• Notches and holes: Position in relation to knots or other defects such that the strength of members will not be reduced.
• Scarf joints, finger joints and splice plates: Do not use without approval.

440 PROCESSING TREATED TIMBER
• Cutting and machining: Carry out as much as possible before treatment.
• Extensively processed timber: Retreat timber sawn lengthways, thicknessed, planed, ploughed, etc.
• Surfaces exposed by minor cutting/ drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

450 MOISTURE CONTENT
• Moisture content of wood and wood based products at time of installation: Not more than:
  - Covered in generally unheated spaces: 24%.
  - Covered in generally heated spaces: 20%.
  - Internal in continuously heated spaces: 20%.

451 MOISTURE CONTENT TESTING
• Procedure: When instructed, test timber sections with an approved electrical moisture meter.
• Test sample: Test 5% but not less than 10 lengths of each cross-section in the centre of the length.
• Test results: 90% of values obtained to be within the specified range. Provide records of all tests.
510 PROTECTION

• Generally: Keep timber dry and do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing.
• Timber and components: Store under cover, clear of the ground and with good ventilation. Support on regularly spaced, level bearers on a dry, firm base. Open pile to ensure free movement of air through the stack.
• Trussed rafters: Keep vertical during handling and storage.

530 PAINTED FINISHES

• Structural timber to be painted: Primed as specified before delivery to site.

540 CLEAR FINISHES

• Structural timber to be clear finished: Keep clean and apply first coat of specified finish before delivery to site.

550 EXPOSED TIMBER

• Planed structural timber exposed to view in completed work: Prevent damage to and marking of surfaces and arrises.

570 JOINTING/FIXING GENERALLY

• Generally: Where not specified precisely, select methods of jointing and fixing and types, sizes and spacings of fasteners in compliance with section Z20.

580 FRAMING ANCHORS

• Manufacturer: Expamet Building Products. Greatham Street, Longhill Industrial Estate (North), Hartlepool, Cleveland, TS25 1PU. Tel: 01429 866611. Fax: 01429 866633. Web: www.expamet.co.uk Email: sales@expamet.net.
  - Product reference: BAT - Framing anchors.
• Material/ finish: Galvanized low carbon steel.
• Fasteners: Galvanized or sherardized square twist nails.
  - Size: Not less than size recommended by anchor manufacturer.
• Fixing: Secure using not less than the number of nails recommended by anchor manufacturer.

630 BOLTED JOINTS

• Bolt spacings (minimum): To BS 5268-2, table 81.
• Holes for bolts: Located accurately and drilled to diameters as close as practical to the nominal bolt diameter and not more than 2 mm larger.
• Washers: Placed under bolt heads and nuts that would otherwise bear directly on timber. Use spring washers in locations which will be hidden or inaccessible in the completed building.
• Bolt tightening: So that washers just bite the surface of the timber. Ensure that at least one complete thread protrudes from the nut.
  - Checking: At agreed regular intervals up to Completion. Tighten as necessary.

670 ANTI-CORROSION FINISHES FOR FASTENERS

• Galvanizing: To BS 7371-6, with internal threads tapped and lightly oiled following treatment.
• Sherardizing: To BS 7371-8, Class 1.
• Zinc plating: To BS EN ISO 4042 and passivated.
ERECATION AND INSTALLATION

710 PROPOSALS FOR ERECTING STRUCTURAL TIMBER
• Proposals: Submit details of:
  - Method and sequence of erection.
  - Type of craneage.
  - Temporary guys and bracing proposed for use during erection.
• Latest date for submission: 10 days before erection starts.

740 PRE-ERECTION CHECKING
• Timing: Not less than 10 days before proposed erection start date.
• Checklist:
  - Foundations and other structures to which timber structure will be attached: Check for accuracy of setting out.
  - Holding down bolts: Check for position, protruding length, condition and slackness.
• Inaccuracies and defects: Report without delay.
• Erection: Obtain permission to commence.

750 MODIFICATIONS/REPAIRS
• Defects due to detailing or fabrication errors: Report without delay.
• Methods of rectification: Obtain approval of proposals before starting modification or remedial work.
• Defective/damaged components: Timber members/ components may be rejected if the nature and/or number of defects would result in an excessive amount of site repair.

760 TEMPORARY BRACING
• Provision: As necessary to maintain structural timber components in position and to ensure complete stability during construction.

770 ADDITIONAL SUPPORTS
• Provision: Position and fix additional studs, noggings and/ or battens to support edges of sheets materials, and wall/ floor/ ceiling mounted appliances, fixtures, etc. shown on drawings
• Material properties: Additional studs, noggings and battens to be of adequate size and have the same treatment, if any, as adjacent timber supports.

775 BEARINGS
• Timber surfaces which are to transmit loads: Finished to ensure close contact over the whole of the designed bearing area.
• Packings: Where provided, to cover the whole of the designed bearing area.
  - Crushing strength: Not less than timber being supported.
  - In external or inaccessible locations: Rot and corrosion proof.

780 WALL PLATES
• Position and alignment: To give the correct span and level for trusses, joists, etc.
• Bedding: Fully in fresh mortar.
• Joints: At corners and elsewhere where joints are unavoidable use nailed half lap joints. Do not use short lengths of timber.

784 JOISTS GENERALLY
• Centres: Equal, and not exceeding designed spacing.
• Bowed joists: Installed with positive camber.
• End joists: Positioned approximately 50 mm from masonry walls.
795 TRIMMING OPENINGS
• Trimmers and trimming joists: When not specified otherwise, not less than 25 mm wider than general joists.

830 LATERAL RESTRAINT STRAPS GENERALLY
• Manufacturer: Simpson Strong-Tie. Winchester Road, Cardinal Point, Tamworth, Staffordshire, B78 3HG. Tel: 01827 255600. Fax: 01827 255616. Web: www.strongtie.co.uk Email: web-uk@strongtie.com.
• Material/finish: Galvanized steel.
• Size: Not less than 30 x 5 mm cross section, 150 mm cranked end and 900 mm long.
• Fixing: To top of joists/rafters/ties at not more than 2.0 m centres and as shown on drawings.
  - Ensure that cranked end is in tight contact with cavity face of wall inner leaf and is not pointing upwards.
• Straps spanning joists/rafter/ties running parallel to wall: Fix noggings and packs tightly beneath straps.
  - Size of noggings and packs: Not less than three quarters of joist/rafter/tie depth and not less than 38 mm thick.
  - Notching: Notch joists so that straps fit flush with surface. Do not notch rafters/ties.
• Fasteners: Not less than four 50 mm x 8 gauge sherardized countersunk screws per strap, evenly spread.

850 INSPECTION GENERALLY
• Structural timber-work: Give reasonable notice before covering up.

860 BOLTED JOINTS INSPECTION
• Timing: Inspect all accessible bolts at the end of the Defects Liability Period and tighten if necessary.
K10 Plasterboard dry linings/ partitions/ ceilings

To be read with Preliminaries/ General conditions.

TYPES OF DRY LINING

185  WALL LINING SYSTEM (ADHESIVE) TO EXTERNAL WALLS
  • Manufacturer: Kingspan.
    - Product reference: Kooltherm K18 insulated plasterboard.
  • Wall: Brickwork.
  • Adhesive method: Dabs as clause 625.
  • Linings: One layer 15 mm Gyproc Duraline Wallboard plasterboard.
  • Finishing: Skim coat plaster.
    - Primer/ Sealer: Not required.
  • Accessories: Metal beads/ stops recommended by the board manufacturer.
  • Other requirements: None.

205  LINING ON TIMBER PARTITIONS
  • Background: 50 x 75 mm studs at 400 mm horizontal centres and 900 mm vertical centres.
  • Metal resilient (acoustic) bars: Not required.
  • Linings: One layer of 15mm Gyproc Duraline Wallboard plasterboard to both sides.
    - Fixing: Gyproc drywall timber screws.
  • Finishing: Skim coat plaster.
    - Primer/ Sealer: Not required.
  • Accessories: Beads/ stops as clause 692.
  • Other requirements: Fire stopping around service penetrations as section P12.

245  CEILING LINING ON TIMBER JOISTS
  • Background: Joists at 400 mm crs.
  • Metal resilient (acoustic) bars: Not required.
  • Linings: One layer 12.5 mm Gyproc Wallboard plasterboard.
    - Fixings: Screws.
  • Finishing: Skim coat plaster.
    - Primer/ Sealer: Not required.
  • Accessories: Metal beads/ stops recommended by board manufacturer.
  • Other requirements: Fire stopping around service penetrations as section P12.

255  ENCASEMENT SYSTEM (METAL FRAMING) TO STEEL COLUMNS & BEAMS
    - Product reference: GypLyner ENCASE.
  • Structural members: As drawings.
    - Extent of protection: Beams: Three sides.
  • Fire performance:
    - Protection to structural steel: To BS 476-21, 30 minutes.
  • Framing system: Sizes and spacing of framing and fixings as recommended by the board manufacturer.
  • Linings: 15 mm Gyproc Fireline plasterboard.
  • Finishing: Skim coat plaster.
    - Primer/ Sealer: Not required.
  • Accessories: Metal beads/ stops recommended by board manufacturer.
  • Other requirements: None.
ENCASEMENT ON TIMBER FRAMING TO SERVICE BOXINGS

- Timber framework: 44 x 44 mm with noggings at 600 mm maximum centres.
- Linings: 12.5 mm Gyproc Wallboard plasterboard.
  - Fixing: Gyproc drywall timber screws.
- Finishing: Skim coat plaster.
  - Primer/ Sealer: Not required.
  - Accessories: Metal beads/ stops recommended by board manufacturer.
- Other requirements: None.

GENERAL/ PREPARATION

COMPLIANCE WITH PERFORMANCE REQUIREMENTS

- Testing/ Assessment: Submit UKAS accredited laboratory reports for the following: Fire resistance: Partitions (including deflection heads and doorsets) and suspended ceilings (including access units).
- Materials, components and details: As used in testing/ assessment reports. If discrepancies arise, give notice.

PREPARATION OF MASONRY TO RECEIVE WALL LININGS

- General: Suitable to receive lining system. Redundant fixtures and services removed. Cutting, chasing and making good completed.
- Holes, gaps, service penetrations, perimeter junctions and around openings: Seal.
- Adhesive fixings: Prepare substrate to achieve effective bonding.
  - Contaminants: Remove loose material, dirt, grease, oil, paper, etc.
  - Absorption: Control by dampening, priming or applying bonding agents as necessary.

ADDITIONAL SUPPORTS

- Framing: Accurately position and securely fix to give full support to:
  - Partition heads running parallel with, but offset from main structural supports.
  - Fixtures, fittings and service outlets. Mark framing positions clearly and accurately on linings.
  - Board edges and lining perimeters, as recommended by board manufacturer to suit type and performance of lining.

NEW WET LAID BASES

- Dpcs: Install under full width of partitions/ freestanding wall linings.
  - Material: Bituminous sheet or plastics.

INSTALLATION

DRY LININGS GENERALLY

- General: Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
- Cutting plasterboards: Neatly and accurately without damaging core or tearing paper facing.
  - Cut edges: Minimize and position at internal angles wherever possible. Mask with bound edges of adjacent boards at external corners.
- Fixings boards: Securely and firmly to suitably prepared and accurately levelled backgrounds.
- Finishing: Neatly to give flush, smooth, flat surfaces free from bowing and abrupt changes of level.
CEILINGS
• Sequence: Fix boards to ceilings before installing dry lined walls and partitions.
• Orientation of boards: Fix with bound edges at right angles to supports and with ends staggered in adjacent rows.
• Two layer boarding: Stagger joints between layers.

STAGGERED STUD PARTITIONS
• Horizontal frame members (noggins, bearers, etc.) and boards: Fix between alternate studs and not touching adjacent offset studs.

INSTALLING MINERAL WOOL INSULATION
• Fitting insulation: Closely butted joints and no gaps. Use fasteners to prevent slumping or displacement.
• Services:
  - Electrical cables overlaid by insulation: Sized accordingly.
  - Ceilings: Cut insulation around electrical fittings, etc.

SEALING GAPS AND AIR PATHS
• Location of sealant: To perimeter abutments and around openings.
  - Pressurized shafts and ducts: At board-to-board and board-to-metal frame junctions.
• Application: To clean, dry and dust free surfaces as a continuous bead with no gaps.
  - Gaps greater than 6 mm between floor and underside of plasterboard: After sealing, fill with jointing compound.

CAVITY FIRE BARRIERS WITHIN PARTITIONS/ WALL LININGS
• Metal framed systems:
  - Material: Wire reinforced mineral wool 50 mm (minimum) thick.
  - Installation: Form accurately and fix securely with no gaps to provide a complete barrier to smoke and flame.
• Adhesive fixed wall lining systems:
  - Material: Adhesive compound.
  - Installation: Form in a continuous line with no gaps to provide a complete barrier to smoke and flame.

CAVITY FIRE BARRIERS WITHIN SUSPENDED CEILINGS
• Type: Wire reinforced mineral wool 50 mm (minimum) thick.
• Fire resistance: To BS 476-20, 30/30 minutes (Integrity/ Insulation).
• Ceiling void subdivision: Fix barriers not more than 20 m apart in any direction.
• Fixing at perimeters and joints: Secure, stable and continuous with no gaps, to provide a complete barrier to smoke and flame.
• Service penetrations: Cut and pack to maintain barrier integrity. Sleeve flexible materials. Adequately support services passing through barrier.
• Ceiling systems for fire protection: Do not impair fire resisting performance of ceiling system.

FIRE STOPPING AT PERIMETERS OF DRY LINING SYSTEMS
• Material: Tightly packed mineral wool or intumescent mastic/ sealant.
• Application: To perimeter abutments to provide a complete barrier to smoke and flame.

JOINTS BETWEEN BOARDS
• Tapered edged plasterboards:
  - Bound edges: Lightly butted.
  - Cut/ unbound edges: 3 mm gap.
• Square edged plasterboards: 3 mm gap.
• Square edged fibre reinforced gypsum boards: 5 mm gap.
565 VERTICAL JOINTS
- Joints: Centre on studs.
  - Partitions: Stagger joints on opposite sides of studs.
  - Two layer boarding: Stagger joints between layers.

570 HORIZONTAL JOINTS
- Surfaces exposed to view: Horizontal joints not permitted. Seek instructions where height of partition/lining exceeds maximum available length of board.
- Two layer boarding: Stagger joints between layers by at least 600 mm.
- Edges of boards: Support using additional framing.
  - Two layer boarding: Support edges of outer layer.

575 PLANK PLASTERBOARD
- First layer in two layer boarding: Square edged with long edges at right angles to studs.

580 INSULATION BACKED PLASTERBOARD
- General: Do not damage or cut away insulation to accommodate services.
- Installation at corners: Carefully cut back insulation or plasterboard as appropriate along edges of boards to give a continuous plasterboard face, with no gaps in insulation.

610 FIXING PLASTERBOARD TO TIMBER
- Fixing to timber: Securely at the following centres (maximum):
  - Nails: 150 mm.
  - Screws to partitions/wall linings: 300 mm. Reduce to 200 mm at external angles.
  - Screws to ceilings: 230 mm.
- Position of nails/screws from edges of boards (minimum):
  - Bound edges: 10 mm.
  - Cut/unbound edges: 13 mm.
- Position of nails/screws from edges of timber supports (minimum): 6 mm.

620 FIXING PLASTERBOARD WITH ADHESIVE DABS
- Setting out boards: Accurately aligned and plumb.
- Fixing to substrates: Securely using adhesive dabs.
- Adhesive dab spacings for each board:
  - Horizontally: One row along top edge and one continuous dab along bottom edge.
  - Vertically: One row along each edge and thereafter at intermediate spacings to suit size of board:
    - Thickness (mm)  Width (mm)  Dab centres (mm)
    - 9.5   1200   400
    - 9.5/12.5  900  450
    - 12.5   1200  600
- Adhesive dab dimensions (width x length): At least 50-75 mm x 250 mm.
  - Position of dabs from edges/ends of boards (minimum): 25 mm.

625 FIXING INSULATION BACKED PLASTERBOARD WITH ADHESIVE DABS
- Fixing to substrates: In addition to adhesive dab fixings, secure boards with nailable plugs in locations recommended by board manufacturer.
FINISHING

650  LEVEL OF DRY LINING ACROSS JOINTS
   • Sudden irregularities: Not permitted.
   • Joint deviations: Measure from faces of adjacent boards using methods and straightedges
     (450 mm long with feet/pads) to BS 8212, clause 3.3.5.
     - Tapered edge joints:
       Permissible deviation (maximum) across joints when measured with feet resting on
       boards: 3 mm.
     - External angles:
       Permissible deviation (maximum) for both faces: 4 mm.
     - Internal angles:
       Permissible deviation (maximum) for both faces: 5 mm.

670  SEAMLESS JOINTING TO PLASTERBOARDS
   • Cut edges of boards: Lightly sand to remove paper burrs.
   • Filling and taping: Fill joints, gaps and internal angles with jointing compound and cover
     with continuous lengths of paper tape, fully bedded.
   • Protection of edges/ corners: Reinforce external angles, stop ends, etc. with specified
     edge/ angle bead.
   • Finishing: Apply jointing compound. Feather out each application beyond previous
     application to give a flush, smooth, seamless surface.
   • Nail/ screw depressions: Fill with jointing compound to give a flush surface.
   • Minor imperfections: Remove by light sanding.

680  SKIM COAT PLASTER FINISH
   • Plaster type Thistle Board Finish.
     - Thickness: 2-3 mm.
   • Joints: Fill and tape except where coincident with metal beads.
   • Finish: Tight, matt, smooth surface with no hollows, abrupt changes of level or trowel
     marks.

692  RIGID BEADS/STOPS
   • Internal: To BS EN 13658-1.
   • External: To BS EN 13658-2.

695  INSTALLING BEADS/STOPS
   • Cutting: Neatly using mitres at return angles.
   • Fixing: Securely using longest possible lengths, plumb, square and true to line and level,
     ensuring full contact of wings with substrate.
   • Finishing: After joint compounds/plasters have been applied, remove surplus material
     while still wet from surfaces of beads exposed to view.

725  REPAIRS TO EXISTING PLASTERBOARD
   • Filling small areas with broken cores: Cut away paper facing, remove loose core material
     and fill with jointing compound.
     - Finish: Flush, smooth surface suitable for redecoration.
   • Large patch repairs: Cut out damaged area and form neat hole with rectangular sides.
     Replace with matching plasterboard.
     - Fixing: Use methods to suit type of dry lining, ensuring full support to all edges of
       existing and new plasterboard.
     - Finishing: Fill joints, tape and apply jointing compound to give a flush, smooth surface
       suitable for redecoration.
K32 Panel cubicles/ duct and wall linings/ screens

To be read with Preliminaries/ General conditions.

120 PANEL CUBICLES TO NEW TOILET BLOCK
- Manufacturer: Oliveti Cubicles - 2a Peatling Road, Countersthorpe, LEICS, LE8 5RD - Tel. 0116 2777771.
  - Product reference: Luca cubicles - Size B.
- Panels:
  - Height (overall): 1200 mm reducing to 1000 mm.
  - Floor clearance: 150 mm.
  - Core material: Solid grade laminate.
    Thickness: 12.5 mm.
  - Facings: Manufacturer's standard.
    Colour/ Pattern/ Species: As per finishes schedule.
  - Edge treatment: Black core with bullnosed edgings.
  - Wall support: Brackets.
- Pilasters:
  - Core material: Solid grade laminate.
    Thickness: 12.5 mm.
  - Facings: Manufacturer's standard.
    Colour/ Pattern/ Species: As per finishes schedule.
  - Edge treatment: Black core with bullnosed edgings.
- Doors:
  - Height: 900 mm.
  - Core material: Solid grade laminate.
    Thickness: 12.5 mm.
  - Facings: Manufacturer's standard.
    Colour/ Pattern/ Species: As per finishes schedule.
  - Edge treatment: Black core with bullnosed edgings.
  - Ironmongery: Manufacturer's standard powder coated fittings.
    Colour: As per finishes schedule.
- Fittings:
  - Headrails: None.
  - Pedestals/ Shoes: Manufacturer's standard powder coated shoes.
- Accessories: Coat hooks and Toilet roll holders.
- Other requirements: None.
DUCT/ WALL LININGS – PANELS ONLY TO NEW TOILET BLOCK

- Manufacturer: Oliveti Cubicles - 2a Peatling Road, Countersthorpe, LEICS, LE8 5RD - Tel. 0116 2777771.
  - Product reference: To match cubicles.

Panels:
  - Type: Plain, 1200 mm high.
  - Width (coordinating): As cubicles.
  - Core material: Solid grade laminate.
  - Thickness: 12.5 mm.
  - Facings: Manufacturer's standard.
  - Colour/ Pattern/ Species: As per finishes schedule.
  - Edge treatment: Black core with bullnosed edging.
  - Reaction to fire (minimum classification, finished panel): Manufacturer's standard.

- Fasteners: Manufacturer's standard.

Framing/ Support:
  - Duct panels: Softwood frame, site fabricated.
  - Wall panels: Softwood grounds, as panel manufacturer's recommendations.

Flashgap panels: Manufacturer's standard.

Skirting: Coved PVC - see section M50.

DUCT PANEL SUPPORT FRAMING – SITE FABRICATED SOFTWOOD TO IPS

- Framing: Softwood, free from decay and active insect attack and with no knots wider than half the width of the section.
  - Finished size: As panel manufacturer's recommendations.
  - Moisture content at time of fixing (maximum): 18%.
  - Spacing (centres): As panel manufacturer's recommendations.
  - Method of fixing: As panel manufacturer's recommendations.

- Treatment: As section Z12 and Wood Protection Association Commodity Specification FR3, Type HR (Humidity resistant).

INSTALLATION

- Programming: Do not install cubicles or duct/ wall panels before building is weathertight, wet trades have finished their work, wall and floor finishes are complete, and the building is well dried out.

- Accuracy: Set out to ensure frames and/ or panels and doors are plumb, level and accurately aligned.

- Modifications: Do not cut, plane or sand prefinished components except where shown on drawings.

- Fixing: Secure components using methods and fasteners recommended by the cubicle/ panel manufacturer. Prevent pulling away, bowing or other distortions to frames, panels and doors.

- Moisture and thermal movement: Make adequate allowance for future movement.
L10 Windows/ Rooflights/ Screens/ Louvres

To be read with Preliminaries/ General conditions.

GENERAL

120 SITE DIMENSIONS
• Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
• Designated items: All windows and glazed screens.

PRODUCTS

330 ALUMINIUM WINDOWS
• Manufacturer: Smart Systems Ltd. Arnolds Way, Yatton, North Somerset, BS49 4QN. Tel: 01934 876100. Fax: 01934 835169. Web: www.smartsystems.co.uk. Email: sales@smartsystems.co.uk.
- Product reference: Visoline top hung casement windows, consisting of the following profiles:
  - Outer frame: VL10
  - Vent: IN021/45
  - Transom/mullion: VL30
  - Cills: IN157
  - Bead: VL62.
• Finish as delivered: Polyester powder coating - colour to be confirmed.
• Glazing details: 28 mm thick insulating glass units, consisting 6mm toughened outer pane, 16 mm aluminium spacer, 6 mm laminated inner pane. All glass to BS 6206 and incorporating low emissivity glass (en = 0.05), air filled.
  - Beading: Internal.
• Ironmongery/ Accessories: Casement stays; Locking handles; Restrictors; Trickle ventilators.
• Fixing: Screwed to masonry reveal as clause 782.

350 PVC-U WINDOWS
• Manufacturer: Contractor's choice.
- Product reference: Contractor's choice.
- Colour/ Texture: White.
• Glazing details: Insulating glass units incorporating low emissivity glass (en = 0.1), argon filled.
  - Beading: Internal.
• Ironmongery/ Accessories:
  - Espagnolette lock;
  - Locking handle;
  - Restrictor; and
  - Trickle ventilator.
• Fixing: Through frame fixing as clause 783.

EXECUTION

710 PROTECTION OF COMPONENTS
• General: Do not deliver to site components that cannot be installed immediately or placed in clean, dry floored and covered storage.
• Stored components: Stack vertical or near vertical on level bearers, separated with spacers to prevent damage by and to projecting ironmongery, beads, etc.
750 BUILDING IN
   • General: Not permitted unless indicated on drawings.
     - Brace and protect components to prevent distortion and damage during construction of adjacent structure.

755 PVC-U WINDOW INSTALLATION
   • Standard: In accordance with clause 783 and British Plastics Federation 'Code of practice for the survey and installation of windows and external doorsets'.

760 REPLACEMENT WINDOW INSTALLATION
   • Standard: To BS 8213-4.

765 WINDOW INSTALLATION GENERALLY
   • Installation: Into prepared openings.
   • Gap between frame edge and surrounding construction:
     - Minimum: 5 mm.
     - Maximum: 10 mm.
   • Distortion: Install windows without twist or diagonal racking.

766 LOCATION OF OPENABLE WINDOWS IN NATURALLY VENTILATED BUILDINGS
   • Location: Over 10 m from sources of external pollution.

770 DAMP PROOF COURSES IN PREPARED OPENINGS
   • Location: Ensure correct positioning in relation to window frames. Do not displace during fixing operations.

782 FIXING OF ALUMINIUM FRAMES
   • Standard: As section Z20.
   • Fasteners: Stainless steel wood screws.
     - Spacing: When not predrilled or specified otherwise, position fasteners not more than 250 mm from ends of each jamb, adjacent to each hanging point of opening lights, and at maximum 600 mm centres.

790 FIRE RESISTING FRAMES
   • Gap between back of frame and reveal: Completely fill with tightly packed mineral wool.

810 SEALANT JOINTS
   • Sealant:
     - Manufacturer: Dow Corning Ltd. Meriden Business Park, Copse Drive, Allesley, Coventry, West Midlands, CV5 9RG. Tel: 01676 528000. Fax: 01676 528001. Web: www.dowcorning.com Email: marie.elliott@dowcorning.com.
     - Colour: White.
     - Application: As section Z22 to prepared joints. Finish triangular fillets to a flat or slightly convex profile.

820 IRONMONGERY
   • Fixing: Assemble and fix carefully and accurately using fasteners with matching finish supplied by ironmongery manufacturer. Do not damage ironmongery and adjacent surfaces.
   • Checking/ Adjusting/ Lubricating: Carry out at Completion and ensure correct functioning.
L20 Doors/ shutters/ hatches

To be read with Preliminaries/ General conditions.

GENERAL

112 TIMBER PROCUREMENT
• Timber (including timber for wood-based products): Obtained from well-managed forests and/ or plantations in accordance with:
  - The laws governing forest management in the producer country or countries.
  - International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
• Documentation: Provide either:
  - Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied.
  - Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood-based products.
• Certification scheme: Forest Stewardship Council (FSA).
  - Other evidence: None.

115 FIRE RESISTING DOORS/ DOORSETS/ ASSEMBLIES
• Evidence of fire performance: Provide certified evidence, in the form of a product conformity certificate, directly relevant fire test report or engineering assessment, that each door/ doorset/ assembly supplied will comply with the specified requirements for fire resistance if tested to BS 476-22, BS EN 1634-1 or BS EN 1634-3. Such certification must cover door and frame materials, glass and glazing materials and their installation, essential and ancillary ironmongery, hinges and seals.

120 NON FIRE RESISTING DOORS/ DOORSETS/ ASSEMBLIES
• Provide certified evidence, in the form of a product conformity certificate or engineering assessment, that each door/ doorset/ assembly supplied will comply with the specified requirements to BS EN 14351-1. Such certification must cover door and frame materials, glass and glazing materials and their installation, essential and ancillary ironmongery, hinges and seals.

150 SITE DIMENSIONS
• Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
• Designated items: All doors.
PRODUCTS

230 WOOD FLUSH DOORS INTERNAL PAINT GRADE FD30S FIRE RESISTING GLAZED DOORS
- Manufacturer: Hazlin of Ludlow Ltd. Station Works, Bromfield, Ludlow, Shropshire, SY8 2BT. Tel: 01584 856439. Fax: 01584 856520. Web: www.hazlin.co.uk Email: sales@hazlin.co.uk.
  - Product reference: Hazcore CA1 44 mm thick solid graduated density chipboard - severe duty.
  - Fire resistance: 30 min.
- Facings: Interior grade plywood.
- Lippings: Concealed lippings to long edges.
- Preservative treatment: Not required.
- Finish as delivered: Full factory finish.
- Glazing/ Infill details: Clear fire-resisting glazing.
- Manifestation: Not applicable.
- Beading: Factory fitted.
- Other requirements: Ironmongery as per section P21.

231 WOOD FLUSH DOORS INTERNAL PAINT GRADE FD30S FIRE RESISTING FLUSH DOORS
- Manufacturer: Hazlin of Ludlow Ltd. Station Works, Bromfield, Ludlow, Shropshire, SY8 2BT. Tel: 01584 856439. Fax: 01584 856520. Web: www.hazlin.co.uk Email: sales@hazlin.co.uk.
  - Product reference: Hazcore CA1 44 mm thick solid graduated density chipboard - severe duty.
  - Fire resistance: 30 min.
- Facings: Interior grade plywood.
- Lippings: Concealed lippings to long edges.
- Preservative treatment: Not required.
- Finish as delivered: Full factory finish.
- Glazing/ Infill details: None.
- Manifestation: Not applicable.
- Beading: Not required.
- Other requirements: Ironmongery as per section P21.

330 WOOD DOOR FRAMES TO ALL INTERNAL DOORS
- Materials: Generally to BS EN 942.
  - Species: Softwood as table NA1.
  - Appearance class: J40.
- Assembly:
  - Adhesive: PVAC to BS EN 204, Class D4.
  - Joinery workmanship: As section Z10.
- Preservative treatment: Not required.
- Moisture content on delivery: 9-13%.
- Finish as delivered: Prepared and primed, as section M60.
- Perimeter seals: To all fire doors: Sealmaster. Brewery Road, Pampisford, Cambridge, Cambridgeshire, CB22 3HG. Tel: 01223 832851. Fax: 01223 837215. Web: www.sealmaster.co.uk Email: sales@sealmaster.co.uk
  - Product ref: N30 generally. IMN/IMP to double action or double leaf doors.
- Fixing: Plugged and screwed as section Z20.
480 DOORSETS ALUMINIUM

- Manufacturer: Smart Systems Ltd. Arnolds Way, Yatton, North Somerset, BS49 4QN. Tel: 01934 876100. Fax: 01934 835169. Web: www.smartsystems.co.uk Email: sales@smartsystems.co.uk.
  - Product reference: Smart-Wall Door.
- Door leaf: External doorsets.
  - Finish as delivered: Polyester powder coated.
- Frame and architraves: External door frames.
  - Finish as delivered: Polyester powder coated.
- Glazing/ Infill details: Clear double glazing.
  - Manifestation: Not applicable.
  - Beading: Internal.
- Ironmongery: As section P21.
- Perimeter seals: EPDM weatherseal.
- Other requirements: None.
- Fixing: Plugged and screwed.

EXECUTION

710 PROTECTION OF COMPONENTS
- General: Do not deliver to site components that cannot be installed immediately or placed in clean, dry, floored and covered storage.
- Stored components: Stacked on level bearers, separated with spacers to prevent damage by and to projecting ironmongery, beads, etc.

730 PRIMING/ SEALING
- Wood surfaces inaccessible after installation: Primed or sealed as specified before fixing components.

740 CORROSION PROTECTION
- Surfaces to be protected: Aluminium alloy components in contact with preservative treated timber.
- Protective coating: Two coats of bitumen solution to BS 6949 or an approved mastic impregnated tape.
  - Timing of application: Before fixing components.

750 FIXING DOORSETS
- Timing: After associated rooms have been made weathertight and the work of wet trades is finished and dried out.

760 BUILDING IN
- General: Not permitted unless indicated on drawings.

770 DAMP PROOF COURSES ASSOCIATED WITH BUILT IN WOOD FRAMES
- Method of fixing: To backs of frames using galvanized clout nails.

780 DAMP PROOF COURSES IN PREPARED OPENINGS
- Location: Correctly positioned in relation to door frames. Do not displace during fixing operations.

790 FIXING OF WOOD FRAMES
- Spacing of fixings (frames not predrilled): Maximum 150 mm from ends of each jamb and at 600 mm maximum centres.
800 FIXING OF LOOSE THRESHOLDS
- Spacing of fixings: Maximum 150 mm from each end and at 600 mm maximum centres.

810 FIRE RESISTING/ SMOKE CONTROL DOORS/ DOORSETS/ ROLLER SHUTTERS/ CURTAINS
- Gaps between frames and supporting construction: Filled as necessary in accordance with requirements for certification and/or door/doorset manufacturer’s instructions.

820 SEALANT JOINTS
- Sealant:
  - Colour: White.
  - Application: As section Z22 to prepared joints. Triangular fillets finished to a flat or slightly convex profile.

830 FIXING IRONMONGERY GENERALLY
- Fasteners: Supplied by ironmongery manufacturer.
  - Finish/Corrosion resistance: To match ironmongery.
- Holes for components: No larger than required for satisfactory fit/operation.
- Adjacent surfaces: Undamaged.
- Moving parts: Adjusted, lubricated and functioning correctly at completion.

840 FIXING IRONMONGERY TO FIRE RESISTING DOOR ASSEMBLIES
- General: All items fixed in accordance with door leaf manufacturer’s recommendations ensuring that integrity of the assembly, as established by testing, is not compromised.
- Holes for through fixings and components: Accurately cut.
  - Clearances: Not more than 8 mm unless protected by intumescent paste or similar.
  - Lock/Latch cases for fire doors requiring > 60 minutes integrity performance: Coated with intumescent paint or paste before installation.

850 LOCATION OF HINGES
- Primary hinges: Where not specified otherwise, positioned with centre lines 250 mm from top and bottom of door leaf.
- Third hinge: Where specified, positioned with centre line 250 mm below centre line of top hinge.
- Hinges for fire resisting doors: Positioned in accordance with door leaf manufacturer’s recommendations.

860 INSTALLATION OF EMERGENCY EXIT DEVICES
- Standard: Unless specified otherwise, install panic bolts/latches in accordance with BS EN 1125.
L40 General glazing

To be read with Preliminaries/ General conditions.

GENERAL REQUIREMENTS

110 PREGLAZING
  • Preglazing of components: Not permitted.

130 REMOVAL OF GLASS/ PLASTICS FOR REUSE
  • Existing glass/ plastics and glazing compound, beads, etc: Remove carefully, avoiding damage to frame, to leave clean, smooth rebates free from obstructions and debris.
  • Deterioration of frame/ surround: Submit report on defects revealed by removal of glazing.
    - Affected areas: Do not reglaze until instructed.
  • Reusable materials: Clean glass/ plastics, beads and other components that are to be reused.

150 WORKMANSHIP GENERALLY
  • Glazing generally: To BS 6262.
  • Integrity: Glazing must be wind and watertight under all conditions with full allowance made for deflections and other movements.
  • Dimensional tolerances: Panes/ sheets to be within ± 2 mm of specified dimensions.
  • Materials:
    - Compatibility: Glass/ plastics, surround materials, sealers, primers and paints/ clear finishes to be used together to be compatible. Avoid contact between glazing panes/ units and alkaline materials such as cement and lime.
    - Protection: Keep materials dry until fixed. Protect insulating glass units and plastics glazing sheets from the sun and other heat sources.

152 PREPARATION
  • Surrounds, rebates, grooves and beads: Clean and prepare before installing glazing.

155 GLASS GENERALLY
  • Standards: To BS 952 and relevant parts of:
    - BS EN 572 for basic soda lime silicate glass.
    - BS EN 1096 for coated glass.
    - BS EN 1748-1 for borosilicate glass.
    - BS EN 1748-2 for ceramic glass.
    - BS EN 1863 for heat strengthened soda lime silicate glass.
    - BS EN 12150 for thermally toughened soda lime silicate safety glass.
    - BS EN 12337 for chemically strengthened soda lime silicate glass.
    - BS EN 13024 for thermally toughened borosilicate safety glass.
    - BS EN ISO 12543 for laminated glass and laminated safety glass.
  • Panes/ sheets: Clean and free from obvious scratches, bubbles, cracks, rippling, dimples and other defects.
    - Edges: Generally undamaged. Shells and chips not more than 2 mm deep and extending not more than 5 mm across the surface are acceptable if ground out.

170 PLASTICS GLAZING SHEET
  • Condition: Free from scratches, edge splits and other defects.
  • Preparation for use: Protective coverings carefully peeled back from edges and trimmed off to facilitate glazing. Remainder retained in place until completion unless instructed otherwise.
181  **BEAD FIXING WITH SCREWS**
- Screw spacing: Regular at maximum 225 mm centres, and within 75 mm of each corner.

**TYPES OF GLAZING**

370  **BEAD FIXED INSULATING GLASS UNITS TO EXTERNAL DOORS & SCREEN**
- Pane material: 28 mm insulating glass units to BS EN 1279 and Kitemark certified.
  - Inner pane: 6 mm laminated safety glass to BS 6206.
  - Outer pane: 6 mm clear toughened glass to BS 6206.
  - Spacer: 16 mm mill finished aluminium.
- Perimeter taping: Do not use.
- Surround/ bead: Aluminium.
  - Preparation: Priming/ sealing not required.
  - Bead location: Inside.
  - Bead fixing: Proprietary clip fixing.
- Glazing system: Preformed gasket sections supplied by window manufacturer.
- Glazing installation:
  - Insulating unit: Located centrally in surround using setting and location blocks.
  - Gaskets and beads: Installed as recommended by frame manufacturer.
    - Gasket fit at corners: Tight, without gaps.
  - Drainage and ventilation holes: Unobstructed.

371  **BEAD FIXED INSULATING GLASS UNITS TO EXTERNAL WINDOWS**
- Pane material: 28 mm insulating glass units to BS EN 1279 and Kitemark certified.
  - Inner pane: 6 mm laminated safety glass to BS 6206.
  - Outer pane: 6 mm toughened insulating glass to BS 6206.
  - Spacer: 16 mm mill finished aluminium.
- Perimeter taping: Do not use.
- Surround/ bead: PVC-U.
  - Preparation: Priming/ sealing not required.
  - Bead location: Inside.
  - Bead fixing: Proprietary clip fixing.
- Glazing system: Preformed gasket sections supplied by window manufacturer.
- Glazing installation:
  - Insulating unit: Located centrally in surround using setting and location blocks.
  - Glazing sections/ strips/ tapes: Applied to rebate upstands and beads in positions recommended by manufacturer.
  - Beads: Installed using sufficient pressure to compress inner and outer sections/ strips/ tapes and fixed securely.
  - Drainage and ventilation holes: Unobstructed.
505  FIRE RESISTANT TAPE/ STRIP GLAZING TO INTERNAL GLAZED SCREENS

- Fire resistance rating: 30 minutes integrity.
- Pane material: AGC Flat Glass UK. Chestnut Field, Regent Place, Rugby, Warwickshire, CV21 2TL. Tel: 01788 535353. Fax: 01788 560853. Web: www.yourglass.com Email: riba.uk@eu.agc-flatglass.com Product ref: Pyrobelite 7mm thick laminated glass.
  - Orientation: Not applicable.
- Frame/ Surround material: Softwood framing.
- Beads:
  - Material: 25W x 23H mm hardwood beads with 15° chamfer.
  - Location: Inside.
  - Fixing: 38 mm long No 8 stainless steel screws and cups at maximum 200 mm centres (30° to glass).
- Glazing system:
  - Tape/ Strip: 15 mm wide by 5 mm thick ceramic fibre tape or 12 mm wide by 5 mm thick closed cell foam tape.
  - Pointing sealant: Silicone mastic.
- Installation: By a firm currently registered under a UKAS certified accreditation scheme for the installation of fire resistant glazing, in accordance with glazing manufacturer's recommendations.

610  WINDOW FILM

- Type: Safety.
  - Product reference: Solar Gard Armorcoat® 4 Mil Clear Safety Film - As supplied / fitted by IGP Solutions Ltd. 16 Hillbottom Rd, High Wycombe, HP12 4HJ. Tel: 01494 533131. Fax: 01494 462675. Web: www.igpsolutions.com Email: andy.trickett@igpsolutions.com.
  - Colour: Neutral.
- Application: Carried out by a firm approved by the film manufacturer in accordance with manufacturer's recommendations.
  - Evidence of applicator's competence and experience: Submit on request.
  - Sample area: Complete as part of the finished work, in an approved location and obtain approval of appearance before proceeding.
  - Ambient air temperature at time of application: Above 5°C.
- Installed film: Fully adhered to the glass with no peeling, and free from bubbles, wrinkles, cracks or tears.
- Further contact with applied films: Avoid until bonding adhesive has cured.
- Cleaning and maintenance instructions: Submit copies.
M10 Cement based levelling/ wearing screeds

To be read with Preliminaries/General conditions.

TYPES OF SCREED

115 CEMENT:SAND LEVELLING SCREENS TO EXISTING GARAGE AREA

- Substrate: In situ concrete slab with insulation boards over.
- Screed construction: Floating, as clause 290.
  - Reinforcement for crack control: Steel fabric, as clause 392.
- Thickness:
  - Nominal: 75 mm.
  - Minimum: 65 mm.
- Mix:
  - Proportions (cement:sand): To BS 8204-1.
  - In situ crushing resistance (ISCR) category: B (4 mm maximum indentation).
  - Mass of test weight: 4 kg.
- Flatness/ Surface regularity class: SR2.
- Finish: Trowelled, as clause 540.
  - To receive: Carpet/entrance matting.
- Other requirements: None.

GENERALLY/ PREPARATION

210 SUITABILITY OF SUBSTRATES

- General:
  - Suitable for specified levels and flatness/regularity of finished surfaces. Consider permissible minimum and maximum thicknesses of screeds.
  - Sound and free from significant cracks and gaps.
- Concrete strength: In accordance with BS 8204-1, Table 2.
- Cleanliness: Remove plaster, debris and dirt.
- Moisture content: To suit screed type. New concrete slabs to receive fully or partially bonded construction must be dried out by exposure to the air for minimum six weeks.

215 SURFACE HARDNESS OF SUBSTRATES TO RECEIVE POLYMER MODIFIED WEARING SCREENS

- General: Substrates must restrain stresses that occur during setting and hardening of wearing screeds.
- Test for surface hardness: To BS EN 12504-2 using a rebound hammer with compliance values selected from the following:

<table>
<thead>
<tr>
<th>Screed thickness</th>
<th>Rebound hammer value</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 mm or less</td>
<td>Greater than 25</td>
</tr>
<tr>
<td>Greater than 15 mm</td>
<td>Greater than 30</td>
</tr>
</tbody>
</table>

- Report: Submit details of areas where substrates surface hardness does not comply with these values.

220 PROPRIETARY LEVELLING/ WEARING SCREENS

- General: Materials, mix proportions, mixing methods, minimum/maximum thicknesses and workmanship must be in accordance with recommendations of screed manufacturer.
- Standard: To BS 8204-3.
250 CONDUITS UNDER FLOATING SCREEDS
- Haunching: Before laying insulation for floating screeds, haunch up in 1:4 cement:sand on both sides of conduits.

251 CONDUITS CAST INTO OR UNDER SCREEDS
- Reinforcement: Overlay with reinforcement selected from:
  - 500 mm wide strip of steel fabric to BS 4483, reference D49, or
  - Welded mesh manufactured in rolls from mild steel wire minimum 1.5 mm diameter to BS 1052, mesh size 50 x 50 mm.
- Placing reinforcement: Mid depth between top of conduit and the screed surface.
  - Width of reinforcement (minimum): 300 mm.
- Screed cover over conduit (minimum): 25 mm.

255 PIPE DUCTS/ TRUNKING
- Preformed access ducts: Before laying screed, fix securely to substrates and level accurately in relation to finished floor surface.

290 FLOATING CONSTRUCTION
- Insulation:
  - Type: 75 mm Kingspan Kooltherm K3 insulation boards.
  - Installation: Lay with tight butt joints. Continue up at perimeter abutments for full depth of screed.
- Separating layer:
  - Type: Sisalkraft 420 waterproof building paper to BS 1521, Grade A1F.
  - Installation: Lay over insulation and turn up at perimeter abutments. Lap 100 mm at joints.

BATCHING/ MIXING

302 CEMENTS
- Cement types: In accordance with BS 8204-1, clause 5.1.3.

305 AGGREGATES
- Sand: To BS EN 13139.
  - Grading limits: In accordance with BS 8204-1, Table B.1.
- Coarse aggregates for fine concrete levelling screeds:
  - Standard: To BS EN 12620.
- Lightweight aggregates: In accordance with BS 8204-1, Annex A.

307 ADMIXTURES
- Standard: In accordance with BS 8204-1, Table 1.
- Calcium chloride: Do not use in admixtures.

310 BATCHING WITH DENSE AGGREGATES
- Mix proportions: Specified by weight.
- Batching: Select from:
  - Batch by weight.
  - Batch by volume: Permitted on the basis of previously established weight:volume relationships of the particular materials. Use accurate gauge boxes. Allow for bulking of damp sand.
311 BATCHING WITH LIGHTWEIGHT AGGREGATES
- Standard: In accordance with BS 8204-1, Annex A.
- Mix proportions: Specified by volume.
- Batching: Use accurate gauge boxes.

330 MIXING
- Water content: Minimum necessary to achieve full compaction, low enough to prevent excessive water being brought to surface during compaction.
- Mixing: Mix materials thoroughly to uniform consistency. Mixes other than no-fines must be mixed in a suitable forced action mechanical mixer. Do not use a free fall drum type mixer.
- Consistency: Use while sufficiently plastic for full compaction.
- Ready-mixed retarded screed mortar: Use within working time and site temperatures recommended by manufacturer. Do not retemper.

335 IN SITU CRUSHING RESISTANCE (ISCR)
- Standards and category: In accordance with BS 8204-1, table 4.
  - Testing of bonded and unbonded screeds: To Annex D.
  - Testing of floating levelling screeds: To Annex E.

340 ADVERSE WEATHER
- Screeds surface temperature: Maintain above 5°C for a minimum of four days after laying.
- Hot weather: Prevent premature setting or drying out.

345 LEVEL OF SCREED SURFACES
- Permissible deviation: (allowing for thickness of coverings) ±5 mm from datum.

355 FLATNESS/ SURFACE REGULARITY OF FLOOR SCREEDS
- Standard: In accordance with BS 8204-1, Table 5.
- Test: In accordance with BS 8204-1, Annex C.
- Sudden irregularities: Not permitted.

375 COMPACTION OF SCREEDS
- General: Compact thoroughly over entire area.
- Screeds over 50 mm thick: Lay in two layers of approximately equal thickness. Roughen surface of compacted lower layer then immediately lay upper layer.

392 GENERAL REINFORCEMENT
- Steel fabric: To BS 4483.
  - Type: A142.
- Installation: In accordance with BS 8204-1.

405 JOINTS IN LEVELLING SCREEDS GENERALLY
- Laying screeds: Lay continuously using 'wet screeds' between strips or bays. Minimize defined joints.
- Daywork joints: Form with vertical edge.
FINISHING/CURING

510 FINISHING GENERALLY
• Timing: Carry out all finishing operations at optimum times in relation to setting and hardening of screed material.
• Prohibited treatments to screed surfaces:
  - Wetting to assist surface working.
  - Sprinkling cement.

540 TROWELLED FINISH TO LEVELLING SCREEDS
• Floating: To an even texture with no ridges or steps.
• Trowelling: To a uniform, smooth but not polished surface, free from trowel marks and other blemishes, and suitable to receive specified flooring material.

650 CURING
• General: Prevent premature drying. Immediately after laying, protect surface from wind, draughts and strong sunlight. As soon as screed has set sufficiently, closely cover with polyethylene sheeting.
• Curing period (minimum): Keep polyethylene sheeting in position for: seven days.
• Drying after curing: Allow screeds to dry gradually. Do not subject screeds to artificial drying conditions that will cause cracking or other shrinkage related problems.
M13 Calcium sulfate based levelling screeds

To be read with Preliminaries/ General conditions.

TYPES OF LEVELLING SCREED

GENERALLY/ PREPARATION

220 SUITABILITY OF SUBSTRATES
• General:
  - Within tolerances for level and surface regularity.
  - Moisture content: To suit type of screed.
  - Sound, clean and even textured.
• Concrete strength: In accordance with BS 8204-1, table 2.
• Penetrations/ Outlets: Completed.
• Movement joints: Correctly installed.

230 CONDUITS UNDER FLOATING SCREEDS
• Requirement: Haunch up on both sides of conduits in 1:4 cement:sand mortar.
• Timing: Before laying insulation.

235 PIPE DUCTS/ TRUNKING
• Requirement: Fix securely to substrate and level accurately in relation to finished floor surface.
• Timing: Before laying screed.

BATCHING AND MIXING

303 AGGREGATES
• Sand: To BS EN 13139.
  - Grading limits: In accordance with BS 8204-1, table B1.

305 BATCHING AGGREGATES
• Mix proportions: Specified by weight.
• Batching: Select from:
  - Batch by weight.
  - Batch by volume: Permitted on the basis of previously established weight:volume relationships of the particular materials.
  - Gauge boxes: Accurate. Allow for bulking of damp sand.

315 MIXING SELF SMOOTHING SCREEDS
• Dry preblended materials: Batch using completely full bags only.
• Materials: Mix thoroughly to uniform consistence.
• Water content: Sufficient to achieve correct flow rate for screed.
• Flow rate test of mix batches:
  - Test method: Flow ring test.
  - Timing: Before pumping screed and at strategic intervals during screeding.
  - Criteria: Screed manufacturer's recommended values.
  - Results and frequency of testing: Record.
LAYING

320 ADVERSE WEATHER
- Screeds surface temperature: Maintain above 5°C for a minimum of four days after laying.
- Hot weather: Prevent premature setting or drying out.

325 LEVEL OF SCREED SURFACES
- Permissible deviation (allowing for thickness of coverings): ± 5 mm from datum.

330 IN SITU CRUSHING RESISTANCE (ISCR)
- Standard: In accordance with BS 8204-1, table 4.
  - Testing of bonded and unbonded levelling screeds: To Annex D.
  - Testing of floating levelling screeds: To Annex E.

335 FLATNESS/ SURFACE REGULARITY OF SCREEDS
- Standard: In accordance with BS 8204-1, table 5.
  - Testing: To Annex C.
- Sudden irregularities: Not permitted.

355 LAYING SELF SMOOTHING SCREEDS
- Self smoothing screeds: Lay continuously. Agitate thoroughly.
- Joints generally:
  - Defined joints: Minimize.
  - Daywork joints: Form with vertical edge. Prime before continuing screeding.

FINISHING/ CURING

420 SANDED SELF SMOOTHING FINISH
- Finish: Sand to remove laitance.
- Surface on completion: Uniform and smooth, suitable to receive specified flooring material.

440 CURING SELF SMOOTHING SCREEDS
- General: Prevent premature drying. Immediately after laying, protect surface from wind, draughts and strong sunlight.
- Drying after curing: Allow screeds to dry gradually. Do not subject to artificial drying conditions that will cause cracking or other shrinkage related problems.
M20 Plastered/ Rendered/ Roughcast coatings

To be read with Preliminaries/ General conditions.

TYPES OF COATING

210 LIGHTWEIGHT GYPSUM PLASTER TO INTERNAL SURFACES OF EXTERNAL WALLS AND INTERNAL BLOCKWORK PARTITIONS

- Substrate: Concrete blockwork as section F10.
- Preparation: Bonding agent recommended by plaster manufacturer.
- Undercoats: To BS EN 13279-1.
  - Product reference: Thistle Hardwall.
  - Thickness (excluding dubbing out and keys): One coat 11 mm overall.
- Final coat: Finish plaster to BS EN 13279-1.
  - Product reference: Thistle Multi Finish.
  - Thickness: 2-3 mm.
  - Finish: Smooth.
- Accessories: Beads and stops.

280 GYPSUM PLASTER SKIM COAT ON PLASTERBOARD

- Plasterboard: 1No layer of 15 mm British Gypsum Duraline Wallboard - to new partitions.
- Preparation: Bonding agent recommended by plaster manufacturer.
- Plaster: Board finish/ finish plaster to BS EN 13279-1.
- Product reference: Thistle Multi Finish.
  - Thickness: 2-3 mm.
  - Finish: Smooth.
- Accessories: Beads and stops.

GENERAL

PREPARING SUBSTRATES

510 SUITABILITY OF SUBSTRATES

- Soundness: Free from loose areas and significant cracks and gaps.
- Cutting, chasing, making good, fixing of conduits and services outlets and the like: Completed.
- Tolerances: Permitting specified flatness/ regularity of finished coatings.
- Cleanliness: Free from dirt, dust, efflorescence and mould, and other contaminants incompatible with coatings.

527 RAKING OUT FOR KEY

- Joints in existing masonry: Rake out to a depth of 13 mm (minimum).
- Dust and debris: Remove from joints.

531 ROUGHENING FOR KEY

- Substrates: Roughen thoroughly and evenly.
- Depth of surface removal: Minimum necessary to provide an effective key.
541  BONDING AGENT APPLICATION
   • General: Apply evenly to substrate to achieve effective bond of plaster/ render coat. Protect adjacent joinery and other surfaces.

551  REMOVAL AND RENEWAL OF EXISTING PLASTER/ RENDER
   • Location and extent: Agree, at least on a provisional basis, before work commences. Minimize extent of removal and renewal.

566  REMOVING DEFECTIVE EXISTING PLASTER
   • Plaster for removal: Detached, soft, friable, badly cracked, affected by efflorescence or otherwise damaged.
     - Hollow, detached areas: Obtain instructions.
   • Stained plaster: Submit proposals.
   • Removing defective plaster. Cut back to a square, sound edge.
   • Faults in substrate (structural deficiencies, damp, etc.): Submit proposals.
   • Cracks:
     - Fine hairline cracking/ crazing: Leave.
     - Other cracks: Obtain instructions.
   • Dust and loose material: Remove from exposed substrates and edges.

568  EXISTING DAMP AFFECTED PLASTER/ RENDER
   • Plaster affected by rising damp: Remove to a height of 300 mm above highest point reached by damp or 1 m above dpc, whichever is higher.
   • Perished and salt contaminated masonry:
     - Mortar joints: Rake out.
     - Masonry units: Submit proposals.
   • Faults in substrate (structural deficiencies, additional sources of damp, etc.): Submit proposals.
   • Drying out substrates: Establish drying conditions. Leave walls to dry for as long as possible before plastering.
   • Dust and loose material: Remove from exposed substrates and edges.

BACKINGS/ BEADS/ JOINTS

600  ADDITIONAL FRAMING SUPPORTS FOR BACKINGS
   • Framing: Accurately position and securely fix to give full support to fixtures, fittings and service outlets.
   • Support board edges and perimeters: As recommended by board manufacturer to suit type and performance of board.

607  PROPRIETARY GYPSUM PLASTERBOARD BACKINGS
   • Manufacturer: British Gypsum. East Leake, Loughborough, Leicestershire, LE12 6HX. Tel: 0870 545 6123. Fax: 0870 545 6356. Web: www.british-gypsum.com Email: bgtechnical.enquiries@bpb.com.
     - Product reference: Generally 15 mm British Gypsum Duraline Wallboard. 15 mm Fireline where specified for encasements.
   • Exposed surface and edge profiles: Suitable to receive specified plaster finish.
610 FIXING PLASTERBOARD BACKINGS TO TIMBER INSULATED PLASTERBOARDS

- Fixings, accessories and installation methods: As recommended by board manufacturer.
- Fixing: At the following centres (maximum):
  - Nails: 150 mm.
  - Screws to partitions/ walls: 300 mm. Reduce to 200 mm at external angles.
  - Screws to ceilings: 230 mm.
- Position of nails/ screws from edges of boards (minimum):
  - Bound edges: 10 mm.
  - Cut/ unbound edges: 13 mm.
- Position of nails/ screws from edges of supports (minimum): 6 mm.
- Nail/ screw heads: Set below surface. Do not break paper or gypsum core.

612 JOINTS IN PLASTERBOARD BACKINGS

- Ceilings:
  - Bound edges: At right angles to supports and with ends staggered in adjacent rows.
- Partitions/ walls:
  - Vertical joints: Centre on studs. Stagger joints on opposite sides of studs.
  - Horizontal joints:
    - Two layer boarding: Stagger joints between layers by at least 600 mm. Support edges of outer layer.
- Joint widths (maximum): 3 mm.

630 BEADS/ STOPS FOR INTERNAL USE GENERALLY

- Material: Galvanized steel to BS EN 13658-1.

640 BEADS/ STOPS GENERALLY

- Location: External angles and stop ends except where specified otherwise.
- Corners: Neat mitres at return angles.
- Fixing: Secure, using longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with substrate.
- Beads/ stops for external render: Fix mechanically.
- Finishing: After coatings have been applied, remove surplus material while still wet, from surfaces of beads/ stops exposed to view.

646 CRACK CONTROL AT JUNCTIONS BETWEEN DISSIMILAR SOLID SUBSTRATES

- Locations: Where defined movement joints are not required. Where dissimilar solid substrate materials are in same plane and rigidly bonded or tied together.
- Crack control materials:
  - Isolating layer: Building paper to BS 1521.
  - Metal lathing: Internally: Galvanized steel plain expanded metal with spacers.
- Installation: Fix metal lathing over isolating layer. Stagger fixings along both edges of lathing.
- Width of installation over single junctions:
  - Isolating layer: 150 mm.
  - Lathing: 300 mm.
- Width of installation across face of dissimilar substrate material (column, beam, etc. with face width not greater than 450 mm):
  - Isolating layer: 25 mm (minimum) beyond junctions with adjacent substrate.
  - Lathing: 100 mm (minimum) beyond edges of isolating layer.

659 PLASTERBOARD JOINTS

- Joints and angles (except where coincident with metal beads). Reinforce with continuous lengths of jointing tape.
673 PLASTERING OVER CONDUITS/ SERVICE CHASES

- General: Prevent cracking over conduits and other services.
- Services chased into substrate: Isolate from coating by covering with galvanized metal lathing, fixed at staggered centres along both edges.

INTERNAL PLASTERING

710 APPLICATION GENERALLY

- Application of coatings: Firmly and in one continuous operation between angles and joints. Achieve good adhesion.
- Appearance of finished surfaces: Even and consistent. Free from rippling, hollows, ridges, cracks and crazing.
  - Accuracy: Finish to a true plane, to correct line and level, with angles and corners to a right angle unless specified otherwise, and with walls and reveals plumb and square.
- Drying out: Prevent excessively rapid or localized drying out.

715 FLATNESS/ SURFACE REGULARITY

- Sudden irregularities: Not permitted.
- Deviation of plaster surface: Measure from underside of a straight edge placed anywhere on surface.
  - Permissible deviation (maximum) for plaster not less than 13 mm thick: 3 mm in any consecutive length of 1800 mm.

718 JUNCTION OF NEW PLASTERWORK WITH EXISTING

- New plasterwork: Finish flush with original face of existing plasterwork to form a seamless junction.

720 DUBBING OUT

- General: Correct substrate inaccuracies.
- New smooth dense concrete and similar surfaces: Dubbing out prohibited unless total plaster thickness is within range recommended by plaster manufacturer.
- Thickness of any one coat (maximum): 10 mm.
- Mix: As undercoat.
- Application: Achieve firm bond. Allow each coat to set sufficiently before the next is applied. Cross scratch surface of each coat.

725 UNDERCOATS GENERALLY

- General: Rule to an even surface. Cross scratch to provide a key for the next coat.
- Undercoats on metal lathing: Work well into interstices to obtain maximum key.
- Undercoats gauged with Portland cement: Do not apply next coat until drying shrinkage is substantially complete.

742 THIN COAT PLASTER

- Preparation for plasters less than 2 mm thick: Fill holes, scratches and voids with finishing plaster.

747 PROJECTION PLASTER

- Application: Evenly and in one continuous operation between angles and joints.
- Finish: A level open textured surface before finishing manually.

777 SMOOTH FINISH

- Appearance: A tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks. Avoid water brush, excessive trowelling and over polishing.
WOOD FLOAT FINISH

- Appearance: An even overall texture. Finish with a dry wood float as soon as wet sheen has disappeared.
M40 Stone/ concrete/ quarry/ ceramic tiling/ mosaic

To be read with Preliminaries/ General conditions.

TYPES OF TILING/ MOSAIC

110 TILING TO TOILETS & WORKTOP SPLASHBACKS

• Tiles: Ceramic tiles to BS 6431.
  - Manufacturer/ Supplier: Johnson Tiles. Harewood Street, Tunstall, Stoke-on-Trent, Staffordshire, ST6 5JZ. Tel: 01782 575575. Fax: 01782 577377. Web: www.johnson-tiles.com. Email: sales@johnson-tiles.com.
  - Product reference: Prismatics range.
  - Colour: To be confirmed.
  - Finish: Glazed.
  - Size: 150 x 150 mm.
  - Thickness: 6.5 mm.
  - Slip potential:
    Slip resistance value (SRV) (minimum)/ Pendulum test value (PTV) (minimum) to BS EN 13036-4 or BS EN 14231 (natural stone only): Not applicable.
    Surface roughness (Rz) (minimum) to BS 1134: Not applicable.
    SlipSTD class: Not applicable.
  - Recycled content: Not applicable.
• Background/ Base: Cement:sand rendering M20/140.
  - Preparation: Apply primer to substrate.
  - Manufacturer: Building Adhesives Ltd. Longton Road, Trentham, Stoke-on-Trent, Staffordshire, ST4 8JB. Tel: 01782 591100. Fax: 01782 591101. Web: www.building-adhesives.com. Email: info@building-adhesives.com.
  - Product reference: BAL Prime APD.
• Intermediate substrate: Not required.
  Bedding: Adhesive bed - notched trowel method, as clause 650.
  - Reinforcement: Not applicable.
  - Adhesive to BS EN 12004. Manufacturer: Building Adhesives Ltd. Longton Road, Trentham, Stoke-on-Trent, Staffordshire, ST4 8JB. Tel: 01782 591100. Fax: 01782 591101. Web: www.building-adhesives.com. Email: info@building-adhesives.com.
• Joint width: As spacer lugs.
• Grout: Manufacturer: Building Adhesives Ltd. Longton Road, Trentham, Stoke-on-Trent, Staffordshire, ST4 8JB. Tel: 01782 591100. Fax: 01782 591101. Web: www.building-adhesives.com. Email: info@building-adhesives.com.
  - Product reference: BAL Microflex.
  - Type/ classification: Not applicable.
  - Admixture: None.
• Movement joints: To tiling manufacturers recommendations.
• Accessories: Quadrant tile trims to exposed external corners.
GENERAL

210 SUITABILITY OF BACKGROUNDS/ BASES
- Background/ base tolerances: To permit specified flatness/ regularity of finished surfaces given the permissible minimum and maximum thickness of bedding.
- New background drying times (minimum):
  - Concrete walls: 6 weeks.
  - Brick/ block walls: 6 weeks.
  - Rendering: 2 weeks.
  - Gypsum plaster: 4 weeks.
- New base drying times (minimum):
  - Concrete slabs: 6 weeks.
  - Cement:sand screeds: 3 weeks.

PREPARATION

310 EXISTING BACKGROUNDS/BASES GENERALLY
- Efflorescence, laitance, dirt and other loose material: Remove.
- Deposits of oil, grease and other materials incompatible with the bedding: Remove.
- Tile, paint and other nonporous surfaces: Clean.
- Wet backgrounds: Dry before tiling.

330 EXISTING PLASTER
- Defective areas: Remove plaster that is loose, soft, friable, badly cracked or affected by efflorescence. Cut back to straight horizontal and vertical edges.
- Making good: Use plaster or nonshrinking filler.

355 OLD ADHESIVE RESIDUES ON CONCRETE/SCREED BASES
- Soft or unsound adhesive residues: Remove without damaging base.

360 EXISTING PAINT
- Paint with unsatisfactory adhesion: Remove so as not to impair bedding adhesion.

370 NEW IN SITU CONCRETE
- Backgrounds/ bases to be tiled: Remove mould oil, surface retarders and other materials incompatible with bedding.

380 NEW PLASTER
- Plaster: Dry, solidly bedded, free from dust and friable matter.
- Plaster primer: Apply if recommended by adhesive manufacturer.

390 PLASTERBOARD BACKGROUNDS
- Boards: Dry, securely fixed and rigid with no protruding fixings and face to receive decorative finish exposed.
FIXING  

510 FIXING GENERALLY  
- Colour/ shade: Unintended variations within tiles for use in each area/ room are not permitted.  
  - Variegated tiles: Mix thoroughly.  
- Adhesive: Compatible with background/ base. Prime if recommended by adhesive manufacturer.  
- Use of admixtures with cementitious adhesives: Only admixtures approved by adhesive manufacturer.  
- Cut tiles: Neat and accurate.  
- Fixing: Provide adhesion over entire background/ base and tile backs.  
- Final appearance: Before bedding material sets, make adjustments necessary to give true, regular appearance to tiles and joints when viewed under final lighting conditions.  
- Surplus bedding material: Clean from joints and face of tiles without disturbing tiles.  

550 FLATNESS/ REGULARITY OF TILING/ MOSAICS  
- Sudden irregularities: Not permitted.  
- Deviation of surface: Measure from underside of a 2 m straightedge with 3 mm thick feet placed anywhere on surface. The straightedge should not be obstructed by the tiles and no gap should be greater than 6 mm, i.e. a tolerance of ± 3 mm.  

560 LEVEL OF TILING ACROSS JOINTS  
- Deviation (maximum) between tile surfaces either side of any type of joint:  
  - 1 mm for joints less than 6 mm wide.  
  - 2 mm for joints 6 mm or greater in width.  

570 MORTAR BEDDING  
- Bedding mix:  
  - Cement: Portland to BS EN 197-1, type CEM I/42.5.  
  - Sand for walls: To BS EN 13139.  
    - Grading designation: 0/2 (CP or MP) category 2 fines.  
  - Sand for floors: To BS EN 13139.  
    - Grading designation: 0/4 (MP) category 1 fines and between 20%-66% passing a 0.5 sieve.  
- Batching: Select from:  
  - Batch by weight.  
  - Batch by volume: Permitted on the basis of previously established weight:volume relationships of the particular materials. Use accurate gauge boxes. Allow for bulking of damp sand.  
- Mixing: Mix materials thoroughly to uniform consistence. Use a suitable forced action mechanical mixer. Do not use a free fall type mixer.  
- Application: At normal temperatures use within two hours. Do not use after initial set. Do not retemper.  

578 CRACK CONTROL REINFORCEMENT  
- Type to BS 4483: D49.  
- Installation: Place centrally in depth of bed. Lap not less than 100 mm and securely tie together with steel wire.  
- Corners: Avoid a four layer build at corners.  

650 ADHESIVE BED - NOTCHED TROWEL METHOD (WALLS)  
- Application: By 3 mm floated coat of adhesive to dry background in areas of approximately 1 m². Comb surface.  
- Tiling: Press tiles firmly onto float coat.
CEMENT:SAND MORTAR BEDDING (WALLS)

- Preparation: Dampen background.
- Application: By floated coat to background: 1:3-4 cement:sand mortar bedding.
  - Thickness (maximum): 10 mm.
  - Finish: Equivalent to wood float. Before tiling allow to stiffen slightly.
- Tiling: Without delay, apply 2 mm thick coat of 1:1 cement:fine sand mortar to backs of tiles, filling keys. Press tiles firmly onto float coat. Tap firmly into position

MOVEMENT JOINTS/ GROUTING/ COMPLETION

SEALANT MOVEMENT JOINTS IN CERAMIC TILING TO WALLS

- Joints: Extend through tiles and bedding to base/ background. Centre over joints in base/ background.
  - Width: As recommended by tiling manufacturer.
- Sealant: Manufacturer: Building Adhesives Ltd. Longton Road, Trentham, Stoke-on-Trent, Staffordshire, ST4 8JB. Tel: 01782 591100. Fax: 01782 591101. Web: www.building-adhesives.com Email: info@building-adhesives.com
  - Product reference: BAL Silicone.
  - Colour: To match background / tiling grout.
- Preparation and application: As section Z22.

GROUTING

- Sequence: Grout when bed/adhesive has set sufficient to prevent disturbance of tiles.
- Joints: 6 mm deep (or depth of tile if less). Free from dust and debris.
- Grouting: Fill joints completely, tool to profile, clean off surface. Leave free from blemishes.
  - Profile: Slightly concave.
- Polishing: When grout is hard, polish tiling with a dry cloth.

COLOURED GROUT

- Staining of tiles: Not permitted
- Evaluating risk of staining: Apply grout to a few tiles in a small trial area. If discoloration occurs apply a protective sealer to tiles and repeat trial.
M50 Rubber/ plastics/ cork/ lino/ carpet tiling/ sheeting

To be read with Preliminaries/ General conditions.

TYPES OF COVERING

160 PVC SHEET FLOORING

- Location: See drawing for locations.
- Base: Existing & proposed screeds.
  - Preparation: As clauses 410, 420, 430, 440, 460, 470, 480, 520.
- Fabricated underlay: Not required.
- Flooring roll: PVC to BS EN 13553.
  - Manufacturer: Polyflor Ltd. PO Box 3, Radcliffe New Road, Whitefield, Manchester, M45 7NR. Tel: 0161 767 1122. Fax: 0161 767 1128. Web: www.polyflor.com Email: info@polyflor.com .
  - Product reference: Pearlazzo.
  - BS EN 685 class: 34.
  - Recycled content: None permitted.
  - Width: 2000 mm.
  - Thickness: 2.0 mm.
  - Colour/ pattern: To be confirmed.
- Adhesive (and primer if recommended by manufacturer): F Ball & Co Ltd. Churnetside Business Park, Station Road, Cheddleton, Leek, Staffordshire, ST13 7RS. Tel: 01538 361633. Fax: 01538 361622. Web: www.f-ball.co.uk Email: mail@f-ball.co.uk
  - Product reference: Styccobond F45.
- Seam welding: Hot welding with complimentary coloured rod.
- Accessories: Edging trim for thresholds as clause 740. PVC coved formers & cappings as clause 770 & 775.
- Finishing: None.
- Other requirements: One coat applied vapour barrier under vinyl areas to new and existing floors. Manufacturer: Altro. Works Road, Letchworth Garden City, Hertfordshire, SG6 1NW. Tel: 0870 606 5432. Fax: 0870 511 3388. Web: www.altro.com Email: enquiries@altro.com Product reference: Altroproof Solo Epoxy Moisture vapour supplement.
165 PVC SHEET FLOORING IN WET AREAS

- Location: See drawing for locations.
- Base: Existing & proposed screeds.
  - Preparation: As clauses 410, 420, 430, 440, 460, 470, 480, 520.
- Fabricated underlay: Not required.
- Flooring roll: PVC to BS EN 13553.
  - Manufacturer: Polyflor Ltd. PO Box 3, Radcliffe New Road, Whitefield, Manchester, M45 7NR. Tel: 0161 767 1122. Fax: 0161 767 1128. Web: www.polyflor.com Email: info@polyflor.com.
  - Product reference: Polysafe Corona.
  - BS EN 685 class: 34.
  - Recycled content: None permitted.
  - Width: 2000 mm.
  - Thickness: 2.0 mm.
  - Colour/pattern: To be confirmed.
- Adhesive (and primer if recommended by manufacturer): F Ball & Co Ltd. Churnetside Business Park, Station Road, Cheddleton, Leek, Staffordshire, ST13 7RS. Tel: 01538 361633. Fax: 01538 361622. Web: www.f-ball.co.uk Email: mail@f-ball.co.uk
  - Product reference: Styccobond F45.
- Seam welding: Hot welding with complimentary coloured rod.
- Accessories: Edging trim for thresholds as clause 740. PVC coved formers & cappings as clause 770 & 775.
- Finishing: None.
- Other requirements: One coat applied vapour barrier under vinyl areas to new and existing floors. Manufacturer: Altro. Works Road, Letchworth Garden City, Hertfordshire, SG6 1NW. Tel: 0870 606 5432. Fax: 0870 511 3388. Web: www.altro.com Email: enquiries@alto.com Product reference: Altroproof Solo Epoxy Moisture vapour supplement.
170 CARPETING
- Location: See drawing for locations.
- Base: Existing & proposed.
  - Preparation: As clauses 410, 420, 430, 440, 460, 470, 480, 520.
- Fabricated underlay: Not Required.
- Carpet underlay to BS 5808 and BS EN 14499:
  - Manufacturer: N/A.
    - Product reference: N/A.
  - Type: N/A.
  - Class: N/A.
  - Recycled content: N/A.
- Underlay adhesive (and primer if recommended by manufacturer): N/A.
- Carpet:
  - Manufacturer: Desso Ltd. Hitching Court, Abingdon Business Park, Abingdon, Oxfordshire, OX14 1RB. Tel: 01235 554848. Fax: 01235 553583. Web: www.desso.co.uk Email: service-uk@desso.com.
    - Product reference: Torso A147-7322.
  - Type: Tufted.
  - BS EN 1307 classification:
    - Category: Type 2.
    - Level of use class: 33.
    - Luxury rating class: LC3.
  - Recycled content: Contractor's choice.
  - Width: TBC.
  - Colour/ pattern: TBC.
- Carpet adhesive (and primer if recommended by manufacturer): As per manufacturer details.
- Accessories: Edging strip at thresholds as clause 740.
- Other requirements: None.

GENERAL REQUIREMENTS

210 WORKMANSHIP GENERALLY
- Base condition after preparation: Rigid, dry, sound, smooth and free from grease, dirt and other contaminants.
- Finished coverings: Accurately fitted, tightly jointed, securely bonded, smooth and free from air bubbles, rippling, adhesive marks and stains.

270 EXTRA MATERIAL
- Provision of extra material: At completion, hand to Employer extra material of each type of covering to extent of one box of each material and colour.

330 COMMENCEMENT
- Required condition of works prior to laying materials:
  - Building is weathertight and well dried out.
  - Wet trades have finished work.
  - Paintwork is finished and dry.
  - Conflicting overhead work is complete.
  - Floor service outlets, duct covers and other fixtures around which materials are to be cut are fixed.
- Notification: Submit not less than 48 hours before commencing laying.
340 CONDITIONING
- Prior to laying: Condition materials by unpacking and separating in spaces where they are to be laid. Maintain resilient flooring rolls in an upright position. Unroll carpet and keep flat on a supporting surface.
- Conditioning time and temperature (minimum): As recommended by manufacturer with time extended by a factor of two for materials stored or transported at a temperature of less than 10°C immediately prior to laying.

350 ENVIRONMENT
- Temperature and humidity: Before, during and after laying, maintain approximately at levels which will prevail after building is occupied.
- Ventilation: Before during and after laying, maintain adequate provision.

360 FLOORS WITH UNDERFLOOR HEATING
- Commencement of laying: Not before a period of 48 hours after heating has been turned off.
- Post laying start up of heating system: Slowly return heating to its operative temperature not less than 48 hours after completing laying.

PREPARING BASES

410 NEW BASES
- Suitability of bases and conditions within any area: Commencement of laying of coverings will be taken as acceptance of suitability.

420 EXISTING BASES
- Notification: Before commencing work, confirm that existing bases will, after preparation, be suitable to receive coverings.
- Suitability of bases and conditions within any area: Commencement of laying of coverings will be taken as acceptance of suitability.

430 NEW WET LAID BASES
- Base drying aids: Not used for at least four days prior to moisture content testing.
- Base moisture content test: Carry out in accordance with BS 5325, Annexe A or BS 8203, Annexe A.
  - Locations for readings: In all corners, along edges, and at various points over area being tested.
- Commencement of laying coverings: Not until all readings show 75% relative humidity or less.

440 SUBSTRATES TO RECEIVE THIN COVERINGS
- Trowelled finishes: Uniform, smooth surface free from trowel marks and other blemishes. Abrade suitably to receive specified floor covering material.

460 SMOOTHING/LEVELLING UNDERLAMENT COMPOUND
- Type: Latex cement.
- Manufacturer: ARDEX UK Ltd. Homefield Road, Haverhill, Suffolk, CB9 8QP. Tel: 01440 714939. Fax: 01440 716667. Web: www.ardexcpdacademy.com Email: cpd@ardex.co.uk.
  - Product reference: ARDITEX NA.

470 BASES FROM WHICH EXISTING FLOOR COVERINGS HAVE BEEN REMOVED
- Substrate: Clear of covering and as much adhesive as possible. Skim with smoothing underlament compound to give smooth, even surface.
EXISTING FLOOR COVERINGS TO BE OVERLAID
• Substrate: Make good by local resticking and patching or filling with smoothing underlayment compound to give smooth, even surface.

TIMBER BOARDING/ STRIP FLOORING
• Substrate: Boards/ strips securely fixed and acceptably level with no protruding fasteners. Plane, sand or apply smoothing underlayment compound to give a smooth, even surface.

HARDBOARD UNDERLAY
• Standard: To BS EN 622-2.
  - Type: HB.
  - Thickness: 6.0 mm.
  - Sheet size: 2400 x 1200 mm.
• Substrate: Existing floor boards securely fixed and level with no gross irregularities or protruding fasteners.
• Conditioning sheets: Prior to fixing.
  - Requirement: To restrict in situ expansion and prevent consequential disfigurement to floor coverings.
• Laying sheets: Smooth face uppermost.
  - Cross joints: Staggered with none coincident with joints in base.
  - Joints: Butted.
• Fasteners: 25 mm ringed shank or twisted shank nails or divergent staples.
  - Spacing: Commence at centre of one side of each sheet, at 150 mm grid centres over area of each sheet and at 100 mm centres along perimeter, set in 12 mm from edge.
  - Placement: Not to project above sheet surface or through underside of base. Not deformed.
• Underlay conditioned by wetting: Do not lay coverings until underlay is dry.

PLYWOOD UNDERLAY
• Standard: An approved national standard.
• Bonding quality: To BS EN 314-2 class 1.
• Appearance: To BS EN 635 class I.
• Finish: Sanded.
• Thickness: 6 mm.
• Sheet size: 2400 x 1200 mm.
• Substrate: Existing floor boards securely fixed and acceptably level with no gross irregularities or protruding fasteners.
• Laying sheets: Stagger cross joints such that no joint within base and underlay is coincident and with a 0.5-1 mm gap between sheets.
• Fasteners: 25 mm ringed shank or twisted shank nails or divergent staples.
  - Spacing: Commencing at centre of one side of each sheet, at 150 mm grid centres over area of each sheet and at 100 mm centres along perimeter, set in 12 mm from edge.
  - Placement: Driven with heads set flush with surface, and not projecting through underside of base. Not deformed.

LAYING COVERINGS

SETTING OUT TILES
• Method: Set out from centre of area/ room, so that wherever possible:
  - Tiles along opposite edges are of equal size.
  - Edge tiles are more than 50% of full tile width.

COLOUR CONSISTENCY
• Finished work in any one area/ room: Free from banding or patchiness.
640 ADHESIVE FIXING GENERALLY
- Adhesive type: As specified, as recommended by covering/underlay, manufacturer or as approved.
- Primer: Type and usage as recommended by adhesive manufacturer.
- Application: As necessary to achieve good bond.
- Finished surface: Free from trowel ridges, high spots caused by particles on the substrate, and other irregularities.

650 SEAMS
- Patterns: Matched.
- Joints: Tight without gaps.

670 BORDERS/AND FEATURE STRIPS IN SHEET MATERIAL
- Curl: Not acceptable.
- Corners: Mitre joints.

680 SEAM WELDING COVERINGS
- Commencement: At least 24 hours after laying, or after adhesive has set.
- Joints: Neat, smooth, strongly bonded, flush with finished surface.

720 DOORWAYS
- Joint location: On centre line of door leaf.

740 EDGINGS AND COVER STRIPS
- Manufacturer: Gradus. Chapel Mill, Park Green, Macclesfield, Cheshire, SK11 7LZ. Tel: 01625 428922. Fax: 01625 433949. Web: www.gradusworld.com Email: sales@gradusworld.com.
  - Material/finish: Aluminium bases with PVC-u tops - colours to be confirmed.
  - Fixing: Secure with edge of covering gripped. Use matching fasteners where exposed to view.

770 SKIRTINGS
- Types: PVC.
- Manufacturer: Gradus. Chapel Mill, Park Green, Macclesfield, Cheshire, SK11 7LZ. Tel: 01625 428922. Fax: 01625 433949. Web: www.gradusworld.com Email: sales@gradusworld.com.
  - Product reference: CF32P.
  - Fixing: Secure with top edge straight and parallel with floor.
  - Corners: Mitre joints.

775 CAPPINGS
- Types: PVC.
- Manufacturer: Gradus. Chapel Mill, Park Green, Macclesfield, Cheshire, SK11 7LZ. Tel: 01625 428922. Fax: 01625 433949. Web: www.gradusworld.com Email: sales@gradusworld.com.
  - Product reference: HCS48 generally; TC47 to areas of ceramic wall tiling.
  - Fixing: Secure with top edge straight and parallel with floor.
  - Corners: Mitre joints.
COMPLETION

820 FINISHING PVC SHEET FLOORING
- Cleaning operations:
  - Wash floor with water containing neutral (pH 6-9) detergent. If necessary, lightly scrub heavily soiled areas.
  - Rinse with clean water, removing surplus to prevent damage to adhesive. Allow to dry.
- Emulsion polish: Two coats of a type recommended by covering manufacturer.

830 FINISHING RUBBER FLOORING
- Cleaning operations:
  - Wash floor with a cleaner recommended by covering manufacturer.
  - Wet vacuum or mop up residue.
  - Rinse with clean water. Wet vacuum or mop up and allow to dry.
- Final treatment: Follow recommendations of covering manufacture and spray buff with wetting agent or dry burnish.

880 WASTE
- Spare covering material: Retain suitable material for patching. On completion submit pieces for selection. Hand over selected pieces to Employer.
M60 Painting/clear finishing

To be read with Preliminaries/General conditions.

COATING SYSTEMS

115 EMULSION PAINT TO INTERNAL PLASTERED SURFACES - SEE FINISHES

SCHEDULE FOR LOCATIONS

- Manufacturer: Johnstone’s, a brand of PPG Architectural Coatings UK Ltd. Huddersfield Road, Birstall, Batley, West Yorkshire, WF17 9XA. Tel: 01924 354000. Fax: 01924 354548. Web: www.johnstonestrade.com Email: specifiers.acuk@ppg.com.
  - Product reference: Johnstone’s Covaplus Vinyl Matt Emulsion.
- Surfaces: Internal plastered ceilings.
- Preparation: Surfaces should be clean, dry and free from loose and flaking materials. Prime bare surfaces with the appropriate Johnstone’s Primer. Rub down previously gloss painted surfaces with fine waterproof abrasive paper and rinse thoroughly. Special precautions should be taken during surface preparation of pre-1960’s paint surfaces over wood and metal as they may contain harmful lead. Do not apply in temperatures below 5°C. If more than one can of colour is to be used in the same area, intermix before use. For further advice contact SigmaKalon Technical Advisory Department.
- Initial coats: Seal absorbent surfaces with a coat of Covaplus Vinyl Matt Emulsion thinned up to 10% with clean water, applied by brush, roller or spray.
  - Number of coats: 1.
- Finishing coats: Matt vinyl.
  - Number of coats: 2 coats brush, roller or spray applied. Allow 2-4 hours between coat.

135 GLOSS PAINT TO INTERNAL EXPOSED SOFTWOOD & MDF - SEE FINISHES

SCHEDULE FOR LOCATIONS

- Manufacturer: Johnstone’s, a brand of PPG Architectural Coatings UK Ltd. Huddersfield Road, Birstall, Batley, West Yorkshire, WF17 9XA. Tel: 01924 354000. Fax: 01924 354548. Web: www.johnstonestrade.com Email: specifiers.acuk@ppg.com.
- Surfaces: Internal woodworks.
- Preparation: Surfaces should be clean, dry and free from loose and flaking materials. Prime bare surfaces with the appropriate Johnstone’s Primer. Rub down previously painted surfaces with fine waterproof abrasive paper and rinse thoroughly before applying undercoat. Special precautions should be taken during surface preparation of pre-1960’s paint surfaces over wood and metal as they may contain harmful lead. If more than one can of colour is to be used in the same area, intermix before use. For further advice contact PPG Architectural Coatings UK Limited Technical Advisory Department.
- Initial coats: Johnstone’s Professional Undercoat brush, roller or spray applied. Allow 16-24 hours between coats.
  - Number of coats: 1.
- Finishing coats: Johnstone’s Professional Gloss Finish.
  - Number of coats: 2 coats brush, roller or spray applied. Allow 16-24 hours between coats.
140  GLOSS PAINT TO EXTERNAL SOFTWOOD - SEE FINISHES SCHEDULE FOR LOCATIONS
• Manufacturer: Johnstone’s, a brand of PPG Architectural Coatings UK Ltd. Huddersfield Road, Birstall, Batley, West Yorkshire, WF17 9XA. Tel: 01924 354000. Fax: 01924 354548. Web: www.johnstonestrade.com Email: specifiers.acuk@ppg.com.
- Product reference: Johnstone’s Stormshield Flexible Gloss.
• Surfaces: External woodwork.
  - Preparation: Surfaces should be clean, dry and free from loose and flaking materials. Prime bare surfaces with the appropriate Johnstone’s Primer. Rub down previously gloss painted surfaces with fine waterproof abrasive paper and rinse thoroughly. Special precautions should be taken during surface preparation of pre-1960’s paint surfaces over wood and metal as they may contain harmful lead. Do not apply in temperatures below 5°C. If more than one can of colour is to be used in the same area, intermix before use. For further advice contact SigmaKalon Technical Advisory Department.
• Initial coats: Johnstone’s Stormshield Flexible Gloss brush, roller or spray applied. Allow 16-24 hours between coats.
  - Number of coats: 1.
• Finishing coats: Johnstone’s Stormshield Flexible Gloss.
  - Number of coats: 2 coats brush, roller or spray applied. Allow 16-24 hours between coats.

155  EGGSHELL/ SATIN PAINT TO INTERNAL PLASTERED SURFACES - SEE FINISHES SCHEDULE FOR LOCATIONS
• Manufacturer: Johnstone’s, a brand of PPG Architectural Coatings UK Ltd. Huddersfield Road, Birstall, Batley, West Yorkshire, WF17 9XA. Tel: 01924 354000. Fax: 01924 354548. Web: www.johnstonestrade.com Email: specifiers.acuk@ppg.com.
- Product reference: Johnstone’s Acrylic Eggshell.
• Surfaces: Internal plastered.
  - Preparation: Surfaces should be clean, dry and free from loose and flaking materials. Prime bare surfaces with the appropriate Johnstone’s Primer. Rub down previously gloss painted surfaces with fine waterproof abrasive paper and rinse thoroughly. Special precautions should be taken during surface preparation of pre-1960’s paint surfaces over wood and metal as they may contain harmful lead. Do not apply in temperatures below 5°C. If more than one can of colour is to be used in the same area, intermix before use. For further advice contact SigmaKalon Technical Advisory Department.
• Initial coats: Seal absorbent surfaces with a coat of Acrylic Eggshell thinned up to 10% with clean water, applied by brush, roller or spray.
  - Number of coats: 1.
• Finishing coats: Johnstone’s Acrylic Eggshell.
  - Number of coats: 2 coats brush, roller or spray applied. Allow 3-4 hours between coat.

GENERALLY
215  HANDLING AND STORAGE
• Coating materials: Deliver in sealed containers, labelled clearly with brand name, type of material and manufacturer’s batch number.
• Materials from more than one batch: Store separately. Allocate to distinct parts or areas of the work.

220  COMPATIBILITY
• Coating materials selected by contractor:
  - Recommended by their manufacturers for the particular surface and conditions of exposure.
  - Compatible with each other.
  - Compatible with and not inhibiting performance of preservative/fire retardant pretreatments.
240 **SURFACES NOT TO BE COATED**
- Areas of acoustic ceiling tiles.

280 **PROTECTION**
- ‘Wet paint’ signs and barriers: Provide where necessary to protect other operatives and general public, and to prevent damage to freshly applied coatings.

320 **INSPECTION BY COATING MANUFACTURERS**
- General: Permit manufacturers to inspect work in progress and take samples of their materials from site if requested.

**PREPARATION**

400 **PREPARATION GENERALLY**
- Standard: In accordance with BS 6150.
- Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
- Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
- Substrates: Sufficiently dry in depth to suit coating.
- Efflorescence salts: Remove.
- Dirt, grease and oil: Remove. Give notice if contamination of surfaces/substrates has occurred.
- Surface irregularities: Remove.
- Joints, cracks, holes and other depressions: Fill flush with surface, to provide smooth finish.
- Dust, particles and residues from preparation: Remove and dispose of safely.
- Water based stoppers and fillers:
  - Apply before priming unless recommended otherwise by manufacturer.
  - If applied after priming: Patch prime.
- Oil based stoppers and fillers: Apply after priming.
- Doors, opening windows and other moving parts:
  - Ease, if necessary, before coating.
  - Prime resulting bare areas.

420 **FIXTURES AND FITTINGS**
- Removal: Before commencing work remove: Coverplates, grilles, wall clocks, and other surface mounted fixtures.
- Replacement: Refurbish as necessary, refit when coating is dry.

425 **IRONMONGERY**
- Removal: Before commencing work: Remove ironmongery from surfaces to be coated.
- Hinges: Do not remove.
- Replacement: Refurbishment as necessary; refit when coating is dry.

430 **EXISTING IRONMONGERY**
- Refurbishment: Remove old coating marks. Clean and polish.
PREVIOUSLY COATED SURFACES GENERALLY

- Preparation: In accordance with BS 6150, clause 11.5.
- Contaminated or hazardous surfaces: Give notice of:
  - Coatings suspected of containing lead.
  - Substrates suspected of containing asbestos or other hazardous materials.
  - Significant rot, corrosion or other degradation of substrates.
- Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
- Removing coatings: Do not damage substrate and adjacent surfaces or adversely affect subsequent coatings.
- Loose, flaking or otherwise defective areas: Carefully remove to a firm edge.
- Alkali affected coatings: Completely remove.
- Retained coatings:
  - Thoroughly clean to remove dirt, grease and contaminants.
  - Gloss coated surfaces: Provide key.
- Partly removed coatings:
  - Additional preparatory coats: Apply to restore original coating thicknesses.
  - Junctions: Provide flush surface.
- Completely stripped surfaces: Prepare as for uncoated surfaces.

PREVIOUSLY COATED SURFACES - BLAST CLEANING

- Operatives:
  - Trained/ experienced in blast cleaning.
  - Submit evidence of training/ experience on request.
- Dust and nuisance: Minimize.

PREVIOUSLY COATED SURFACE - BURNING OFF

- Risk assessment and method statement: Prepare, and obtain approval before commencing work.
- Adjacent areas: Protect from excessive heat and falling scrapings.
- Exposed resinous areas and knots: Apply two coats of knotting.
- Removed coatings: Dispose of safely.

PREVIOUSLY COATED WOOD

- Degraded or weathered surface wood: Take back to provide suitable substrate.
- Degraded substrate wood: Repair with sound material of same species.
- Exposed resinous areas and knots: Apply two coats of knotting.

PREPRIMED WOOD

- Areas of defective primer: Take back to bare wood and reprime.

UNCOATED WOOD

- General: Provide smooth, even finish with arrises and moulding edges lightly rounded or eased.
- Heads of fasteners: Countersink sufficient to hold stoppers/fillers.
- Resinous areas and knots: Apply two coats of knotting.

UNCOATED PLASTER

- Nibs, trowel marks and plaster splashes: Scrape off.
- Overtrowelled 'polished' areas: Key lightly.

UNCOATED PLASTERBOARD

- Depressions around fixings: Fill with stoppers/ fillers
ORGANIC GROWTHS
- Dead and loose growths and infected coatings: Scrape off and remove from site.
- Treatment biocide: Apply appropriate solution to growth areas and surrounding surfaces.
- Residual effect biocide: Apply appropriate solution to inhibit re-establishment of growths.

EXISTING GUTTERS
- Dirt and debris: Remove from inside of gutters.
- Defective joints: Clean and seal with suitable jointing material.

APPLICATION

COATING GENERALLY
- Application standard: In accordance with BS 6150, clause 9.
- Conditions: Maintain suitable temperature, humidity and air quality during application and drying.
- Surfaces: Clean and dry at time of application.
- Thinning and intermixing of coatings: Not permitted unless recommended by manufacturer.
- Overpainting: Do not paint over intumescent strips or silicone mastics.
- Priming coats:
  - Thickness: To suit surface porosity.
  - Application: As soon as possible on same day as preparation is completed.
- Finish:
  - Even, smooth and of uniform colour.
  - Free from brush marks, sags, runs and other defects.
  - Cut in neatly.
- Doors, opening windows and other moving parts: Ease before coating and between coats.

PRIMING JOINERY
- Preservative treated timber: Retreat cut surfaces with two flood coats of a suitable preservative before priming.
- End grain: Coat liberally allow to soak in, and recoat.

WORKSHOP COATING OF CONCEALED JOINERY SURFACES
- General: Apply coatings to all surfaces of components.

GLAZING
- Etched, sand blasted and ground glass: Treat or mask edges before coating to protect from contamination by oily constituents of coating materials.
M61 Intumescent coatings for fire protection of steelwork

To be read with Preliminaries/General conditions

PROTECTIVE COATING SYSTEMS

110 ON SITE COATING TO PRIMED STEEL INTERNALLY
• Use/ location: Exposed internal faces of columns, beams and purlins.
• Fire resistance to BS 476-21: 30 minutes.
• Preparation and priming: By steelwork contractor, as section G10.
  - Primer: Zinc phosphate, as section G10.
• Intumescent coat:
  - Manufacturer: Nullifire - Part of Tremco illbruck Coatings Ltd. Torrington Avenue, Coventry, West Midlands, CV4 9TJ. Tel: 024 7685 5000. Fax: 024 7646 9547. Web: www.nullifire.com Email: protect@nullifire.com.
  - Product reference: S707-60 Water based system.
  - Finish: Non-visible areas: Basic.
• Top sealer coat: Type recommended by intumescent coating manufacturer.
  - Dry film thickness: As recommended by manufacturer.
  - Colour: White.
• Bolt head/ nut protection: As main steelwork.

GENERAL REQUIREMENTS

205 VALIDATION OF MATERIALS
• Project specific evaluation of intumescent coating materials:
  - Standard: To BS 8202-2, clause 4.
  - Test results: Submit on request.

210 WORKING PROCEDURES
• Standard: To BS 8202-2.
• Give notice: Before commencing surface preparation and coating application.
• Quality control: Record project specific procedures for surface preparation and coating application.

215 WORKING CONDITIONS
• General: Maintain suitable temperature, humidity and air quality during coating application and drying.
• Surfaces to be coated: Clean and dry at time of coating application.

220 APPLICATOR’S PERSONNEL
• Operatives: Trained/ experienced in anticorrosive and intumescent coatings.
• Evidence of training/ experience: Submit on request.

250 SPRAYED COATING APPLICATION
• Spray drift: Minimize.
• Masking: Protect designated adjacent surfaces.
  - Designated surfaces: Fair faced brickwork.
270 INSPECTION
• Permit intumescent coating manufacturer to:
  - Inspect work in progress.
  - Inspect quality control records.
  - Take dry film thickness and other measurements.
  - Take samples of coating products.
• Intumescent coating manufacturer's inspection reports: Submit without delay.

280 OFF SITE COATED STEEL
• Handling and erection: Use methods and devices designed to minimise damage to intumescent coatings.

PREPARATION OF SURFACES

315 NEW STEEL - BLAST CLEANING
• Preparation: Remove oil and grease.
• Blast cleaning:
  - Atmospheric condition: Dry.
  - Abrasive: Suitable type and size, free from fines, moisture and oil.
  - Finish: To BS EN ISO 8501-1, preparation grade SA2½, with an average profile of approximately 75 micrometres.
  - Abrasive residues and moisture: Remove.
• Primer: Apply as soon as possible after cleaning and before gingering or blackening appears.

320 EXISTING STEEL - BLAST CLEANING
• Preparation: Remove oil and grease.
• Blast cleaning: Remove existing coatings.
  - Atmospheric condition: Dry.
  - Abrasive: Suitable type and size, free from fines, moisture and oil.
  - Finish: To BS EN ISO 8501-1, preparation grade SA2½, with an average profile of approximately 75 micrometres.
  - Abrasive residues and moisture: Remove.
• Primer: Apply as soon as possible after cleaning and before gingering or blackening appears.

330 EXISTING STEEL - MANUAL CLEANING
• Preparation: Remove oil and grease.
• Finish: To BS EN ISO 8501-1, preparation grade St2. Leave a clean but unpolished dry surface.
• Primer: Apply as soon as possible after cleaning and before gingering or blackening appears.

340 EXISTING STEEL - OVERCOATING
• Preparation: Remove oil and grease.
• Loose or unsound coatings: Remove to a firm edge.
• Exposed steel finish: Manually clean to BS EN ISO 8501-1, grade St2. Leave a clean but unpolished dry surface.
• Existing coatings finish: Abrade to give a good key. Leave a clean, dry surface.
• Primer: Apply one brush coat to bare steel areas. Remove coating edges that lift as a result of priming, and reprime.
APPLICATION OF COATINGS

410 INTUMESCENT DRY FILM THICKNESS (DFT)
- Required dft: Determine for every steel member to give specified period of fire resistance. Use intumescent coating manufacturer's current published loading tables.
- Special sections and partial fire exposure conditions: Obtain required dft in writing from manufacturer.
- Schedule and drawings: Submit at least two weeks before starting work.
  - Schedule content: Member sizes, weights/thicknesses, loading conditions, etc. showing, for each variant, the exposed perimeter/sectional area (Hp/A) ratio and required dft.
  - Drawing content: Steelwork drawings marked in colour to show required dft for each member.

420 MEASUREMENT OF INTUMESCENT DFT
- Primer dft: Determine average dft (for deduction from total dft after application of intumescent).
- Intumescent dft: Determine at:
  - 500 mm centres along each coated plane of universal sections (8 planes), and rectangular hollow sections (4 planes).
  - 125 mm centres along coated circular hollow sections, spread evenly around circumference.
- Acceptance standard:
  - Average intumescent dft: Not less than required dft (exclusive of primer and top sealer).
  - Local intumescent dft: Not less than 80% of required dft. Areas greater than 100 mm equivalent diameter with a dft of less than 80% of required dft must be brought up to thickness.

440 BASIC FINISH
- Definition: Reasonably smooth and even. Orange peel, other texture, minor runs and similar minor defects are acceptable.

450 NORMAL DECORATIVE FINISH
- Definition: Good standard of cosmetic finish generally, when viewed from a distance of 5 m or more. Minor orange peel or other texture is acceptable.

520 COMPLETION OF OFF SITE COATED STEEL
- Exposed unprotected areas, including fixings: Following erection of steelwork, apply intumescent coating locally.
- Unscheduled additional connections to erected steelwork: Remove and reinstate intumescent coating locally.

530 RECORDS OF COATED STEEL
- On completion of intumescent coating work, submit:
  - Accurate surface preparation and coating application records.
  - Fire resistance certificates.
  - Intumescent coating manufacturer's recommendations for maintenance and overcoating.
N10 General fixtures/ furnishings/ equipment

To be read with Preliminaries/General conditions.

PRODUCTS

115 EDUCATION FURNITURE
- Item: IT benching.
- Manufacturer: Boyco Manufacturing Co. Europa Way, Cheadle Heath, Stockport, Cheshire, SK3 0XE. Tel: 0161 428 7077. Fax: 0161 428 7073. Web: www.boycouk.com Email: mail@boycouk.com.
- Product reference: L-Technotop.
- Dimensions: As drawings and Boyco quote.
- Worktops:
  - Material: 25 mm thick laminate faced MDF MR.
  - Finish/ Colour: As per finishes schedule.
  - Exposed edges: P.U. injection moulded Technotop nosing.
- Supports: Hot dip nylon coated 50 x 25 mm steel tubing.
- Accessories/ Other requirements: Standard height adjustable feet.

120 EDUCATION FURNITURE
- Item: Wet area cupboards, worktops, tray units and sinks.
- Manufacturer: Boyco Manufacturing Co. Europa Way, Cheadle Heath, Stockport, Cheshire, SK3 0XE. Tel: 0161 428 7077. Fax: 0161 428 7073. Web: www.boycouk.com Email: mail@boycouk.com.
- Product reference: CB/SD/100, CB/SK/100, CB/TY/100, CB/SD/100/HL.
- Dimensions: As drawings and Boyco quote.
- Worktops:
  - Material: 25 mm thick laminate faced MDF MR.
  - Finish/ Colour: As per finishes schedule.
  - Exposed edges: P.U. injection moulded Waterfall (anti-drip) nosing.
- Cupboard units:
  - Material: 18 mm thick MFC carcass c/w HPL 18 mm thick MDF doors.
  - Finish/ Colour: As per finishes schedule.
  - Exposed edges: Manufacturer's standard.
- Supports: Base units / carcasses.
- Accessories/ Other requirements: Trays where indicated - Colour: Blue.

160 SHELVING SYSTEM TO STORES GENERALLY
- Manufacturer: Boyco Manufacturing Co. Europa Way, Cheadle Heath, Stockport, Cheshire, SK3 0XE. Tel: 0161 428 7077. Fax: 0161 428 7073. Web: www.boycouk.com Email: mail@boycouk.com.
- Product reference: E2 (L) & H3(L) - see drawings for locations.
- Shelves:
  - Material: 18 mm thick MFC c/w 2 mm solid PVC lipping to edges.
  - Finish/ Colour: Grey laminate.
- Other components: Hot dipped nylon coated steel supports - RAL5010 (blue). Supports to E2(L) to be 25 x 25 mm steel sections c/w shelf bearers. Supports to H3(L) to be uprights at 600 mm crs with 'drop & lock' safety protection.
460 SEALANT TO VANITY FURNITURE & WET AREA WORKTOPS
   • Standard: To BS EN ISO 11600, class F20 HM.
   • Type: One part silicone.
     - Manufacturer: Dow Corning Ltd. Meriden Business Park, Copse Drive, Allesley,
       Coventry, West Midlands, CV5 9RG. Tel: 01676 528000. Fax: 01676 528001. Web:
       www.dowcorning.com Email: marie.elliott@dowcorning.com.
     - Product reference: 786 Silicone Sealant.
   • Colour: White.

EXECUTION

710 MOISTURE CONTENT OF WOOD AND WOOD BASED BOARDS
   • Temperature and humidity: During delivery, storage, fixing and to handover maintain
     conditions to suit specified moisture contents of timber components.
   • Testing: When instructed, test components with approved moisture meter to
     manufacturer's recommendations.

720 INSTALLATION GENERALLY
   • General: As Preliminaries section A33.
   • Fixing and fasteners: As section Z20.
   • Services: As Engineering Services specification.

760 SEALANT BEDDING AND POINTING
   • Application: As section Z22.
   • Bedding: Sink to top of worktop.
   • Pointing: Between units and splash backs. Between units and floor.

770 TRIMS
   • Lengths: Wherever possible, unjointed between angles or ends of runs.
   • Running joints: Where unavoidable, obtain approval of location and method of jointing.
   • Angle joints: Mitred.

COMPLETION

910 GENERAL
   • Doors and drawers: Accurately aligned, not binding. Adjusted to ensure smooth operation.
   • Ironmongery: Checked, adjusted and lubricated to ensure correct functioning.

920 APPLIANCES
   • Test: Ensure that all functions and features work correctly.
   • Documentation: Submit guarantees, instruction manuals, etc.
N11 Domestic kitchen fittings, furnishings and equipment

To be read with Preliminaries/ General conditions.

PRODUCTS

305 KITCHEN UNITS TO NURSERY
- Standard: To BS 6222 -2 and -3, and BS EN 14749.
  - Product reference: Greenwich Range: 1 x 197 - 1000 Hi-Line Easy Fit sink base unit; 1 x 270 - 1000 Hi-Line base unit; 1 x 210 - 400 Hi-Line base unit; 1 x 450 - 1000 Full Height wall unit.
- Dimensions: To BS EN 1116.
- Surface finishes: To BS 6222-3.
- Doors and drawer fronts:
  - Material: MFC slab with ABS edging.
  - Finish and colour: To be confirmed.
  - Edges: ABS edging.
  - Other requirements: None.
- Side panels, plinths and shelves:
  - Material: MFC slab.
  - Finish and colour: To be confirmed.
  - Edges: Plastics strip.
- Worktop: Matt Laminate 38mm thick - 616mm Deep - Standard range
  - Finish and colour: To be confirmed
- Sink: SNK0027 - single bowl, single drainer Lamona sink
- Taps: TAP9012 - 1 x pair Lamona pillar taps
- Accessories: None.

390 SEALANT
- Standard: Not applicable.
- Type: One part silicone.
  - Manufacturer: Dow Corning Ltd. Meriden Business Park, Copse Drive, Allesley, Coventry, West Midlands, CV5 9RG. Tel: 01676 528000. Fax: 01676 528001. Web: www.dowcorning.com Email: marie.elliott@dowcorning.com.
  - Product reference: 786 Silicone Sealant.
  - Colour: White.

EXECUTION

610 MOISTURE CONTENT OF WOOD AND WOOD BASED BOARDS
- Control and monitoring:
  - Method statement: Submit.

620 INSTALLATION GENERALLY
- Fixings and adhesives: As section Z20.
- Services: As Engineering Services specification.

630 INSTALLING UNITS AND WORKTOPS
- General: Well fitting, stable and secure.
640 INSTALLING APPLIANCES

- Connections: Provide to electric, gas, and hot and cold water services.

650 INSTALLING SINKS, TAPS AND WASTES

- Water supply: To BS EN 806-2 and -4.
  - Taps:
    - Fixing: Secure, watertight seal with the appliance.
    - Positioning: Hot tap to left of cold tap as viewed by the user of the appliance.
  - Wastes:
    - Bedding: Waterproof jointing compound.
    - Fixing: With resilient washer between appliance and backnut.

660 SEALANT BEDDING AND POINTING

- Application: As section Z22.
- Bedding: Sink to top of worktop.
- Pointing: Between units and splash backs and between units and floor.

670 INSTALLING TRIMS AND MOULDINGS

- Lengths: Un-jointed between angles or ends of runs.
- Angle joints: Mitred.

COMPLETION

910 GENERAL

- Doors and drawers: Accurately aligned, not binding. Adjusted to ensure smooth operation.
- Ironmongery: Checked, adjusted and lubricated to ensure correct functioning.

920 APPLIANCE COMMISSIONING

- Appliance operation, functions and controls: Verify.
- Documentation: Submit guarantees, instruction manuals, etc.
N13 Sanitary appliances and fittings

To be read with Preliminaries/ General conditions.

PRODUCTS

301 WCS AND CISTERNs TO NURSERY TOILETS - 3No pans

- Type: Back to wall, concealed cistern.
- Manufacturer: Armitage Shanks. Armitage, Old Road, Rugeley, Staffordshire, WS15 4BT.
  Tel: 0870 122 8822. Fax: 0870 122 8282. Web: www.thebluebook.co.uk Email: info@thebluebook.co.uk
- Pan:
  - Product reference: S3046(01) - Contour 21 schools, back to wall wc pan, 305mm high.
  - Material: Vitreous china, white.
- Seat (no cover):
  - Product reference: S4057(01) - Contour 21 small schools toilet seat no cover, bottom fixing hinges.
  - Material: Plastics, white.
- Pan connector:
  - Standard: To BS 5627.
  - Product reference: Contractor's choice to suit installation.
  - Colour: White.
- Cistern:
  - Product reference: S362367 - Conceala cistern and cover, 6 litre single flush push button, side supply and internal overflow, low level connection.
  - Material: Plastics.
  - Finish/ Colour: Not applicable.
- Flushing arrangement: Compact type float operated valve and siphon, to BS 1212-4 and float to BS 2456.
  - Product reference: Contractor's choice.
  - Operating control: Push button, chrome plated.
  - Water supply connection: Side.
  - Flush volume: 6 L.
- Flush pipe: Concealed.
  - Product reference: Contractor's choice.
  - Material: Plastics, white.
- Accessories: Cistern support brackets.
WASH BASINS TO NURSERY TOILETS
- Manufacturer: Armitage Shanks. Armitage, Old Road, Rugeley, Staffordshire, WS15 4BT. Tel: 0870 122 8822. Fax: 0870 122 8282. Web: www.thebluebook.co.uk Email: info@thebluebook.co.uk.
  - Size: 500 x 400 mm.
  - Quantity: 3No.
  - Material: Vitreous china, white.
  - Tap/Chainstay/Overflow holes: Two tapholes with overflow, no chainstay hole.
  - Water supply fittings: Pair of non-concussive taps.
  - Wastes: Grated.
    - Size: DN 40.
    - Material: Stainless steel.
    - Tail: Slotted.
  - Traps: Bottle.
    - Product reference: Contractor's choice.
    - Size: DN 40.
    - Material: Plastics, self colour.
    - Depth of seal (minimum): 75 mm.
  - Accessories: None.

MIRRORS TO TOILETS GENERALLY - SEE PLANS FOR LOCATIONS
- Manufacturer: Mungai Mirrors Ltd. 3 St Johns Mews, Holmside Lane, Burnhope, County Durham, DH7 0EQ. Tel: 01207 521 677. Fax: 01207 528 199. Web: www.mungaimirrors.co.uk Email: sales@mungaimirrors.co.uk.
  - Product reference: Standard Rectangular Mirror.
  - Material: Acrylic.
  - Quality: Free from tarnishing, discoloration, scratches and other defects visible in the designed viewing conditions. Reflection undistorted.
  - Finish/Colour: 3mm acrylic mirror sheet.
  - Fixing: Double sided self adhesive pads.
  - Installation: Accurately with sides vertical.

SOAP DISPENSERS TO TOILETS
- Manufacturer: Initial Washroom Solutions. Bridge House, Mathisen Way, Colnbrook, Berkshire, SL3 0HH. Tel: 0845 600 3090. Web: www.initialwashrooms.co.uk Email: sales@initialwashrooms.co.uk.
  - Product reference: 0302026 - White metal soap dispenser.
  - Material: Steel.
  - Finish/Colour: White.

HAND DRIERS TO TOILETS
- Type: Warm air.
- Manufacturer: Warner Howard.
  - Operation: Automatic.
  - Electrical supply: Fused switched 13 A connection unit.
  - Colour: White.

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580 SEALANT FOR POINTING
- Standard: To ISO 11600.
  - Class: F-20LM.
- Type: A one-part, silicone sealant.
- Manufacturer: Dow Corning Ltd. Meriden Business Park, Copse Drive, Allesley, Coventry, West Midlands, CV5 9RG. Tel: 01676 528000. Fax: 01676 528001. Web: www.dowcorning.com Email: marie.elliott@dowcorning.com.
- Colour: White.

EXECUTION

610 INSTALLATION GENERALLY
- Assembly and fixing: Surfaces designed to falls to drain as intended.
- Fasteners: Nonferrous or stainless steel.
- Supply and discharge pipework: Fix before appliances.
- Fixing: Fix appliances securely to structure. Do not support on pipework.
- Jointing and bedding compounds: Recommended by manufacturers of appliances, accessories and pipes being jointed or bedded.
- Appliances: Do not use. Do not stand on appliances.
- On completion: Components and accessories working correctly with no leaks.
- Labels and stickers: Remove.

613 COMPATIBILITY OF COMPONENTS
- General: Each sanitary assembly must consist of functionally compatible components, preferably obtained from a single manufacturer.
  - Exceptions: Water supply fittings, wastes and traps.

620 NOGGINGS AND BEARERS
- Noggings, bearers, etc. to support sanitary appliances and fittings: Position accurately. Fix securely.

630 TILED BACKGROUNDS OTHER THAN SPLASHBACKS
- Timing: Complete before fixing appliances.
- Fixing appliances: Do not overstress tiles.

650 INSTALLING WC PANS
- Floor mounted pans: Screw fix and fit cover caps over screw heads. Do not use mortar or other beddings.
  - Seat and cover: Stable when raised.

670 INSTALLING CISTERNs
- Cistern operating components: Obtain from cistern manufacturer.
  - Float operated valve: Matched to pressure of water supply.
- Overflow pipe: Fixed to falls and located to give visible warning of discharge.
  - Location: Agreed, where not shown on drawings.

710 INSTALLING TAPS
- Fixing: Secure against twisting.
- Seal with appliance: Watertight.
- Positioning: Hot tap to left of cold tap as viewed by user of appliance.

720 INSTALLING WASTES AND OVERFLOWS
- Bedding: Waterproof jointing compound.
- Fixing: With resilient washer between appliance and backnut.
725 INSTALLING HAND DRIERS
   • Fused connection units:
     - Type: Switched.
     - Engraving: With 'HAND DRIER'.
     - Location: Immediately below ceiling.
   • Final connection: Concealed.
     - Containment: 25 mm HG galvanized conduit.

755 SEALANT BEDDING AND POINTING
   • Bedding: Bed sinks to top of worktops.
   • Pointing: Joints between appliances and splashbacks. Joints between appliances and walls. Joints between appliances and floors.
N14 General internal signage systems

To be read with Preliminaries/ General conditions.

PRODUCTS

305 PRODUCTS GENERALLY

• Standard: To BS 559.

350 PLASTICS INTERNAL SIGNAGE

• Material: Acrylic sign with SSS fixing cover cap and washer only to rear - No spacers.
• Manufacturer: Aspex UK Ltd. 4A Radnor Road, Wigston, Leicester, LE18 4XY. Tel: 0116 278 3506. Fax: 0116 278 4069.
  - Product reference: 66130 - 50 mm high sign with 25 mm characters - 14No in total to internal doors.
• Component thickness: Manufacturer's standard.
• Finish: Manufacturer's standard clear acrylic.
• Perimeters: Not applicable.

EXECUTION

610 FIXING SIGNS GENERALLY

• Installation: To BS 559.
  - Secure, plumb and level.
• Strength of fasteners: Sufficient to support all live and dead loads.
• Fasteners and or adhesives: As section Z20.
• Fixings showing on surface of sign: Must not detract from the message being displayed.

COMPLETION

910 DOCUMENTATION

• Submit:
  - Manufacturer's maintenance instructions.
  - Guarantees, warranties, test certificates, record schedules and log books.
N15 Internal fire and safety signage systems

To be read with Preliminaries/ General Conditions.

GENERAL

110 FIRE SIGNAGE SYSTEMS FOR ESCAPE ROUTES, EQUIPMENT & SAFETY
- System manufacturer: Fireproof Ltd. Unit 4, Matrix House, 18 Constitution Hill, Leicester, LE1 1PL. Tel: 0116 248 9555. Fax: 0116 248 9555. Web: www.fireproofuk.co.uk.
- Product reference: Various.
- Layout and dimensions: Various.
- Language: English.
- Sign type: Adhesive vinyl sheet.
- Manufacturing process: Manufacturer's standard.
- Supports/ Fixings: Wall mounted, self adhesive.
- Accessories: Not required.

SYSTEM PERFORMANCE

210 GENERAL REQUIREMENTS
- Signage system design:
  - Complete to: BS 559 and BS ISO 16069.
  - Comply with the requirements of: Fire Strategy Report.
- Proposals: Submit drawings, schedules, technical information, calculations and manufacturer's literature.

240 SIGNAGE SYSTEM SPECIFICATION
- Content: Signs including facing information, components, inserts, accessories and fixings necessary to complete the system.
- Geometric shapes, colours and layout: To BS ISO 3864-1.
- Escape route: In accordance with BS 5499-4 and BS ISO 16069.
- Safety meaning: In accordance with BS ISO 7010.
- Water safety: In accordance with BS ISO 20712-1.

PRODUCTS

305 INTERNAL SIGNAGE PRODUCTS GENERALLY
- Standard: To BS 559.
- Colorimetric and photometric properties: To BS ISO 3864-4.

310 ADHESIVE VINYL SHEET FOR ESCAPE ROUTE SIGNS
- Manufacturer: Fireproof Ltd. Unit 4, Matrix House, 18 Constitution Hill, Leicester, LE1 1PL. Tel: 0116 248 9555. Fax: 0116 248 9555. Web: www.fireproofuk.co.uk.
- Product reference: Various to suit location and application.
- Component thickness: 1 mm.
- Finish: Gloss.
EXECUTION

610  FIXING SIGNS GENERALLY
  •  Installation: To BS 559.
    - Secure, plumb and level.
  •  Fasteners and adhesives: As section Z20.
  •  Strength of fasteners: Sufficient to support live and dead loads.
  •  Fasteners for external signs: Corrosion resistant material or with a corrosion resistant finish. Isolate dissimilar metals to avoid electrolytic corrosion.
  •  Fixings showing on surface of sign: Must not detract from the message being displayed.

COMPLETION

910  DOCUMENTATION
  •  Submit:
    - Manufacturer's maintenance instructions.
    - Guarantees, warranties, test certificates, record schedules and logbooks.
P10 Sundry insulation/ proofing work

SUNDARY INSULATION/ PROOFING WORK

To be read with Preliminaries/ General conditions.

TYPES OF INSULATION

190 INSULATION FITTED BETWEEN STUDS

- Manufacturer: Saint-Gobain Isover. UK Commercial Centre, Gotham Business Park, Leake Road, Gotham, Nottinghamshire, NG11 0LB. Tel: 0115 969 8010. Fax: 0115 983 1675. Web: www.isover.co.uk Email: helen.tunnicliffe@saint-gobain.com.
- Material: Glass mineral wool to BS EN 13162.
  - Facing: Not required.
- Recycled content: None permitted.
- Thickness: 25 mm.
- Installation requirements:
  - Joints: Butted, no gaps.
  - Fasteners: Use where necessary to retain insulation and/or prevent slumping.

310 VAPOUR CONTROL LAYER FIXED TO U/S TRUSSED RAFTERS (INSULATION SUPPORT)

- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.
- Material: 1200 gauge virgin polyethylene.
- Minimum vapour resistance: 250 MN s/g.
- Installation requirements:
  - Setting out: Joints minimized.
  - Method of fixing: Staples at 250 mm centres maximum along all timber frames and supports; membrane not sagging.
  - Joints: At supports only, lapped 150 mm minimum.
  - Openings: Membrane fixed to reveals.
  - Joints and edges: Sealed with double sided tape with vapour resistivity not less than the vapour control layer.
- Penetrations: Sealed.
- Other requirements: None.
P12 Fire stopping systems

To be read with Preliminaries/ General conditions.

PRODUCTS

305 PRODUCT CERTIFICATION
• Certification: For products specified generically, submit evidence of compliance with the specification.
• Acceptable evidence: Agrément certificate.

338 INTUMESCENT MASTIC
• Manufacturer: PFC Corofil Fire Stop Products. Units 3 & 4, King George Trading Estate, Davis Road, Chessington, Surrey, KT9 1TT. Tel: 020 8391 0533. Fax: 00 8391 2723. Web: www.pfc-corofil.com Email: sales@pfc-corofil.co.uk.

342 FIRE RESISTING MORTAR
• Manufacturer: PFC Corofil Fire Stop Products. Units 3 & 4, King George Trading Estate, Davis Road, Chessington, Surrey, KT9 1TT. Tel: 020 8391 0533. Fax: 00 8391 2723. Web: www.pfc-corofil.com Email: sales@pfc-corofil.co.uk.
  - Product reference: PFC Corofil Firestop Compound.

355 FIRESTOP STRIPS
• Manufacturer: PFC Corofil Fire Stop Products. Units 3 & 4, King George Trading Estate, Davis Road, Chessington, Surrey, KT9 1TT. Tel: 020 8391 0533. Fax: 00 8391 2723. Web: www.pfc-corofil.com Email: sales@pfc-corofil.co.uk.
  - Product reference: PFC Corofil C144 Firestop Strips and Blocks.

370 PIPE COLLAR - CONCEALED INTUMESCENT
• Manufacturer: PFC Corofil Fire Stop Products. Units 3 & 4, King George Trading Estate, Davis Road, Chessington, Surrey, KT9 1TT. Tel: 020 8391 0533. Fax: 00 8391 2723. Web: www.pfc-corofil.com Email: sales@pfc-corofil.co.uk.

375 PIPE COLLAR - INSULATED WRAP
• Manufacturer: PFC Corofil Fire Stop Products. Units 3 & 4, King George Trading Estate, Davis Road, Chessington, Surrey, KT9 1TT. Tel: 020 8391 0533. Fax: 00 8391 2723. Web: www.pfc-corofil.com Email: sales@pfc-corofil.co.uk.
  - Product reference: PFC Corofil Intumescent Pipe Wraps.

EXECUTION

620 WORKMANSHP GENERALLY
• Gaps: Seal gaps between building elements and services, to provide fire resistance and resist the passage of smoke.
• Adjacent surfaces: Prevent overrun of sealant or mortar on to finished surfaces.
660  APPLYING INTUMESCENT FOAM  
- New joints: Remove builder’s debris, mortar droppings, grease, and other contaminants.
- Old joints: Clean and remove existing sealant from each joint.
- Priming: Lightly moisten substrate with water.
- Application: Fill joint to approximately half its depth, and allow foam to expand to face of joint.
- Trimming: Do not trim or cut the face of the cured foam.

730  FIXING PIPE COLLARS  
- Collar fixing: Self-tapping screws, stainless steel.
- Gap around collar: Seal with intumescent mastic.
- Length of wraps: Not applicable.

740  INSERTING SEALANT BACKING MATERIAL  
- Preparation: Removed debris from service penetration.
- Installation: Insert joint filler to full depth of joint leaving sufficient depth to apply sealant.

745  APPLYING SEALANTS GENERALLY  
- Application: As section Z22.

COMPLETION

910  CLEANING  
- Masking tapes: Remove.
- Cleaning: Clean off splashes and droppings. Wipe down finishes.

920  INSPECTION  
- Notice for inspection (minimum): 3 working days.
P20 Unframed isolated trims/ skirtings/ sundry items

To be read with Preliminaries/ General conditions

110 SOFTWOOD SKIRTINGS GENERALLY
- Quality of wood and fixing: To BS 1186-3.
  - Species: European whitewood.
  - Class: 2.
- Moisture content at time of fixing: 9-13%.
- Preservative treatment: Not required.
- Fire rating: Not applicable.
- Profile: Pencil rounded.
- Finished size: 19 x 95 mm.
- Finish as delivered: Natural.
- Fixing: Plugged, screwed and pelleted at 450 mm centres.

111 SOFTWOOD ARCHITRAVES GENERALLY
- Quality of wood and fixing: To BS 1186-3.
  - Species: European whitewood.
  - Class: 2.
- Moisture content at time of fixing: 9-13%.
- Preservative treatment: Not required.
- Fire rating: Not applicable.
- Profile: Pencil rounded.
- Finished size: 19 x 95 mm.
- Finish as delivered: Natural.
- Fixing: Nailed at 600 mm centres.

205 MEDIUM DENSITY FIBREBOARD WINDOW SILL BOARDS
- Manufacturer: Contractor's choice.
- Product reference: Contractor's choice.
- Standard: To BS EN 622-5.
  - Type: MDF.
  - Formaldehyde class: To BS EN 622-1, Class E1.
- Fire rating: Not applicable.
- Thickness: 25 mm.
- Profile: Pencil rounded.
- Finish: Prepared and primed as section M60.
- Recycled content: Contractor's choice.
- Support/ Fixing: Plugged, screwed and pelleted at 450 mm centres.

210 MEDIUM DENSITY FIBREBOARD CUPBOARDS/SERVICE BOXINGS
- Manufacturer: Contractor's choice.
- Product reference: Contractor's choice.
- Standard: To BS EN 622-5.
  - Type: MDF.
  - Formaldehyde class: To BS EN 622-1, Class E1.
- Fire rating: Not applicable.
- Thickness: 25 mm.
- Profile: Square.
- Finish: Prepared and primed as section M60.
- Recycled content: Contractor's choice.
- Support/ Fixing: Screwed and pelleted into softwood grounds at 600 mm centres.
EXECUTION

510 INSTALLATION GENERALLY
- Joinery workmanship: As section Z10.
- Metal workmanship: As section Z11.
- Methods of fixing and fasteners: As section Z20 where not specified.
- Straight runs: To be in one piece, or in long lengths with as few joints as possible.
- Running joints: Location and method of forming to be agreed where not detailed.
- Joints at angles: Mitre, unless shown otherwise.
- Position and level: To be agreed where not detailed.
P21 Door/ window ironmongery

To be read with Preliminaries/ General conditions.

GENERAL

121 IRONMONGERY FROM SINGLE PROPRIETARY RANGE

- Manufacturer: Aspex UK Limited. Unit E, Blaby Industrial Park, Winchester Avenue, Blaby, Leicester, LE8 4GZ. Tel: 0116 278 3506. Fax: 0116 278 4069. Web: www.aspex-uk.co.uk Email: sales@aspex-uk.co.uk.
- Product reference: Aspex's standard ironmongery sets for YMD Boon Ltd - see appendix for further details.
- Principal material/ finish: Satin aluminium.
- Items unavailable within selected range: Submit proposals.

170 IRONMONGERY FOR FIRE DOORS

- Relevant products: Ironmongery fixed to, or morticed into, the component parts of a fire resisting door assembly.
- Compliance: Ironmongery included in successful tests to BS 476-22 or BS EN 1634-1 on door assemblies similar to those proposed.
- Certification: Submit evidence of successful testing by UKAS accredited laboratory.
- Melting point of components (except decorative non functional parts): 800°C minimum.

180 CATEGORY OF DUTY FOR DOOR IRONMONGERY

- Standard: To DD 171.
- Category of duty of doors: Severe duty.
- General: Durability of ironmongery components to be compatible with stated category of duty of each door leaf.
- Exclusions: Ironmongery with specific duty or 'category of use' defined elsewhere.
- Documentation: Before placing orders with suppliers submit documentation showing product compliance with stated category of duty.
P31 Holes, chases, covers and supports for services

To be read with Preliminaries/ General conditions.

EXECUTION

650 HOLES, RECESSES AND CHASES IN MASONRY
- Locations: To maintain integrity of strength, stability and sound resistance of construction.
- Sizes: Minimum needed to accommodate services.
  - Holes (maximum): 300 x 300 mm.
- Walls of hollow or cellular blocks: Do not chase.
- Walls of other materials:
  - Vertical chases: No deeper than one third of single leaf thickness, excluding finishes.
  - Horizontal or raking chases: No longer than 1 m. No deeper than one sixth of the single leaf thickness, excluding finishes.
- Chases and recesses: Do not set back to back. Offset by a clear distance at least equal to the wall thickness.
- Cutting: Do not cut until mortar is fully set. Cut carefully and neatly. Avoid spalling, cracking and other damage to surrounding structure.

670 NOTCHES AND HOLES IN STRUCTURAL TIMBER
- General: Avoid if possible.
- Sizes: Minimum needed to accommodate services.
- Position: Do not locate near knots or other defects.
- Notches and holes in same joist: Minimum 100 mm apart horizontally.
- Notches in joists: Locate at top. Form by sawing down to a drilled hole.
  - Depth (maximum): 0.125 x joist depth.
  - Distance from supports: Between 0.07 and 0.25 x span.
- Holes in joists: Locate on neutral axis.
  - Diameter (maximum): 0.25 x joist depth.
  - Centres (minimum): 3 x diameter of largest hole.
  - Distance from supports: Between 0.25 and 0.4 of span.
- Notches in roof rafters, struts and truss members: Not permitted.
- Holes in struts and columns: Locate on neutral axis.
  - Diameter (maximum): 0.25 x minimum width of member.
  - Centres (minimum): 3 x diameter of largest hole.
  - Distance from ends: Between 0.25 and 0.4 of span

690 INSTALLING PIPE SLEEVES
- Sleeves: Fit to pipes passing through building fabric.
- Material: Match pipeline.
- Size: One or two sizes larger than pipe to allow clearance.
- Finish: Install sleeves flush with building finish. In areas where floors are washed down, install protruding 100 mm above floor finish.
- Masking plates: Fit at visible penetrations, including through false ceilings of occupied rooms.

710 SEALING AROUND SERVICE PENETRATIONS
- Location: Walls, floors and ceilings.
- Sealing material: Intumescent sealant or compound - dependant on size of gaps.
- Method: Point neatly around pipes and cables.
- Performance requirement: Moisture vapour and airtight.
Q10 Kerbs/edgings/channels/paving accessories

To be read with Preliminaries/General conditions.

TYPES OF KERBS/EDGINGS AND CHANNELS

112 PRECAST CONCRETE EDGINGS
- Standard: To BS EN 1340.
- Recycled content: None permitted.
- Designations: EF Edging, flat top.
- Size (width x height x length): 50 x 150 x 915 mm.
- Special shapes: None.
- Finish: As cast.
- Colour: Grey.
- Bending strength: No requirement.
- Weathering resistance: No requirement.
- Abrasion resistance: No requirement.
- Slip/skid resistance: No requirement.
- Bedding: Cement mortar.
- Joints generally: Dry, 2-3 mm gap.
- Sealant movement joints: Not required.
- Accessories: None.

180 DRAINAGE CHANNEL SYSTEMS WITH GRATINGS
- Manufacturer: ACO Drain, Div of ACO Technologies plc. ACO Business Park, Hitchin Road, Shefford, Bedfordshire, SG17 5TE. Tel: 01462 816666. Fax: 01462 815895. Web: www.aco.co.uk Email: customersupport@aco.co.uk.
  - Product reference: Rain Drain.
- Size: Nominal bore 100 mm.
- Type of fall: Constant depth.
- Finish: As cast.
- Colour: Natural.
- Accessories: Drain unions; Endcaps - closing pieces; Endcaps - outlets.
- Bedding: Fresh concrete races.
- Joints generally: Drain unions as required.
- Cover gratings: Galvanized steel, slotted.
  - Fixings: Locking bars and bolts.
  - Loading grade to BS EN 124: A15.
  - Finish/Colour: Black.

LAYING

510 LAYING KERBS, EDGINGS AND CHANNELS
- Cutting: Neat, accurate and without spalling. Form neat junctions.
  - Long units (450 mm and over) minimum length after cutting: 300 mm.
  - Short units minimum length after cutting: The lower of one third of their original length or 50 mm.
- Bedding of units: Positioned true to line and levelled along top and front faces, in a mortar bed on accurately cast foundations or on a race of fresh concrete.
- Securing of units: After bedding has set, secured with a continuous haunching of concrete or on a race of fresh concrete with backing concrete cast monolithically.
520 ADVERSE WEATHER
• Conditions: Do not construct if the temperature is below 3°C on a falling thermometer or 1°C on a rising thermometer. Adequately protect foundations, bedding and haunching against frost and rapid drying by sun and wind.

530 CONCRETE FOR FOUNDATIONS, RACES AND HAUNCHING
• Standard: To BS 8500-2.
• Designated mix: Not less than GEN0 or Standard mix ST1.
• Workability: Very low.

540 CEMENT MORTAR BEDDING
• General: To section Z21.
• Mix (Portland cement:sand): 1:3.
  - Portland cement: Class CEM I 42.5 to BS EN 197-1.
  - Sand: to BS EN 12620, grade 0/4 or 0/2 (MP).
• Bed thickness: 12-40 mm.

547 BEDDING/BACKING OF UNITS ON FRESH CONCRETE RACES
• Standard: To BS 7533-6.

550 KERB DOWELS
• Dowels: Steel bar to BS 4482.
  - Size: 12 mm diameter, 150 mm long.
• Installation of dowels: Vertically into foundation while concrete is plastic.
  - Centres: To suit holes in kerbs.
  - Projection: 75 mm.
• Grouting of holes in kerbs: Filled with 1:3 cement:sand mortar finished flush.

580 DRAINAGE CHANNEL SYSTEMS
• Installation: To an even gradient, without ponding or backfall. Commence laying from outlets.
• Silt and debris: Removed from entire system immediately before handover.
• Washing and detritus: Safely disposed without discharging into sewers or watercourses.

600 RADIUS KERBS/CHANNELS
• Usage: Radii of 15 m or less.

610 ANGLE KERBS
• Usage: Internal and external 90° changes of direction.
• Cutting of mitres: Not permitted.

620 ACCURACY
• Deviations (maximum):
  - Level: ± 6 mm.
  - Horizontal and vertical alignment: 3 mm in 3 m.
• Maximum undulation of (non-tactile) paving surface: 3 mm.
  - Method of measurement: Under a 1 m straight edge placed anywhere on the surface
    (where appropriate in relation to the geometry of the surface).
• Difference in level between adjacent units (maximum):
  - Joints flush with the surface: Twice the joint width (with 5 mm max difference in level).
  - Recessed, filled joints: 2 mm.
  - Recess depth (maximum): 5 mm.
  - Unfilled joints: 2 mm.
• Sudden irregularities: Not permitted.

NARROW MORTAR JOINTS
• Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely
  filled, tightly butted and surplus mortar removed immediately.
  - Joint width: 3 mm.
Q20 Granular sub-bases to roads/ pavings

To be read with Preliminaries/ General conditions.

110 THICKNESSES OF SUB-BASE/ SUBGRADE IMPROVEMENT LAYERS
- Thicknesses: See sections:
  - Q22 Coated macadam/asphalt roads/pavings and Q25 Slab/brick/sett/cobble pavings.

140 EXCAVATION OF SUBGRADES
- Final excavation to formation or subformation level: Carry out immediately before compaction of subgrade.
- Soft spots and voids: Give notice.
- Old drainage and service trenches: Excavate to remove soft or damaged material, then backfill with specified granular sub-base material and compact.
- Wet conditions: Do not excavate or compact when the subgrade may be damaged or destabilized.

145 PREPARATION AND COMPACTION OF SUBGRADES
- Timing: Immediately before placing sub-base.
- Soft or damaged areas: Excavate and replace with sub-base material, compacted in layers 300 mm (maximum) thick.
- Compaction: Thoroughly, by roller or other suitable means, adequate to resist subsidence or deformation of the subgrade during construction and of the completed roads/ pavings when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.

150 SUBGRADES FOR VEHICULAR AREAS
- Preparation and treatment: To Highways Agency 'Specification for highway works', clauses 616 and 617.

211 GRANULAR MATERIAL
- Quality: Of a known suitability for use in sub-bases, free from excessive dust, well graded, all pieces less than 75 mm in any direction, minimum 10% fines value of 50 kN when tested in a soaked condition to BS 812-111 or a resistance to fragmentation of LA50 for the Los Angeles test to BS EN 1097-2, and in any one layer only one of the following:
  - Crushed rock (other than argillaceous rock) or quarry waste with not more binding material than is required to help hold the stone together.
  - Crushed concrete, crushed brick or tile, free from plaster, timber and metal.
  - Gravel or hoggin with not more clay content than is required to bind the material together, and with no large lumps of clay.
  - Natural gravel.
  - Natural sand.
- Filling: Spread and levelled in 150 mm maximum layers, each layer thoroughly compacted.

230 PLACING GRANULAR MATERIAL GENERALLY
- Preparation: Loose soil, rubbish and standing water removed.
- Structures, membranes and buried services: Ensure stability and avoid damage.

240 LAYING GRANULAR SUB-BASES FOR VEHICULAR AREAS
- General: Spread and levelled in layers. As soon as possible thereafter compact each layer.
- Standard: To Highways Agency 'Specification for highway works' clause 802.
- At drainage fittings, inspection covers, perimeters and where local excavation and backfilling has taken place: Take particular care to compact fully.
250 LAYING GRANULAR SUB-BASES FOR PEDESTRIAN AREAS
   • General: Spread and levelled.
   • Compaction:
      - Timing: As soon as possible after laying.
      - Method: By roller or other suitable means, adequate to resist subsidence or deformation of the sub-base during construction and of the completed paving when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.

310 ACCURACY
   • Permissible deviation from required levels, falls and cambers (maximum):
      - Subgrades:
         Roadss and parking areas: +20 -30 mm.
         Footways and recreation areas: ± 20 mm.
      - Sub-bases:
         Roadss and parking areas: ± 20 mm.
         Footways and recreation areas: +5 -10 mm.

320 SURFACES TO RECEIVE SAND BEDDING FOR PAVING TO SECTIONS Q24 and Q25.
   • Blind surface: As necessary before compaction to ensure that surface is tight and dense enough to prevent laying course sand being lost into it during construction or use.
   • Material: Sand.

330 COLD WEATHER WORKING
   • Frozen materials: Do not use.
   • Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.

340 PROTECTION
   • Sub-bases: As soon as practicable, cover with subsequent layers, specified elsewhere.
   • Subgrades and sub-bases: Prevent degradation by construction traffic, construction operations and inclement weather.
Q22 Asphalt roads/ pavings

To be read with Preliminaries/ General conditions.

TYPES OF PAVING

140 HOT ROLLED ASPHALT PAVING TO HARD STANDING AREAS

- Standard: To BS EN 13108-4.
- Subgrade improvement layer: Not required.
  - Compacted thickness: Not applicable.
- Granular sub-base: As section Q20.
  - Compacted thickness: 225 mm.
- Base: Hot rolled asphalt to HA clause 904.
  - Paving grade: To specialists advice.
  - Compacted thickness: 70 mm.
- Binder course: Not required.
  - Paving grade: Not applicable.
  - Compacted thickness: Not applicable.
- Surface course: Hot rolled asphalt to HA clause 910.
  - Paving grade: To specialists advice.
  - Compacted thickness: 30 mm nominal, 25 mm minimum at any point.
- Reclaimed content:
  - Standard: To BS EN 13108-8.
  - Value (maximum): Contractor's choice.
- Surface treatment: Not required.
- Other requirements None.

180 SURFACE TREATMENT TO EXISTING PAVING EXISTING DRIVEWAY

- Base: Existing hot rolled asphalt.
- Preparation: Cut out depressions, fill to match existing surface and compact.
- Surface to receive dressing: Clean and dry. All patching complete.
- Binder: Contractor's choice.
- Finish: Contractor's choice.
  - Slip/ skid resistance: Submit proposals.

PREPARATORY WORK/ REQUIREMENTS

220 BITUMINOUS MATERIALS GENERALLY

- Suppliers names: Submit.
  - Timing (minimum): Two weeks before starting work.
- Test certificates: At the time of delivery for each manufacturing batch submit certificate:
  - Confirming compliance with this specification and the relevant standard.
  - Stating full details of composition of mix.

240 ACCEPTANCE OF SURFACES

- Surface: Sound, clean and suitably close textured.
- Level tolerances: To BS 594987.
- Kerbs and edgings: Complete, adequately bedded and haunched and to the required levels.
250 ABUTMENTS
- Vertical edges of manholes, gullies, kerbs and other abutments: Clean and paint with a thin uniform coating of cold applied thixotropic bitumen emulsion.
- Finishing: Tamp surface around projections.
  - Level: Flush or not more than 3 mm above projections.

LAYING

310 LAYING GENERALLY
- Preparation: Remove all loose material, rubbish and standing water.
- Adjacent work: Form neat junctions. Do not damage.
- Channels, kerbs, inspection covers etc: Keep clean.
- New paving:
  - Keep traffic free until it has cooled to prevailing atmospheric temperature.
  - Do not allow rollers to stand at any time.
  - Prevent damage.
  - Lines and levels: With regular falls to prevent ponding.
  - Overall texture: Smooth, even and free from dragging, tearing or segregation.
  - State on completion: Clean.

320 ADVERSE WEATHER
- Frozen materials: Do not use.
- Suspend laying:
  - During freezing conditions
  - If the air temperature reaches 0°C, or in calm dry conditions -3°C, on a falling thermometer.
  - Hot rolled asphalt: During periods of continuous or heavy rain or if there is standing water on the base.

330 LEVELS
- Permissible deviation from the required levels, falls and cambers (maximum): In accordance with BS 594987, clause 5.2.

340 FLATNESS/ SURFACE REGULARITY
- Deviation of surface: Where appropriate in relation to the geometry of the surface, the variation in gap under a 3 m straightedge placed anywhere on the surface to be not more than:
  - Base: Hand laid, 25 mm and machine laid, 25 mm.
  - Binder course: Hand laid, 13 mm and machine laid, 13 mm.
  - Surface course: Hand laid, 10 mm and machine laid, 7 mm.
  - Where a straightedge cannot be used the surface must be of a comparable standard of accuracy when judged by eye.

351 CONTRACTOR'S USE OF PAVEMENTS
- Preparation for final surfacing:
  - Timing: Defer laying until as late as practicable.
  - Immediately before laying final surfacing: Clean and make good the base/ binder course. Allow to dry.
  - Adhesion: Tack coat to BS 434-1 or BS EN 13808.
    Application rate: As manufacturer's recommendation.
    Accuracy: Uniform, without puddles.
  - Finishing: Allow emulsion to break completely before applying surface.
COMPLETION

390 DOCUMENTATION

- Standard: BS EN 13108-4.
  - Declaration of conformity: Submit.
- Number of copies: Two.
- Submission: Two weeks prior to date when Contractor expects work to be complete.
Q25 Slab/ brick/ sett/ cobble pavings

To be read with Preliminaries/ General conditions.

GENERAL

120 CONCRETE FLAG PAVING SYSTEM TO PEDESTRIAN AREAS - SEE DRAWING FOR LOCATIONS
- Subgrade improvement layer: Not required.
- Compacted thickness: Not applicable.
- Granular sub-base: Highways Agency Type 1 unbound mixture, as section Q20.
- Compacted thickness: 150 mm.
- Base: Not required.
- Thickness: Not required.
- Laying course: Site mixed mortar.
- Accessories: None.
- Paving units: Concrete flags and tactile concrete flags.
- Jointing: Site mixed mortar.
- Bond: Straight line.
- Accessories: Kerbs and edgings as section Q10.

PRODUCTS

305 GRANULAR MATERIAL FOR LAYER OVER EXISTING BASES
- Material: Highways Agency Type 1 unbound mixture, as section Q20.

370 CEMENT FOR SITE MIXED MORTAR GENERALLY
- Standard: As section Z21.

375 SAND/ FINE AGGREGATE FOR SITE MIXED MORTAR GENERALLY
- Standard: To BS EN 12620, designations:
- Flag and slab paving laying course: Contractor's choice.
- Flag and slab paving jointing: Contractor's choice.
- Concrete sett paving laying course and jointing: Not applicable.
- Rigid brick paving laying course and jointing: Not applicable.
- Precast concrete and grass or gravel paving: Not applicable.
EXECUTION

620 ADVERSE WEATHER
- General:
  - Temperature: Do not lay or joint paving if the temperature is below 3°C on a falling thermometer or below 1°C on a rising thermometer.
  - Frozen materials: Do not use. Do not lay bedding on frozen or frost covered bases.
- Paving with mortar joints and/or bedding:
  - Protect from frost damage, rapid drying out and saturation until mortar has hardened.
- Paving laid and jointed in sand:
  - Stockpiled bedding sand: Protect from saturation.
  - Exposed areas of sand bedding and uncompacted areas of sand bedded paving: Protect from heavy rainfall.
  - Saturated sand bedding: Remove and replace, or allow to dry before proceeding.
  - Laying dry-sand jointed paving in damp conditions: Brush in as much jointing sand as possible. Minimize site traffic over paving. As soon as paving is dry, top up joints and complete compaction.

625 LAYING PAVINGS - GENERAL
- Appearance: Smooth and even with regular joints and accurate to line, level and profile.
- Falls: To prevent ponding.
- Bedding of paving units: Firm so that rocking or subsidence does not occur or develop.
  - Bedding/Laying course: Consistently and accurately graded, spread and compacted to produce uniform thickness and support for paving units.
- Slopes: Lay paving units upwards from the bottom of slopes.
- Paving units: Free of mortar and sand stains.
- Cutting: Cut units cleanly and accurately, without spalling, to give neat junctions with edgings and adjoining finishes.

630 LEVELS OF PAVING
- Permissible deviation from specified levels:
  - Generally: ± 6 mm.
- Height of finished paving above features:
  - At gullies: +6 to +10 mm.
  - At drainage channels and kerbs: +3 to +6 mm.

635 REGULARITY OF PAVED SURFACES
- Maximum variation in gap under a 3 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface):
  - Precast concrete paving blocks and clay pavers for flexible pavements: 10 mm.
  - Precast concrete flags or natural stone slabs: 3 mm.
- Difference in level between adjacent paving units (maximum): 2 mm.
- Sudden irregularities: Not permitted.

640 COLOUR BANDING
- General: Unless premixed by manufacturer, select from at least 3 separate packs in rotation to avoid colour banding.
645 PROTECTION
• Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
• Materials storage: Do not overload pavings with stacks of materials.
• Handling: Do not damage paving unit corners, arrises, or previously laid paving.
• Mortar bedded pavings: Keep free from traffic after laying:
  - Pedestrian traffic (minimum): 4 days.
  - Vehicular traffic (minimum): 10 days.
• Access: Restrict access to paved areas to prevent damage from site traffic and plant.

650 CEMENTITIOUS BASES AND SUB-BASES
• General: Protect from moisture loss, if not covered by another pavement course within 2 hours of completion.

655 CONDITION OF SUB-BASES/ BASES BEFORE SPREADING LAYING COURSE
• Trenches and excavation of soft or loose spots in subgrade: Fill and thoroughly compact.
• Granular surfaces: Lay and compact so as to be sound, clean, smooth and close-textured enough to prevent migration of bedding/ laying course materials into the sub-base during compaction and use, free from movement under compaction plant and free from compaction ridges, cracks and loose material.
• Prepared existing and new bound bases (roadbases): Sound, clean, free from rutting or major cracking. Remove sharp stones, projections and debris.
• Sub-base/ Roadbase level tolerances: To BS 7533-7, Annex A.
• Levels and falls: Accurate and within the specified tolerances.
• Drainage outlets: Within 0-10 mm of the required finished level.
• Features in sand bedded paving (including mortar bedded restraints and drainage ironwork): Complete to required levels; adequately bed and haunch in mortar.
• Sub-bases containing cement/ hydraulic binder: Cure for minimum times specified in BS 7533-4.

695 SITE MIXED MORTAR - LAYING COURSE & JOINTING FOR CONCRETE FLAG PAVING
• Mix: 1:3 cement:sand.
• Consistency: Workable.
• Admixtures: None.

715 LAYING FLAG AND SLAB PAVING - MORTAR LAYING COURSE AND JOINTING
• Standard generally: In accordance with BS 7533-4.
• Flag installation and cutting: To Interpave ‘Concrete flag paving’.
• Laying course:
  - Nominal thickness: 50 mm before laying paving slabs.
• Laying and jointing: Contractor’s choice.
• Joint width (nominal): 5-10 mm.

COMPLETION
915 COMPLETION OF PAVING WITH DRY SAND OR FINE AGGREGATE FILLED JOINTS
• Sand dressing: Leave a thin layer of dry jointing sand over the paving, sweep clean before practical completion.
• Final compaction of the surface course: In accordance with BS 7533-3.
• Vacuum cleaning machines: Not allowed.
Q28 Topsoil and soil ameliorants

To be read with Preliminaries/ General conditions.

PRODUCTS

300 PREPARATION MATERIALS GENERALLY
- Purity: Free of pests and disease.
- Foreign matter: On visual inspection, free of fragments and roots of aggressive weeds, sticks, straw, subsoil, pieces of brick, concrete, glass, wire, large lumps of clay or vegetation, and the like.
- Contamination: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
  - Corrosive, explosive or flammable.
  - Hazardous to human or animal life.
  - Detrimental to healthy plant growth.
- Subsoil: In areas to receive topsoil or planting media, do not use subsoil contaminated with the above materials.
- Objectionable odour: None.
- Give notice: If any evidence or symptoms of soil contamination are discovered on the site or in topsoil or planting media to be imported.

305 PERMITTED MATERIALS
- Materials: Bark.
- Give notice: before ordering or using.
- Declaration of compliance: Not required.

310 MATERIALS NOT PERMITTED
- Materials: Peat; Products containing peat; River and canal dredgings.

315 IMPORTED TOPSOIL TO BS 3882
- Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
- Standard: To BS 3882.
- Classification: Multipurpose.
  - Grade: Within the parameters of 'sandy loam' textural class.
- Source: Contractor's choice.
  - Product reference: Contractor's choice.

EXECUTION

620 IMPORTING TOPSOIL
- Give notice: Before stripping topsoil for transfer to site.
  - Notice period: 5 days.

630 DOCUMENTATION FOR IMPORTED TOPSOIL FOR SHRUB BEDS
- Timing: Submit at handover.
- Contents:
  - Full description of all soil components.
  - Record of source for all soil components.
  - Record drawings showing the location and depth of all soils by type and grade.
  - Declaration of analysis: in accordance with BS 3882, Annex E.
- Number of copies: 2.
650 NOTICE
  • Give notice before:
    - Setting out.
    - Spreading topsoil.
    - Applying herbicide.
    - Applying fertilizer.
    - Visiting site during maintenance period.
  • Period of notice: Two working days.

655 MECHANICAL TOOLS
  • Restrictions: Do not use within 100 mm of tree and plant stems.

660 GRADING SUBSOIL
  • General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
  • Loosening:
    - Light and non-cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
    - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
    - Rock and chalk subgrades: Lightly scarify to promote free drainage.
  • Areas of thicker topsoil: Excavate locally.
  • Avoid over compaction.

665 SUBSOIL SURFACE PREPARATION
  • General: Excavate and/ or place fill to required profiles and levels, as section D20.
  • Loosening:
    - Light and non-cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
    - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
    - Rock and chalk subgrades: Lightly scarify to promote free drainage.
  • Stones: Immediately before spreading topsoil, remove stones larger than 50 mm.
  • Remove from site: Arisings, contaminants and debris and Builders rubble.

680 SURPLUS TOPSOIL TO BE RETAINED
  • Generally: Spread and level on site:
    - Locations: Any areas where topsoil is required for new planting.
    - Protected areas: Do not raise soil level within root spread of trees that are to be retained.

685 SURPLUS MATERIALS TO BE REMOVED
  • Topsoil: Remove from site topsoil remaining after completion of all landscaping work.
  • Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings and other arisings: Remove.

690 TOPSOIL STORAGE HEAPS
  • Location: To be agreed.
  • Height (maximum): To be agreed.
  • Width (maximum): To be agreed.
    - Formation: Loose tip and shape from the side only, without running machinery on the heap at any time.
  • Protection:
    - Do not place any other material on top of storage heaps.
    - Do not allow construction plant to pass over storage heaps.
    - Prevent compaction and contamination, by fencing and covering as appropriate.
700 GRADING OF TOPSOIL
  • Topsoil condition: Reasonably dry and workable.
  • Contours: Smooth and flowing, with falls for adequate drainage.
  - Hollows and ridges: Not permitted.
  • Finished levels after settlement: 25 mm above adjoining paving, kerbs, manholes etc.
  • Give notice: If required levels cannot be achieved by movement of existing soil.

705 HANDLING TOPSOIL
  • Aggressive weeds: Give notice and obtain instructions before moving topsoil.
  • Plant: Select and use plant to minimize disturbance, trafficking and compaction.
  • Contamination: Do not mix topsoil with:
    - Subsoil, stone, hardcore, rubbish or material from demolition work.
    - Other grades of topsoil.
  • Multiple handling: Keep to a minimum. Use or stockpile topsoil immediately after stripping.
  • Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall or when it is wetter than the plastic limit less 3%, to BS 1377-2.

710 SPREADING TOPSOIL
  • Temporary roads/ surfacing: Remove before spreading topsoil.
  • Layers:
    - Depth (maximum): 150 mm.
    - Gently firm each layer before spreading the next.
  • Depths after firming and settlement (minimum): Grass areas: 150 mm. Planted areas: 450 mm.
  • Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

715 LOOSE TIPPING OF TOPSOIL
  • General: Do not firm, consolidate or compact topsoil when laying. Tip and grade to approximate levels in one operation with minimum of trafficking by plant.

720 FINISHED LEVELS OF TOPSOIL AFTER SETTLEMENT
  • Above adjoining paving or kerbs: 25 mm.
  • Below dpc of adjoining buildings: Not less than 150 mm.
  • Shrub areas: Higher than adjoining grass areas by 75 mm.
  • Within root spread of existing trees: Unchanged.
  • Adjoining soil areas: Marry in.
  • Thickness of turf or mulch: Included.
Q40 Fencing

To be read with Preliminaries/ General conditions.

FENCING SYSTEMS

125 OPEN MESH STEEL PANEL GENERAL PURPOSE FENCING
- Manufacturer: BETAFANCE.
- Product reference: Nylofor 3-M.
- Standard: To BS 1722-14, category 1.
- Height: 1800 mm.
- Mesh and wire: Welded mesh, 200 mm vertical x 50 mm horizontal x 5 mm vertical wire diameter x 7 mm horizontal wire diameter, plastics coated green to BS 1722-16.
- Posts: Galvanized rectangular hollow section, green plastics coated.
- Maximum centres of posts: 2525mm.
- Method of setting posts: 300 mm square x 600 mm deep holes filled to not less than half the depth with concrete.
- Bottom of fencing: Finish flush with ground level.
- Accessories: Single leaf entrance gate at pedestrian entrance.
- Conformity: Submit manufacturer's and installer's certificates, to BS 1722-14.

310 CLOSE BOARDED FENCING
- Manufacturer: Contractor's choice.
- Product reference: Contractor's choice.
- Standard: To BS 1722-5, type PCR 150.
- Height: 1800 mm.
- Wood: Contractor's choice.
- Treatment: To provide a 15 year service life.
- Finish: Exterior wood stain, as section M60.
- Boards/ rails: Softwood feather edged boards on arris rails.
- Posts: Concrete.
- Centres of posts (maximum): 2.4 m.
- Method of setting posts: 300 mm square or round holes, 600 mm deep filled to not less than half the depth with concrete.
- Accessories: Concrete gravel board.
- Conformity: Submit manufacturer's and installer's certificates, to BS 1722-5.

330 WOODEN PALISADE FENCING
- Manufacturer: Contractor's choice.
- Product reference: Contractor's choice.
- Standard: To BS 1722-5, type WPW 120.
- Height: 1200 mm.
- Wood: Sweet chestnut - PAR timber.
- Treatment: Contractor's choice.
- Finish: None.
- Palisades and rails: 75 x 22 mm softwood with square tops and rectangular rails - to match existing fencing to rear school 'eco-garden'.
- Posts: Wood @ 2250 mm max crs.
- Centres of posts (maximum): 3 m.
- Method of setting posts: 300 mm square or round holes, 600 mm deep filled to not less than half the depth with concrete.
- Accessories: Gates as per clause 550.
- Conformity: Submit manufacturer's and installer's certificates, to BS 1722-5.
GATES, POSTS AND STILES

550 WOOD GATES AND POSTS
- Manufacturer: Contractor's choice.
- Standard: To BS 5709.
- Wood: Sweet chestnut - PAR timber.
- Treatment: As section Z12 and Wood Protection Association Commodity Specification C3.
  - Type: Contractor's choice.
  - Finish: None.
- Adhesive: Synthetic resin to BS EN 301, type 1.
- Workmanship: As section Z10.
- Fittings: Two hook and band hinges, return spring and a padbolt with padlock.
  - Finish: Polyester powder coated, as section Z31, black.
- Method of fixing: Concrete foundation, 450 mm square x 600 mm deep.
- Accessories: None.

EXECUTION

710 INSTALLATION GENERALLY
- Set out and erect:
  - Alignment: Straight lines or smoothly flowing curves.
  - Tops of posts: Following profile of the ground.
  - Setting posts: Rigid, plumb and to specified depth, or greater where necessary to ensure adequate support.
  - Fixings: All components securely fixed.

720 SETTING POSTS IN CONCRETE
- Standard: To BS 8500-2.
- Mix: Designated concrete not less than GEN1 or Standard prescribed concrete not less than ST2.
- Alternative mix for small quantities: 50 kg Portland cement to 150 kg fine aggregate to 250 kg 20 mm nominal maximum size coarse aggregate, medium workability.
- Admixtures: Do not use.
- Holes: Excavate neatly and with vertical sides.
- Filling: Position post/strut and fill hole with concrete to not less than the specified depth, well rammed as filling proceeds and consolidated.
- Backfilling of holes not completely filled with concrete: Excavated material, well rammed and consolidated.

730 EXPOSED CONCRETE FOUNDATIONS
- Filling: Compact until air bubbles cease to appear on the upper surface.
- Finishing: Weathered to shed water and trowelled smooth.

750 DRIVEN POSTS
- Damage to heads: Minimize.
  - Repair: Neatly finish post tops after installation.

760 NAILED WOOD RAILS
- Length (minimum): Two bays, with joints in adjacent rails staggered.
- Fixing: Nail each length of rail to each post with two 100 mm galvanized nails.
- Rails with split ends: Replace.
770 SITE CUTTING OF WOOD
  • General: Kept to a minimum.
  • Below or near ground level: Cutting prohibited.
  • Treatment of surfaces exposed by minor cutting and drilling: Two flood coats of solution recommended for the purpose by main treatment solution manufacturer.

780 MAKING GOOD GALVANIZED SURFACES
  • Treatment of minor damage (including on fasteners and fittings): Low melting point zinc alloy repair rods or powders made for this purpose, or at least two coats of zinc-rich paint to BS 4652.
  • Thickness: Apply sufficient material to provide a zinc coating at least equal in thickness to the original layer.

790 SITE PAINTING
  • Timing: Prepare surfaces and apply finishes as soon as possible after fixing.

COMPLETION

910 CLEANING
  • General: Leave the works in a clean, tidy condition.
  • Surfaces: Clean immediately before handover.

920 FIXINGS
  • All components: Tighten.
    - Timing: Before handover.

930 GATES
  • Hinges, latches and closers: Adjust to provide smooth operation. Lubricate where necessary.
    - Timing: Before handover.
R11 Above ground foul drainage systems

To be read with Preliminaries/ General conditions.

GENERAL

115 ABOVE GROUND FOUL DRAINAGE SYSTEM
• Sanitary and floor drainage outlets: Sanitary fittings as section N13.
• Waste pipework: ABS or MUPVC or PVC-C.
• Discharge stack and branch pipework: PVC-U.
• Separate ventilating pipework: PVC-U.
• Accessories: Air admittance valves.
• Disposal: To below ground drainage as section R12.

SYSTEM PERFORMANCE

210 DESIGN
• Design: Complete the design of the above ground foul drainage system.
• Standards: To BS EN 12056-1 and BS EN 12056-2, and in accordance with BS EN 12056-2 National Annexes NA-NG.
  - System type to BS EN 12056-2: System III.
• Proposals: Submit drawings, technical information, calculations and manufacturers’ literature.

220 COLLECTION AND DISTRIBUTION OF FOUL WATER
• General: Quick, quiet and complete, self-cleansing in normal use, without blockage, crossflow, backfall, leakage, odours, noise nuisance or risk to health.
• Pressure fluctuations in pipework (maximum): ±38 mm water gauge.
• Water seal retained in traps (minimum): 25 mm.

PRODUCTS

320 ABS PIPEWORK FOR WASTES
• Standard:
  - To BS 5255 and Kitemark certified; or
  - To BS EN 1455-1 and Kitemark certified.
Application area code: B.
  - Opening dimensions of access fittings, design of swept fittings, stand off dimensions of pipe and fitting brackets and requirements for adaptors and plugs: To BS 4514.
• Manufacturer: Marley Plumbing & Drainage. Dickley Lane, Lenham, Maidstone, Kent, ME17 2DE. Tel: 01622 858888. Fax: 01622 858725. Web: www.marley.co.uk Email: marketing@marleypd.com.
  - Product reference: Solvent Waste ABS.
• Nominal sizes: DN 32 / 40/ 50 - to suit application.
• Colour: White where exposed to view.
• Brackets: Plastics pipe clips, colour to match pipes.
  - Fixings: Stainless steel screws.
    Size: 30 x 3.5 mm.
• Accessories: Access fittings.
365  PVC-U PIPEWORK - FOR DISCHARGE STACKS AND BRANCHES

- Standard: To BS EN 1329-1, Kitemark certified.
  - Weather resistance, connectors to WC pans, opening dimensions of access fittings, design of swept fittings, stand off dimensions of pipe and fitting brackets and requirements for adaptors and plugs: To BS 4514.
- Manufacturer: Marley Plumbing & Drainage. Dickley Lane, Lenham, Maidstone, Kent, ME17 2DE. Tel: 01622 858888. Fax: 01622 858725. Web: www.marley.co.uk Email: marketing@marleypd.com.
  - Product reference: Solvent weld - PVC-U.
- Nominal size: DN 110.
- Colour: Black.
- Brackets: Plastics pipe clips, black.
  - Fixings: Stainless steel screws.
  - Size: 30 x 3.5 mm.
- Accessories: Access fittings and plastics cages.

375  AIR ADMITTANCE VALVES

- Standard: To BS EN 12380 or Agrément certified.
- Minimum air flow rate: To BS EN 12056-2.
- Manufacturer: Marley Plumbing & Drainage. Dickley Lane, Lenham, Maidstone, Kent, ME17 2DE. Tel: 01622 858888. Fax: 01622 858725. Web: www.marley.co.uk Email: marketing@marleypd.com.
  - Product reference: SVD 4 - Air admittance valve.

383  INSULATION TO INTERNAL PIPELINES

- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.
- Material: Mineral fibre insulation, packed into all internal vertical and horizontal pipe boxings containing 110 mm dia. drainage pipework.
- Thermal conductivity (maximum): Not applicable.
- Thickness: 100 mm roll packed into service boxings completely wrapping around pipework.
- Fire performance: Not required.

390  RODDING EYES INTERNALLY

- Manufacturer: Marley Plumbing & Drainage. Dickley Lane, Lenham, Maidstone, Kent, ME17 2DE. Tel: 01622 858888. Fax: 01622 858725. Web: www.marley.co.uk Email: marketing@marleypd.com.
  - Product reference: Contractor's choice.
- Body material: PVC-U.
- Cover type: Flush.
- Cover material: PVC-U.

395  RODDING EYES EXTERNALLY

- Manufacturer: Marley Plumbing & Drainage. Dickley Lane, Lenham, Maidstone, Kent, ME17 2DE. Tel: 01622 858888. Fax: 01622 858725. Web: www.marley.co.uk Email: marketing@marleypd.com.
  - Product reference: Contractor's choice.
- Body material: PVC-U.
- Cover type: Flush.
- Cover material: PVC-U.
EXECUTION

601 INSTALLATION GENERALLY
- Standard: To BS EN 12056-5.
- Components: From the same manufacturer for each type of pipework.
- Electrolytic corrosion: Avoid contact between dissimilar metals where corrosion may occur.
- Plastics and galvanized steel pipes: Do not bend.
- Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
- Concealed or inaccessible surfaces: Decorate before starting work specified in this section.
- Protection:
  - Purpose made temporary caps: Fit to prevent ingress of debris.
  - Access covers, cleaning eyes and blanking plates: Fit as the work proceeds.

605 PIPE ROUTES
- General: The shortest practical, with as few bends as possible.
  - Bends in wet portion of soil stacks: Not permitted.
  - Routes not shown on drawings: Submit proposals before commencing work.

610 FIXING PIPEWORK
- Pipework: Fix securely plumb and/ or true to line. Fix discharge stack pipes at or close below socket collar or coupling.
- Branches and low gradient sections: Fix with uniform and adequate falls to drain efficiently.
- Externally socketed pipes and fittings: Fix with sockets facing upstream.
- Additional supports: Provide as necessary to support junctions and changes in direction.
- Vertical pipes: Provide a load bearing support not less than every storey level. Tighten fixings as work proceeds so that every storey is self supporting.
- Wall and floor penetrations: Isolate pipework from structure, e.g. with pipe sleeves.
  - Masking plates: Fix at penetrations if visible in the finished work.
- Expansion joint sockets: Fix rigidly to the building.
- Fixings: Allow the pipe to slide.

615 FIXING VERTICAL PIPEWORK - PVC-U
- Bracket fixings: Plugged and screwed into masonry.
- Distance between bracket fixing centres (maximum): 1800 mm.

620 FIXING LOW GRADIENT PIPEWORK - PVC-U
- Bracket fixings: Plugged and screwed into masonry.
- Distance between bracket fixing centres (maximum): 900 mm.

630 JOINTING PIPEWORK - GENERALLY
- General: Joint with materials, fittings and techniques that will make effective and durable connections.
- Jointing differing pipework systems: With adaptors intended for the purpose.
- Cut ends of pipes: Clean and square. Remove burrs and swarf. Chamfer pipe ends before inserting into ring seal sockets.
- Jointing or mating surfaces: Clean and, where necessary, lubricate immediately before assembly.
- Junctions: Form with fittings intended for the purpose.
- Jointing material: Do not allow it to project into bore of pipes and fittings.
- Surplus flux, solvent jointing materials and cement: Remove from joints.

660 JOINTING PIPEWORK - ABS, MUPVC, PVC-C AND PVC-U
- Jointing: Solvent welded with lubricated ring seal joints at maximum 1800 mm spacing.
680 ELECTRICAL CONTINUITY
• Joints in metal pipes with flexible couplings: Make with clips (or suitable standard pipe couplings) supplied for earth bonding by pipework manufacturer to ensure electrical continuity.

685 IDENTIFICATION OF INTERNAL FOUL DRAINAGE PIPEWORK
• Markings: To BS 1710.
  - Type: Black bands, with arrows to indicate direction of flow.
  - Wording: White lettering ‘FOUL DRAINAGE’ on a black background.
• Type: Integral lettering on pipe wall, self-adhesive bands or identification clips.
• Locations: At 500 mm centres, junctions and both sides of slabs, valves, appliances, bulkheads and wall penetrations.

695 DISCHARGE AND VENTILATING STACKS
• Terminations: Perforated cover or cage that does not restrict airflow.
  - Material: Plastics, as discharge stack.

700 INSTALLING AIR ADMITTANCE VALVES
• Position: Vertical, above flood level of highest appliance served and clear of insulation materials (other than the manufacturer's insulating cover).
• Connection to discharge stack: Allow removal for rodding, e.g. ring seal.
• Roof spaces and other unheated locations: Fit manufacturer's insulating cover.

703 FIXING INSULATION TO INTERNAL PIPELINES
• Fixing: Secure and neat. Provide continuity at supports and leave no gaps. Fix split pipe insulation with the split on ‘blind’ side of pipeline.
  - Method: Mechanical fasteners.
• Timing: Do not fit insulation until completion of pipe airtightness or leakage testing.

705 ACCESS FOR TESTING AND MAINTENANCE
• General: Install pipework with adequate clearance to permit testing, cleaning and maintenance, including painting where necessary.
• Access fittings and rodding eyes: Position to avoid obstruction.

COMPLETION

900 TESTING GENERALLY
• Dates for testing: Give notice.
  - Period of notice (minimum): 5 working days.
• Preparation:
  - Pipework: Securely fixed and free from obstruction and debris.
  - Traps: Filled with clean water.
• Testing:
  - Supply clean water, assistance and apparatus.
  - Do not use smoke to trace leaks.
• Records: Submit a record of tests.

905 PIPEWORK AIRTIGHTNESS TEST
• Preparation:
  - Open ends of pipework: Temporarily seal using plugs.
  - Test apparatus: Connect a ‘U’ tube water gauge and air pump to pipework via a plug or through trap of an appliance.
• Testing: Pump air into pipework until gauge registers 38 mm.
• Required performance: Pressure of 38 mm is to be maintained without loss for at least three minutes.
915  PREHANDOVER CHECKS
    • Temporary caps: Remove.
    • Permanent blanking caps, access covers, rodding eyes, floor gratings and the like: Secure complete with fixings.

920  SUBMITTALS
    • Manufacturer's instructions for grease traps: Handover at completion.
R12 Below ground drainage systems

To be read with Preliminaries/ General conditions.

GENERAL

110 BELOW GROUND DRAINAGE SYSTEMS GENERALLY
- Surface water and rainwater drainage sources: One piece gullies and covers and rainwater downpipes (nonsiphonic).
- Foul drainage sources: Discharge stack and branch pipes.
- Land drainage sources: None.
- Pressure relief drainage sources: None.
- Pipes, bends and junctions: PVC-U - solid wall.
  - Accessories: Access points, flexible couplings and rodding points.
- Manholes, inspection chambers, traps, and separators: Inspection chambers - plastics.
  - Accessories: Manhole channels and branches - preformed plastics.
- Disposal: To sewers.

SYSTEM PERFORMANCE

PRODUCTS

311 ADAPTORS TO CLAY DRAINAGE
- Material and standard: Polypropylene to BS EN 295-1 and Kitemark certified.
- Type: DN 100 discharge stack to DN 100 clay.
- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.

312 ADAPTORS TO PLASTICS DRAINAGE
- Material and standard: Plastics to BS 4660 and Kitemark certified or to BS EN 1401-1 and Kitemark certified.
- Type: DN 100 discharge stack to DN 100 plastics.
- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.
315 ONE PIECE GULLIES AND COVERS Where required

- Standards: To BS EN 1253-1, -2, -3, -4 and -5; or
  - Cast iron: To BS 437 and Kitemark certified, or Agrément certified.
  - Clay: To BS EN 295-1 and Kitemark certified, or Agrément certified.
  - Concrete: To BS 5911-6 and Kitemark certified, or Agrément certified.
  - Plastics: To BS 4660 and Kitemark certified, or Agrément certified.
  - Polypropylene: To BS EN 1852-1.
- Material: Clay.
- Manufacturer: Hepworth. Wavin Registered Office, Hazlehead, Crow Edge, Sheffield, South Yorkshire, S36 4HG. Tel: 01709 856300. Fax: 01709 856301. Web: www.hepworth.co.uk Email: info@hepworth.co.uk.
- Sizes: 585 mm deep x 225 mm dia.
- Outlet sizes: DN 100 and DN 150.
- Covers: Hinged & bolted grating.
  - Product reference: Integral to RPG6 Yard Gully.
  - Type: Hinged & bolted grating.
  - Material: Ductile cast iron.
  - Sizes: 290 x 290 mm.
  - Loading grades to BS EN 124: D400.
- Silt buckets: None.
  - Product reference: N/A.

317 COMPOSITE GULLIES - SINK WASTE

- Standards: To BS EN 1253-1, -2, -3, -4 and -5; or
  - Cast iron: To BS 437 and Kitemark certified, or Agrément certified.
  - Clay: To BS EN 295-1 and Kitemark certified, or Agrément certified.
  - Plastics: To BS 4660 and Kitemark certified, or Agrément certified.
  - Polypropylene: To BS EN 1852-1.
- Material: Plastics.
- Manufacturer: Marley Plumbing & Drainage. Dickley Lane, Lenham, Maidstone, Kent, ME17 2DE. Tel: 01622 858888. Fax: 01622 858725. Web: www.marley.co.uk Email: marketing@marleypd.com.
  - Traps: None.
  - Raising pieces: None.
  - Heights: N/A.
- Hoppers:
  - Product reference: UG47 - Rectangular hopper.
- Covers:
  - Product reference: Integral to UG47.
  - Type: Loose grating with cut-out for rainwater or waste pipes.
  - Material: Plastics.
  - Sizes: 150 x 150 mm.
  - Loading grades to BS EN 124: A15.
- Silt buckets: None.
  - Product reference: N/A.

329 PIPES, BENDS AND JUNCTIONS - SUPPLY

- Pipes and fittings: From same manufacturer for each pipeline.
346  PIPES, BENDS AND JUNCTIONS - PVC-U - SOLID WALL - SURFACE WATER DRAINAGE
- Standard: BS EN 1401-1 with flexible joints.
  - Class: Contractor's choice.
- Manufacturer: Marley Plumbing & Drainage. Dickley Lane, Lenham, Maidstone, Kent, ME17 2DE. Tel: 01622 858888. Fax: 01622 858725. Web: www.marley.co.uk Email: marketing@marleypd.com.
  - Product reference: Contractor's choice.
- Recycled content: None permitted.
- Sizes: DN 100.
- Application area code: UD.

347  PIPES, BENDS AND JUNCTIONS - PVC-U - SOLID WALL - SURFACE WATER DRAINAGE
- Standard: BS EN 1401-1 with flexible joints.
  - Class: Contractor's choice.
- Manufacturer: Marley Plumbing & Drainage. Dickley Lane, Lenham, Maidstone, Kent, ME17 2DE. Tel: 01622 858888. Fax: 01622 858725. Web: www.marley.co.uk Email: marketing@marleypd.com.
  - Product reference: Contractor's choice.
- Recycled content: None permitted.
- Sizes: DN 100 and DN 150.
- Application area code: UD.

352  ACCESS POINTS - PLASTICS FOUL WATER DRAINAGE
- Standard: To BS 4660 and Kitemark certified, to BS EN 13589-1, or Agrément certified.
- Manufacturer: Marley Plumbing & Drainage. Dickley Lane, Lenham, Maidstone, Kent, ME17 2DE. Tel: 01622 858888. Fax: 01622 858725. Web: www.marley.co.uk Email: marketing@marleypd.com.
- Nominal diameter: 250mm.
- Bases:
  - Product reference: UCC7 - 250mm dia. inspection chamber.
- Raising pieces:
  - Product reference: Contractor's choice.
  - Heights: N/A.
- Access covers and frames:
  - Product reference: UCL2 - 250 mm dia. plastic cover and frame.
  - Loading grades to BS EN 124: B125.

359  FLEXIBLE COUPLINGS
- Standard: To BS EN 295-4 or WIS 04-41-01 and Kitemark certified, or Agrément certified.
- Manufacturer: Marley Plumbing & Drainage. Dickley Lane, Lenham, Maidstone, Kent, ME17 2DE. Tel: 01622 858888. Fax: 01622 858725. Web: www.marley.co.uk Email: marketing@marleypd.com.
  - Product reference: Contractor's choice.

379  WARNING MARKER TAPES - FOUL DRAINAGE
- Type: Heavy gauge polyethylene.
- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.
- Colour: Red with black lettering.
- Widths: 150 mm.
- Message: FOUL SEWER BELOW.
- Wire detection aid: Not required.
380 WARNING MARKER TAPES - SURFACE WATER DRAINAGE

- Type: Heavy gauge polyethylene.
- Manufacturer: Contractor’s choice.
- Product reference: Contractor’s choice.
- Colour: Red with black lettering.
- Widths: 150 mm.
- Message: SURFACE WATER DRAIN BELOW.
- Wire detection aid: Not required.

401 INSPECTION CHAMBERS - PLASTICS - FOUL & SURFACE WATER DRAINAGE

- Standard: To BS 7158 or BS EN 13598-1, or Agrément certified.
- Diameter: 450 mm.
- Manufacturer: Marley Plumbing & Drainage. Dickley Lane, Lenham, Maidstone, Kent, ME17 2DE. Tel: 01622 858888. Fax: 01622 858725. Web: www.marley.co.uk Email: marketing@marleypd.com.
  - Shaft units: Product reference: UCR2 - Chamber Riser.
  - Loading grades to BS EN 124: B125.

471 ACCESS COVERS AND FRAMES - FOUL & SURFACE WATER MANHOLES

- Standard: To BS EN 124.
- Types: Single seal.
- Manufacturer: Clark-Drain Ltd. Station Road, Yaxley, Peterborough, Cambridgeshire, PE7 3EQ. Tel: 01733 765317. Fax: 01733 246923. Web: www.clark-drain.com Email: sales@clark-drain.com.
  - Product reference: CLKS 761 KMB.
  - Materials: Ductile cast iron.
  - Finishes: Black bitumen painted.
  - Sizes: 550 x 550 mm.
  - Loading grades to BS EN 124: B125.
  - Edging trims: Not required.
  - Accessories: None.

487 CONCRETE (ADOPTABLE MANHOLE BENCHINGS AND SURROUNDS)

- Standard:
  - England and Wales, Northern Ireland: To WRc ‘Sewers for Adoption’.
  - Scotland: To WRc ‘Sewers for Scotland’.
- Concrete: In situ.

489 CONCRETE (ADOPTABLE MANHOLE BENCHING TOPPING)

- Standard:
  - England and Wales, Northern Ireland: To WRc ‘Sewers for Adoption’.
  - Scotland: To WRc ‘Sewers for Scotland’.
- Concrete: High strength.

496 GRANULAR MATERIAL – NATURAL

- Standard: To BS EN 12620.
- Recycled content: Contractor’s choice.
- Size: Dependent on location – see Execution clauses in this section, and in sections R16, R17 and R18, if used.
GRANULAR SUB-BASE MATERIAL
- Standard: To Highways Agency Volume 1, 'Specification for Highway Works', Type 1 Unbound mixtures for sub-base.
- Recycled content: Contractor's choice.

EXECUTION

EXISTING DRAINS
- Setting out: Before starting work, check invert levels and positions of existing drains, sewers, inspection chambers and manholes against drawings. Report discrepancies.
- Protection: Protect existing drains to be retained and maintain normal operation if in use.

EXCAVATED MATERIAL
- Turf, topsoil, hardcore, etc: Set aside for use in reinstatement.

SELECTED FILL FOR BACKFILLING
- Selected fill: As-dug material, free from vegetable matter, rubbish, frozen soil and material retained on a 40 mm sieve.
  - Compaction: By hand in 100 mm layers.

LOWER PART OF TRENCH – GENERAL
- Trench up to 300 mm above crown of pipe: Vertical sides, width as small as practicable.
  - Width (minimum): External diameter of pipe plus 300 mm.

LOWER PART OF TRENCH - TRANSITION DEPTH
- Trench widths up to 300 mm above crown of pipe (maximum):
  - DN 100 pipelines more than 6.0 m deep: 600 mm.
  - DN 150 pipelines more than 5.4 m deep: 700 mm.
  - DN 225 pipelines more than 4.0 m deep: 800 mm.
  - DN 300 pipelines more than 2.9 m deep: 900 mm.

TYPE OF SUBSOIL
- General: Where type of subsoil at level of crown of pipe differs from that stated for the type of bedding, surround or support, give notice.

FORMATION FOR BEDDINGS
- Timing: Excavate to formation immediately before laying beddings or pipes.
- Mud, rock projections, boulders and hard spots: Remove. Replace with consolidated bedding material.
- Local soft spots: Harden by tamping in bedding material.
- Inspection of excavated formations: Give notice.

PIPES AT DIFFERENT LEVELS IN COMMON TRENCH
- Subtrench: Permissible provided soil of step is stable and unlikely to break away.
  - Subtrench not permissible: Trench depth as required for lower pipe. Increase thickness of bedding to upper pipe as necessary.
- Lower pipe: Backfill with compacted granular material to at least half way up higher pipe.
- Clear horizontal distance between pipes (minimum):
  - Pipes up to DN 700: 350 mm.
  - Pipes exceeding DN 700: 500 mm.
657  CLASS F BEDDING TO PIPES, BENDS AND JUNCTIONS

- Type of subsoil: not known.
- Granular material: Contractor's choice.
  - Pipe sizes DN 100 and DN 150: Size 4/10.
  - Pipe sizes DN 225 and DN 300: Size 4/10 or 10/20.
  - Pipe sizes DN 600 and above: Size 10/20 or 20/40.
- Bedding:
  - Material: Granular, compacted over full width of trench.
  - Thickness (minimum): 50 mm for sleeve jointed pipes, 100 mm for socket jointed pipes. Where trench bottom is uneven, increase thickness by 100 mm.
- Pipes: Dig slightly into bedding, rest uniformly on barrels and adjust to line and gradient.
- Initial testing before backfilling: Not required.
- Backfilling:
  - Material: Protective cushion of selected fill.
  - Depth: 150 mm (250 mm for adoptable sewers) above crown of pipe.
  - Compaction: By hand in 100 mm layers.

667  CLASS S SURROUND TO PIPES, BENDS AND JUNCTIONS

- Type of subsoil: not known.
- Trench width up to 300 mm above crown of pipe (maximum):
  - DN 100 nominal pipe size: 600 mm.
  - DN 150 nominal pipe size: 700 mm.
  - DN 225 nominal pipe size: 800 mm.
  - DN 300 nominal pipe size: 900 mm.
- Granular material: Contractor's choice.
  - Pipe sizes DN 100 and DN 150: Size 4/10.
  - Pipe sizes DN 225 and DN 300: Size 4/10, 10/20 or 4/20.
  - Pipe sizes DN 600 and above: Size 10/20, 20/40, 4/20 or 4/40.
- Bedding:
  - Material: Granular, compacted over full width of trench.
  - Thickness (minimum): 50 mm for sleeve jointed pipes, 100 mm for socket jointed pipes.
  - Where trench bottom is uneven, increase depth by 100 mm.
- Pipes: Dig slightly into bedding, rest uniformly on barrels and adjust to line and gradient.
- Initial testing before placing surround: Not required.
- Surround:
  - Material: Granular.
  - Depth: To 50 mm above crown of pipe.
  - Compaction: By hand in 100 mm layers.
- Backfilling:
  - Material: Protective cushion of selected fill.
  - Depth: 150 mm (250 mm for adoptable sewers) above crown of pipe.
  - Compaction: By hand in 100 mm layers.

680  CONCRETE SURROUND FOR PIPE RUNS NEAR FOUNDATIONS

- Class Z surround: Provide in locations where bottom of trench is lower than bottom of foundation and as follows (horizontal clear distance between nearest edges of foundations and pipe trenches):
  - Trenches less than 1 m from foundations: Top of concrete surround not lower than bottom of foundation.
  - Trenches more than 1 m from foundations: Top of concrete surround not lower than D mm below bottom of foundation, where D mm is horizontal distance of trench from foundation, less 150 mm.
LAYING PIPELINES
- Laying pipes: To true line and regular gradient on even bed for full length of barrel with sockets (if any) facing up the gradient.
- Ingress of debris: Seal exposed ends during construction.
- Timing: Minimize time between laying and testing.

JOINTING PIPELINES
- Connections: Durable, effective and free from leakage.
- Junctions, including to differing pipework systems: With adaptors intended for the purpose.
- Cut ends of pipes: Clean and square. Remove burrs and swarf. Chamfer pipe ends before inserting into ring seal sockets.
- Jointing or mating surfaces: Clean and, where necessary, lubricate immediately before assembly.
- Allowance for movement: Provide and maintain appropriate clearance at ends of spigots as fixing and jointing proceeds.
- Jointing material: Do not allow to project into bore of pipes and fittings.

CONCRETE SURROUND FOR CROSSEOVERS
- Class Z surround: Provide where two pipelines (other than plastics pipes) cross with less than 300 mm separation.
  - Extent, on both pipes: 1 m centred on the crossing point, and beyond as necessary to come within 150 mm of nearest flexible joints.

PIPELINES PASSING THROUGH STRUCTURES
- Pipelines that must be cast in or fixed to structures (including manholes, catchpits and inspection chambers): Provide 600 mm long rocker pipes adjacent to the external face of the structure (or both faces where appropriate, e.g. walls to footings), with flexible joints at both ends.
  - Distance to rocker pipe from structure (maximum): 150 mm.
- Provision for movement for pipelines that need not be cast in or fixed to structures (e.g. walls to footings):
  - Rocker pipes as specified above; or
  - Openings in the structures to give 50 mm minimum clearance around the pipeline. Closely fit a rigid sheet to each side of opening to prevent ingress of fill or vermin.

BENDS AT BASE OF SOIL STACKS
- Type: Large radius.
  - Radius to centreline of pipe (minimum): 800 mm.
- Height of invert of horizontal drain at base of stack below centreline of lowest branch pipe (minimum): 750 mm.
- Bedding: Do not impair flexibility of pipe couplings.
  - Material: Concrete (general).

DIRECT CONNECTION OF GROUND FLOOR WCS TO DRAINS
- Drop from crown of WC trap to invert of drain (maximum): 1.3 m.
- Horizontal distance from the drop to a ventilated drain (maximum): 6 m.

INSTALLING FLEXIBLE COUPLINGS
- Ends of pipes to be joined: Cut cleanly and square.
- Outer surfaces of pipes to be joined: Clean and smooth. Where necessary, e.g. on concrete or iron pipes, smooth out mould lines and/or apply a cement grout over the sealing area.
- Clamping bands: Tighten carefully to make gastight and watertight seals.
CONNECTIONS TO SEWERS
• General: Connect new pipework to existing adopted sewers to the requirements of the
  adopting authority or its agent.

INITIAL TESTING OF PIPELINES
• Before testing:
  - Cement mortar jointing: Leave 24 h.
  - Solvent welded pipelines: Leave 1 h.
• Method: Block open ends of pipelines to be tested and pressurise. Air test short lengths to
  BS EN 1610.

TRENCH SUPPORTS
• Removal of trench supports and other obstacles: Sufficient to permit compacted filling of all
  spaces.

INSTALLING ROOT BARRIERS
• Root barrier installation: Full depth of excavation. Fit closely to trench wall nearest the tree.

BACKFILLING TO PIPELINES
• Backfilling above top of surround or protective cushion: Material excavated from trench,
  compacted in layers 300 mm (maximum) thick.
• Heavy compactors: Do not use before there is 600 mm (total) of material over pipes.

BACKFILLING OVER CONCRETE
• Minimum times from placing concrete:
  - Backfilling generally: 24 h.
  - Heavy compactors and traffic loads: 72 h.

BACKFILLING UNDER ROADS AND PAVINGS
• Backfilling from top of surround or protective cushion up to formation level: Granular sub-
  base material, laid and compacted in 150 mm layers.

FOAMED CONCRETE BACKFILL
• Preparation: Seal off openings in, and ends of, abandoned pipelines and ducts. Seal off
  cavities in or next to the excavation which are not to be filled.
• Backfilling: To British Cement Association 'Foamed concrete - specification for use in the
  reinstatement of openings in highways'.

LAYING WARNING MARKER TAPES
• Installation: During backfilling, lay continuously over pipelines.
• Depth: 300-400 mm.
  - Pipelines deeper than 2 m: Lay an additional tape 600 mm above the top of the pipeline.

TEMPORARY BRIDGES
• Trench bridges: As necessary to prevent construction traffic damaging pipes after
  backfilling.
734 Installing Access Points and Gullies

- **Bedding:**
  - Material: Concrete.
  - Thickness (minimum): 150 mm.

- **Surround:**
  - Material: Concrete (structural).
  - Thickness (minimum): 150 mm.
  - Height: Full height.

- **Backfilling:** Not required.
  - Material: N/A.
  - Compaction: By hand in 100 mm layers.

- **Setting out relative to adjacent construction features:** Square and tightly jointed.

- **Permissible deviation in level of external covers and gratings:** +0 to -6 mm.

- **Raising pieces (clay and concrete units):** Joint with 1:3 cement:sand mortar.

- **Exposed openings:** Fit purpose made temporary caps. Protect from traffic.

741 Installing Inspection Chambers - Plastics

- **Bedding:**
  - Material: Concrete (structural).
  - Thickness (minimum): 150 mm.

- **Surround:**
  - Material: Concrete (structural).
  - Thickness (minimum): 150 mm.

- **Backfilling:** Granular material - manufactured, size 4/10, to 100 mm above crown of pipes, then selected fill.
  - Compaction: By hand in 100 mm layers.

- **Concrete collar:**
  - Material: Concrete (structural).
  - Thickness (minimum): 200 mm.
  - Width (minimum): 200 mm.

- **Seating:** Not required.

755 Jointing Concrete Manhole Chamber Sections

- **Jointing and sealing:** Mortar.

- **Inner joint surface:** Trim surplus jointing material extruded into chamber and point neatly.

757 Laying Conventional Channels, Branches and Benching

- **Main channel:** Bed solid in 1:3 cement:sand mortar.
  - Branches: Connect to channel, preferably at half pipe level, so that discharge flows smoothly in direction of main flow.
  - Branches greater than nominal size 150 mm: Connect the branch soffit level with the main drain soffit.
  - Connecting angles more than 45° to direction of flow: Use three-quarter section channel bends.

- **Benching:**
  - Material: Concrete (general).
  - Profile: Rise vertically from top of main channel to a level not lower than soffit of outlet pipe, then slope upwards at 10% to walls.

- **Topping:**
  - Material: Concrete (structural).
  - Application: Before benching concrete has set, and with dense smooth uniform finish.
LAYING PREFORMED PLASTICS CHANNELS, BRANCHES AND BENCHING

- Main channel: Bed solid in 1:3 cement:sand mortar.
  - Branches: Connect to channel, preferably at half pipe level, so that discharge flows smoothly in direction of main flow.
  - Connecting angles more than 45° to direction of flow: Use three-quarter section channel bends.
- Bedding: 1:3 cement:sand mortar. Use clips or ensure adequate mechanical key.
- Benching:
  - Material: Concrete (general).
  - Profile: Rise vertically from top of main channel to a level not lower than soffit of outlet pipe, then slope upwards at 10% to walls.
  - Topping:
    - Material: Concrete (structural).
    - Application: Before benching concrete has set, and with dense smooth uniform finish.

LAYING SEALED ACCESS FITTINGS, BRANCHES AND BENCHING

- Unused branches: Fit caps.
- Bedding: 1:3 cement:sand mortar.
- Benching:
  - Material: Concrete (general).
  - Profile: 10% fall from manhole walls to component rim.
  - Topping:
    - Material: Concrete (structural).
    - Application: Before benching concrete has set, and with dense smooth uniform finish.

INSTALLING OUTFALLS

- Pipe outflow invert (minimum): Seasonal peak level or 150 mm above normal water level, whichever is the higher.
- Pipe surround and backfill to the last 2 m run of drain: Excavated subsoil, rammed home.

INSTALLING ACCESS COVERS AND FRAMES

- Seating: Not required.
- Bedding and haunching of frames: Continuously.
  - Material: 1:3 cement:sand mortar.
  - Top of haunching: 30 mm below surrounding surfaces.
- Horizontal positioning of frames:
  - Centred over openings.
  - Square with joints in surrounding paving.
- Vertical positioning of frames:
  - Level; or
  - Marry in with levels of surrounding paving.
- Permissible deviation in level of external covers and frames: +0 to -6 mm.

EXPOSED OPENINGS IN INSPECTION CHAMBERS, ACCESS POINTS, FITTINGS AND EQUIPMENT

- General: Fit purpose made temporary caps. Protect from site traffic.
COMPLETION

901 REMOVAL OF DEBRIS AND CLEANING
- Preparation: Lift covers to manholes, inspection chambers and access points. Remove mortar droppings, debris and loose wrappings.
  - Timing: Before cleaning, final testing, CCTV inspection if specified, and immediately before handover.
- Cleaning: Thoroughly flush pipelines with water to remove silt and check for blockages. Rod pipelines between access points if there is any indication that they may be obstructed.
- Washings and detritus: Do not discharge into sewers or watercourses.
- Covers: Securely replace after cleaning and testing.

903 TEMPORARY MEASURES
- Water used to stabilize tanks and the like during installation: Drain.

911 TESTING AND INSPECTION
- Dates for testing and inspection: Give notice.
  - Period of notice: 5 days.

921 FINAL TESTING OF PRIVATE GRAVITY DRAINS AND SEWERS UP TO DN 300
- Before testing:
  - Cement mortar jointing: Leave 24 h.
  - Solvent welded pipelines: Leave 1 h.
- Standard: To Building Regulations.
- Method: Contractor’s choice.

941 WATER TESTING OF MANHOLES AND INSPECTION CHAMBERS
- Timing: Before backfilling.
- Standard:
  - Exfiltration: To BS EN 1610.
  - Infiltration: No identifiable flow of water penetrating the chamber.

971 CCTV INSPECTION OF PRIVATE PIPELINES
- General: Carry out and record internal inspection using CCTV equipment.
  - Locations to be inspected: Foul and surface water drains.
- Illumination: Of adequate intensity.
- Recording: Provide continuous position recording, still photographs and stopping of the camera at any point.
  - Copy of videotape recording: Submit.

978 LIFTING KEYS
- Lifting keys: Supply suitable keys for each type of access cover.
  - Timing: At completion.
T90 Heating systems - domestic

GENERAL

10 HEATING SYSTEM Contractors Design to be approved
• System: Two pipe.
• Heat sources: Boilers, gas fired combination.
• Flues: Submit design and cost proposals.
• LPG storage tanks: Not required.
• Oil storage tanks: Not required.
• Feed and expansion cisterns: not required.
• Pipelines: Copper.
• Valves: Thermostatic radiator valves.
• Circulating pumps: Required.
• Insulation: Submit design and cost proposals.
• Heat emitters: LST Radiators.
• System control: Programmers.
• Completion:
  - Documentation;
  - Labels;
  - Setting to work and commissioning; and
  - Testing.

SYSTEM PERFORMANCE

20 DESIGN
• Design: Complete the design of the heating system.
• Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

23 THERMAL INSULATION OF BUILDING FABRIC
• Heat loss calculations: Base on U-values calculated from the fabric described elsewhere.
• Submittals: Submit U-value calculations.

24 SYSTEM OPERATING PARAMETERS
• Design flow temperature (maximum): 82°C.
• Temperature difference across primary heating circuit (maximum): 10°C.
• Temperature difference across primary hot water circuit (maximum): 11°C.
• Water velocity: 1.5 m/s (maximum).

27 SYSTEM CONTROL
• Temperature and time control: Fully automatic and independent.
• Controls: Compatible with each other and with central heating boiler.
PRODUCTS

31 BOILERS, GAS FIRED COMBINATION To be located as existing
• Standards: To BS 5258-15, BS EN 483 or BS EN 297 and BS EN 625.
• Type: Wall mounted.
• Manufacturer: Worcester-Bosch.
  - Product reference: Greenstar 29CDi Classic Boiler.
• Output: Suit system requirements.
• Casing finish: White vitreous enamel.
• Integral controls: 7 day digital timer and thermostat.
• Integral accessories: Submit proposals.
• Integral flues: Fan assisted.

48 COPPER PIPELINES FOR GENERAL USE Circulation pipework
• Standard: To BS EN 1057, Kitemark certified.
• Temper: Half hard R250.
• Wall thickness (nominal):
  - OD 6, 8, 10 and 12 mm: 0.6 mm.
  - OD 15 mm: 0.7 mm.
  - OD 22 and 28 mm: 0.9 mm.
  - OD 35 and 42 mm: 1.2 mm.
• Microbore temper: Soft coil R220.
• Microbore wall thickness (nominal):
  - OD 6 and 8 mm: 0.6 mm.
  - OD 10 mm: 0.7 mm.
• Jointing: Integral lead-free solder ring capillary fittings.
  - Standard: To BS EN 1254-1, Kitemark certified.
• Connections to appliances and equipment: Select from:
  - Compression fittings: To BS EN 1254-2, Kitemark certified.
  - Fittings with threaded ends: To BS EN 1254-4.
• Supports: Compatible with pipe material.

53 VALVES GENERALLY
• Types: Approved for the purpose by local water supply undertaker and of appropriate
  pressure and temperature ratings.
• Control of valves: Fit with handwheels for isolation and lockshields for isolation and
  regulation of circuits or equipment.

56 THERMOSTATIC RADIATOR VALVES to all rads
• Standard: To BS EN 215 and capable of providing isolation.
• Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.
• Features: Built in sensor.
• Finish: Submit proposals.
• Lockshield valves: To BS 2767 with matching finish fitted to return side of radiator.

61 RADIATORS
• Standard: To BS EN 442-1, -2, -3.
• Type: Double panel double convector and Low surface temperature.
• Manufacturer: Submit proposals.
  - Product reference: Submit proposals.
• Material: Submit proposals.
• Finish: Submit proposals.
• Sizes: Submit proposals.
PROGRAMMERS
- Standards: To BS EN 60730-1, -2-7, -2-10, -2-14 and BS EN 61058-1, -2-5. BEAB approved.
- Manufacturer: Submit proposals.
  - Product reference: Submit proposals.
- Features: Digital display, 7 day, 24 hour, two on/off switchings each day.

THERMOSTATS
- Standards: To BS EN 60730-1, -2-7, -2-8, -2-9, -2-14 and BS EN 61058-1, -2-5. BEAB approved.
- Manufacturer: Submit proposals.
  - Product reference: Submit proposals.

EXECUTION

STRIPPING OUT
- Extent of stripping out: Complete installation.

INSTALLATION GENERALLY
- Standard: To BS EN 14336.
- Performance: Free from leaks and the audible effects of expansion, vibration and water hammer.
- Fixing of equipment, components and accessories: Fix securely, parallel or perpendicular to the structure of the building.
- Preparation: Immediately before installing tanks and cisterns on a floor or platform, clear the surface completely of debris and projections.
- Corrosion resistance: In locations where moisture is present or may occur, use corrosion resistant fittings/fixings and avoid contact between dissimilar metals by use of suitable washers, gaskets, etc.

INSTALLATION OF FEED AND EXPANSION CISTERNs
- Outlet positions: Connect lowest outlets at least 30 mm above bottom of cistern.
- Water level (minimum): 25 mm below the overflow level of the warning pipe.
- Access: Fix cistern with a minimum clear space of 350 mm above, or 225 mm if the cistern does not exceed 450 mm in any dimension.
- Mounting height above the highest point of the circulation system (minimum): 1 m.
- Location: Provide sufficient space for cleaning and maintenance, with enough clearance above the cistern to service the valve and accommodate the expansion pipe.
- Plinth: Firm, level and continuous.
- Jointing pipes to thermoplastics cisterns: To BS EN 806-4.
- Insulation: Where the space below the cistern is heated do not insulate the underside.

PIPELINE INSTALLATION
- Appearance: Install pipes straight, and parallel or perpendicular to walls, floors, ceilings, and other building elements.
- Pipelines finish: Smooth, consistent bore, clean, free from defects, e.g. external scratching, toolmarks, distortion, wrinkling, and cracks.
- Concealment: Generally conceal pipelines within floor, ceiling and/or roof voids.
- Access: Locate runs to facilitate installation of equipment, accessories and insulation and allow access for maintenance.
- Arrangement of hot and cold pipelines: Run hot pipelines above cold where routed together horizontally. Do not run cold water pipelines near to heating pipelines or through heated spaces.
- Electrical equipment: Install pipelines clear of electrical equipment. Do not run pipelines through electrical enclosures or above switch gear distribution boards or the like.
- Insulation allowance: Provide space around pipelines to fit insulation without compression.
PIPELINE FIXING

- Fixing: Secure and neat.
- Joints, bends and offsets: Minimize.
- Pipeline support: Prevent strain, e.g. from the operation of taps or valves.
- Drains and vents: Fix pipelines to falls. Fit draining taps at low points and vents at high points.
- Thermal expansion and contraction: Allow for thermal movement of pipelines. Isolate from structure. Prevent noise or abrasion of pipelines caused by movement. Sleeve pipelines passing through walls, floors or other building elements.
- Dirt, insects or rodents: Prevent ingress.

JOINTS IN COPPER PIPELINES

- Preparation: Cut pipes square. Remove burrs.
- Joints: Neat, clean and fully sealed. Install pipe ends into joint fittings to full depth.
- Bends: Do not use formed bends on exposed pipework, except for small offsets. Form changes of direction with radius fittings.
- Adaptors for connecting dissimilar materials: Purpose designed.
- Substrate and plastics pipes and fittings: Do not damage, e.g. by heat when forming soldered joints.
- Flux residue: Clean off.

COMPLETION

TESTING

- Standard: To BS EN 14336.
- Notice (minimum): 3 days.
- Preparation: Secure and clean pipework and equipment. Fit cistern/ tank covers.
- Leak testing: Start boiler and run the system until parts are at normal operating temperatures and then allow to cool to cold condition for a period of 3 h.
- Pressure testing: At both hot and cold conditions joints, fittings and components must be free from leaks and signs of physical distress when tested for at least 1 h as follows:
  - Systems fed directly from the mains and systems downstream of a booster pump: Apply a test pressure equal to 1.5 times the maximum pressure to which the installation or relevant part is designed to be subjected in operation.
  - Systems fed from storage: Apply a test pressure equal to the pressure produced when the storage cistern is filled to its normal maximum operating level.
  - Inaccessible or buried pipelines: Carry out hydraulic pressure test to twice the working pressure.

SETTING TO WORK AND COMMISSIONING

- Equipment: Check and adjust operation of equipment, controls and safety devices.
- Outlets: Check operation of outlets for satisfactory rate of flow and temperature.

DOCUMENTATION

- Manufacturers' operating and maintenance instructions: Submit for equipment and controls.
- System operating and maintenance instructions: Submit for the system as a whole giving optimum settings for controls.
- Record drawings: Submit drawings showing the location of circuits and operating controls.

LABELS

- Valve labels: Provide labels on isolating and regulating valves on primary circuits, stating their function.
U90 General ventilation - domestic

GENERAL

14 LOCAL EXTRACT FAN VENTILATION To Kitchenette & new toilet block
- Room extract terminals: On the fan.
- Fan units: Ventilation fan units.
- Air ductwork: n/a.
- Air ductwork accessories: n/a.
- External exhaust air terminals: External exhaust grilles.
- Controls: Submit design and cost proposals.
- Completion: Commissioning.

SYSTEM PERFORMANCE

20 DESIGN LOCAL EXTRACT FAN VENTILATION
- Design: Complete the design of the ventilation system.
- Ventilation rate: to meet current regulations.
- Proposals: Submit drawings (showing equipment positions and ductwork routes), technical information, calculations and manufacturers' literature.

EXECUTION

84 INSTALLING VENTILATION FANS
- Mounting: Wall mounted with through wall telescopic duct for 127 mm diameter core drill and external grille.

COMPLETION

90 COMMISSIONING
- Ventilation system: Balance airflow using methods recommended by the system manufacturer.
- Performance: to meet current regulations.
V90 Electrical systems - domestic

GENERAL

5 LOW VOLTAGE SUPPLY
   • Nature of current: Alternating.
   • Phase: Single phase.
   • Voltage: 230 V.
   • Source: Local electricity distribution company and Submit design and cost proposals.
   • Metering: Existing.
   • Accessories: None.

7 LV SWITCHGEAR
   • Distribution board: Submit design and cost proposals.

8 LV CABLEING
   • Cable: Flat PVC insulated and sheathed cable.

9 CONTAINMENT
   • Type: Steel conduit.
   • Appearance: Concealed.
   • Rewireable installation: Not required.

20 GENERAL DESIGN
   • Standards: To BS 7671 and the requirements of the electricity distributor.
   • Design: Complete the design and detailing of the electrical installation.
   • Design information: Submit calculations, manufacturer's literature and drawings showing equipment positions and routes.

21 DESIGN OF LOW VOLTAGE INCOMING SUPPLY
   • Capacity: Determine the anticipated maximum demand of the installation.
   • Establishing the supply: Manage and liaise with the electricity distributor to establish an incoming electricity supply.
   • Electricity supplier: School to confirm.
   • Liaise with the electricity supplier, complete an application for supply of electricity and manage installation of metering equipment.
   • Incoming earthing arrangement: Establish with the electricity distributor.
   • Location: Coordinate the location of the incoming supply and establish the spatial requirements for the electricity distributor's equipment and metering.
26 DESIGN AND LIGHTING CALCULATIONS
• Design: Complete the design of the following lighting systems:
  - General;
  - Emergency; and
  - External.
• Proposals: Submit drawings, technical information, calculations and manufacturers' literature.
• Lighting calculations:
  - Type: Computer generated point calculations.
• Submit the following:
  - Luminaire layout drawings.
  - Luminaire photometric data including flux fraction ratios and polar intensity curves.
  - Lamp technical information.
  - Maintenance factor calculations, including proposals for luminaire maintenance and lamp replacement.
  - Isolux contour plots for the working plane.
  - Schedule of design and calculated maintained average illuminance values.
  - Schedule of design and calculated uniformity values.

PRODUCTS

30 PRODUCTS GENERALLY
• Standard: To BS 7671.
• CE Marking: Required.

32 DISTRIBUTION BOARDS AND CONSUMER UNITS
• Standards: To BS EN 61439-3 and ASTA certified.
• Manufacturer: Submit proposals.
  - Product reference: Submit proposals.
• Number of ways: Determine.
  - Spare capacity: 10% spare ways.

33 CABLE TRAYS
• Standard: To BS EN 61537.
• Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.
• Accessories and fittings: Factory made of the same material type, pattern, finish and thickness as cable tray.

35 CONDUIT
• Standard: To BS EN 61386-1.
• Type: Suitable for location and use.

39 CABLES
• Standard: To BS 7671.
• Approval: British Approvals Service for Cables (BASEC) certified.
• Cable sizes not stated: Submit proposals and calculations.

40 PROTECTIVE CONDUCTORS
• Type: Cable conductors with yellow/ green sheath.
47 LAMPS GENERALLY

- Standards:
  - Compact fluorescent lamps: To BS EN 60901 and BS EN 61199.
  - High pressure mercury lamps: To BS EN 60188 and BS EN 62035.
  - High pressure sodium lamps: To BS EN 62035.
  - Light emitting diodes (LEDs): To BS EN 62031.
  - Metal halide lamps: To BS EN 62035.
  - Tubular fluorescent lamps:
    Single-capped lamps: To BS EN 60901 and BS EN 61199.
    Double-capped lamps: To BS EN 60081 and BS EN 61195.
  - Tungsten halogen lamps: To BS EN 60432-2 and BS EN 60357.
- Manufacturer: As recommended by luminaire manufacturer.
  - Lamps of the same type and rating: Same manufacturer.

50 EXTERNAL LUMINAIRES

- Standards: To BS EN 60598-1 and BS EN 55015.
- Approval: Kitemark certified.
- Manufacturer: Submit proposals.
  - Product reference: Submit proposals.
- Mounting: Wall.
- Ingress protection to BS EN 60529: IP65.
- Lamp: Submit proposals.
  - Wattage: Submit proposals.
  - Colour temperature: Submit proposals.
- Spill lighting control: .

EXECUTION

60 GENERAL EXECUTION

- Standard: To BS 7671.

63 INSTALLING CONDUIT AND FITTINGS

- Fixing: Fix securely. Fix boxes independently of conduit.
- Drainage outlets: Locate at lowest points in conduit installed externally, and where condensation may occur.
- Location: Position vertically and horizontally in line with equipment served, and parallel with building lines. Locate where accessible.
- Jointing:
  - Number of joints: Minimize.
  - Lengths of conduit: Maximize.
  - Cut ends: Remove burrs, and plug during building works.
  - Movement joints in structure: Manufactured expansion coupling.
  - Threaded steel conduits: Tightly screw to ensure electrical continuity, with no thread showing.
  - Conduit connections to boxes and items of equipment, other than those with threaded entries: Earthing coupling/ male brass bush and protective conductor.
- Changes of direction: Site machine-formed bends, junction boxes and proprietary components. Do not use elbows or tees. Alternatively, use conduit boxes.
  - Connections to boxes, trunking, equipment and accessories: Screwed couplings, adaptors, connectors and glands, with rubber bushes at open ends.
64 INSTALLING TRUNKING
- Positioning: Accurate with respect to equipment served, and parallel with other services and, where relevant, floor level and other building lines.
- Access: Provide space encompassing cable trunking to permit access for installing and maintaining cables.
- Jointing:
  - Number of joints: Minimize.
  - Lengths of trunking: Maximize.
  - Steel systems: Mechanical couplings. Do not weld. Fit a copper link at each joint to ensure electrical continuity.
- Junctions and changes of direction: Proprietary jointing units.
- Cable entries: Fit grommets, bushes or liners.
- Internal fire barriers: Provide to maintain integrity of fire compartment.
- Protection: Fit temporary blanking plates. Prevent ingress of screed and other extraneous materials.
- Service outlet units: Fit when cables are installed.

66 CABLE ROUTES
- Cables generally: Conceal wherever possible.
  - Concealed cable runs to wall switches and outlets: Align vertically with the accessory.
- Exposed cable runs: Submit proposals.
  - Orientation: Straight, vertical and/or horizontal and parallel to walls.
- Distance from other services running parallel: 150 mm minimum.
  - Heating pipes: Position cables below.

68 INSTALLING ELECTRICAL ACCESSORIES AND EQUIPMENT
- Location: See drawings.
- Arrangement: Coordinate with other wall or ceiling mounted equipment.
- Positioning: Accurately and square to vertical and horizontal axes.
- Alignment: Align adjacent accessories on the same vertical or horizontal axis.
- Mounting: Surface.
- Mounting heights (finished floor level to underside of equipment or accessory): n/a.

70 INSTALLING FINAL CONNECTIONS
- Size: Determine.
- Cable: Heat resisting white flex.
- Length: Allow for equipment removal and maintenance.

72 INSTALLING LUMINAIRES
- Location: Submit proposals.
- Supports: Adequate for weight of luminaire.
- Locations: Submit proposals.

74 LABELLING
- Identification and notices:
  - Standards:
    - To BS 5499-5;
    - To BS ISO 3864-4; and
    - To BS ISO 7010.
  - Equipment: Label when a voltage exceeding 230 V is present.
- Distribution boards and consumer units: Card circuit chart within a reusable clear plastic cover. Fit to the inside of each unit. Include typed information identifying the outgoing circuit references, their device rating, cable type, size, circuit location and details. Label each outgoing way corresponding to the circuit chart.
- Sub-main cables: Label at both ends, with proprietary cable marker sleeves.
76 ENGRAVING
- Metal and plastic accessories: Engrave, indicating their purpose.
- Emergency lighting test key switches: Describe their function.
- Multigang light switches: Describe the luminaire arrangement.

78 FINAL FIX
- Accessory faceplates, luminaires and other equipment: Fit after completion of building painting.

79 CLEANING
- Electrical equipment: Clean immediately before handover.
- Equipment not supplied but installed under the electrical works: Clean immediately before handover.

COMPLETION

85 INSPECTION AND TESTING GENERALLY
- Standard: To BS 7671.
- Notice before commencing tests (minimum): 24 hours.
- Labels and signs: Fix securely before system is tested.
- Inspection and completion certificates: Submit.
  - Number of copies: 2.
Z20 Fixings and adhesives

To be read with Preliminaries/ General conditions.

PRODUCTS

310 FASTENERS GENERALLY
• Materials: To have:
  - Bimetallic corrosion resistance appropriate to items being fixed.
  - Atmospheric corrosion resistance appropriate to fixing location.
• Appearance: Submit samples on request.

320 PACKINGS
• Materials: Noncompressible, corrosion proof.
• Area of packings: Sufficient to transfer loads.

330 NAILED TIMBER FASTENERS
• Nails:
  - Steel: To BS 1202-1 or BS EN 10230-1.
  - Copper: To BS EN 1202-2.
  - Aluminium: To BS 1202-3.

340 MASONRY FIXINGS
• Light duty: Plugs and screws.
• Heavy duty: Expansion anchors or chemical anchors.

350 PLUGS
• Type: Proprietary types to suit substrate, loads to be supported and conditions expected in use.

360 ANCHORS
• Types:
  - Expansion: For use in substrate strong enough to resist forces generated by expansion of anchor.
  - Adhesive or chemical:
    For use in substrate where expansion of anchor would fracture substrate.
    For use in irregular substrate where expansion anchors cannot transfer load on anchor.
  - Cavity: For use where the anchor is retained by toggles of the plug locking onto the inside face of the cavity.

370 WOOD SCREWS
• Type:
  - Wood screws (traditional pattern).
    Standard: To BS 1210.
  - Wood screws.
    Pattern: Parallel, fully threaded shank or twin thread types.
• Washers and screw cups: Where required are to be of same material as screw.

380 MISCELLANEOUS SCREWS
• Type: To suit the fixing requirement of the components and substrate.
  - Pattern: Self-tapping, metallic drive screws, or power driven screws.
• Washers and screw cups: Where required to be of same material as screw.
390 ADHESIVES GENERALLY
  • Standards:
    - Hot-setting phenolic and aminoplastic: To BS 1203.
    - Thermosetting wood adhesives: To BS EN 12765.
    - Thermoplastic adhesives: To BS EN 204.

410 POWDER ACTUATED FIXING SYSTEMS
  • Types of fastener, accessories and consumables: As recommended by tool manufacturer.

EXECUTION

610 FIXING GENERALLY
  • Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support.
  • Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers/sleeves to avoid bimetallic corrosion.
  • Appearance: Fixings to be in straight lines at regular centres.

620 FIXING THROUGH FINISHES
  • Penetration of fasteners and plugs into substrate: To achieve a secure fixing.

630 FIXING PACKINGS
  • Function: To take up tolerances and prevent distortion of materials and components.
  • Limits: Do not use packings beyond thicknesses recommended by fixings and fasteners manufacturer.
  • Locations: Not within zones to be filled with sealant.

640 FIXING CRAMPS
  • Cramp positions: Maximum 150 mm from each end of frame sections and at 600 mm maximum centres.
  • Fasteners: Fix cramps to frames with screws of same material as cramps.
  • Fixings in masonry work: Fully bed in mortar.

650 NAILED TIMBER FIXING
  • Penetration: Drive fully in without splitting or crushing timber.
  • Surfaces visible in completed work: Punch nail heads below wrot surfaces.
  • Nailed timber joints: Two nails per joint (minimum), opposed skew driven.

660 SCREW FIXING
  • Finished level of countersunk screw heads:
    - Exposed: Flush with timber surface.
    - Concealed (holes filled or stopped): Sink minimum 2 mm below surface.

670 PELLETED COUNTERSUNK SCREW FIXING
  • Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
  • Pellets: Cut from matching timber, match grain and glue in to full depth of hole.
  • Finished level of pellets: Flush with surface.

680 PLUGGED COUNTERSUNK SCREW FIXING
  • Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
  • Plugs: Glue in to full depth of hole.
  • Finished level of plugs: Projecting above surface.
690 USING POWDER ACTUATED FIXING SYSTEMS
   - Powder actuated fixing tools: To BS 4078-2 and Kitemark certified.
   - Operatives: Trained and certified as competent by tool manufacturer.

700 APPLYING ADHESIVES
   - Surfaces: Clean. Adjust regularity and texture to suit bonding and gap filling characteristics of adhesive.
   - Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.
Z21 Mortars

To be read with Preliminaries/ General conditions.

CEMENT GAUGED MORTARS

110 CEMENT GAUGED MORTAR MIXES
  • Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

120 SAND FOR SITE MADE CEMENT GAUGED MASONRY MORTARS
  • Standard: To BS EN 13139.
  • Grading: 0/2 (FP or MP).
    - Fines content where the proportion of sand in a mortar mix is specified as a range (e.g. 1:1:5-6):
      Lower proportion of sand: Use category 3 fines.
      Higher proportion of sand: Use category 2 fines.
  • Sand for facework mortar: Maintain consistent colour and texture. Obtain from one source.

131 READY-MIXED LIME:SAND FOR CEMENT GAUGED MASONRY MORTARS
  • Standard: To BS EN 998-2.
  • Lime: Nonhydraulic to BS EN 459-1.
    - Type: CL 90S.
  • Pigments for coloured mortars: To BS EN 12878.

135 SITE MADE LIME:SAND FOR CEMENT GAUGED MASONRY MORTARS
  • Permitted use: Where a special colour is not required and in lieu of factory made ready-mixed material.
  • Lime: Nonhydraulic to BS EN 459-1.
    - Type: CL 90S.
  • Mixing: Thoroughly mix lime with sand, in the dry state. Add water and mix again. Allow to stand, without drying out, for at least 16 hours before using.

160 CEMENTS FOR MORTARS
  • Cement: To BS EN 197-1 and CE marked.
    - Types: Portland cement, CEM I.
    - Portland limestone cement, CEM II/A-L or CEM II/A-LL.
    - Portland slag cement, CEM II/B-S.
    - Portland fly ash cement, CEM II/B-V.
      - Strength class: 32.5, 42.5 or 52.5.
  • White cement: To BS EN 197-1 and CE marked.
    - Type: Portland cement, CEM I.
      - Strength class: 52.5.
  • Sulfate resisting Portland cement:
    - Types: To BS 4027 and Kitemarked.
      - To BS EN 197-1 fly ash cement, CEM II/B-V and CE marked.
      - Strength class: 32.5, 42.5 or 52.5.
  • Masonry cement: To BS EN 413-1 and CE marked.
    - Class: MC 12.5.
180  ADMIXTURES FOR SITE MADE CEMENT GAUGED MORTARS
   • Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
   • Other admixtures: Submit proposals.
   • Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.

190  RETARDED READY TO USE CEMENT GAUGED MORTAR
   • Standard: To BS EN 998-2.
   • Lime for cement:lime:sand mortars: Nonhydraulic to BS EN 459-1.
     - Type: CL 90S.
   • Pigments for coloured mortars: To BS EN 12878.
   • Time and temperature limitations: Use within limits prescribed by mortar manufacturer.
     - Retempering: Restore workability with water only within prescribed time limits.

200  STORAGE OF CEMENT GAUGED MORTAR MATERIALS
   • Sands and aggregates: Keep different types/grades in separate stockpiles on hard, clean, free-draining bases.
   • Factory made ready-mixed lime:sand/ready to use retarded mortars: Keep in covered containers to prevent drying out or wetting.
   • Bagged cement/hydrated lime: Store off the ground in dry conditions.

210  MAKING CEMENT GAUGED MORTARS
   • Batching: By volume. Use clean and accurate gauge boxes or buckets.
   - Mix proportions: Based on dry sand. Allow for bulking of damp sand.
   • Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
   - Mortars containing air entraining admixtures: Mix mechanically. Do not overmix.
   • Working time (maximum): Two hours at normal temperatures.
   • Contamination: Prevent intermixing with other materials.

LIME:SAND MORTARS

310  LIME:SAND MORTAR MIXES
   • Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

320  SAND FOR LIME:SAND MASONRY MORTARS
   • Type: Sharp, well graded.
     - Quality, sampling and testing: To BS EN 13139.
     - Grading/Source: As specified elsewhere in relevant mortar mix items.

330  READY PREPARED LIME PUTTY
   • Type: Slaked directly from CL 90 quicklime to BS 890, using an excess of water.
     - Maturation: In pits/containers that allow excess water to drain away.
     - Density of matured lime putty: 1.3 - 1.4 kg/litre.
   • Maturation period before use (minimum): Seek instructions.

345  ADMIXTURES FOR HYDRAULIC LIME:SAND MORTARS
   • Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
   • Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.
350 STORAGE OF LIME:SAND MORTAR MATERIALS
- Sands and aggregates: Keep different types/grades in separate stockpiles on hard, clean, free-draining bases.
- Ready prepared nonhydraulic lime putty: Prevent drying out and protect from frost.
- Nonhydraulic lime:sand mortar: Store on clean bases or in clean containers that allow free drainage. Prevent drying out or wetting and protect from frost.
- Bagged hydrated hydraulic lime: Store off the ground in dry conditions.

360 MAKING LIME:SAND MORTARS GENERALLY
- Batching: By volume. Use clean and accurate gauge boxes or buckets.
- Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
- Contamination: Prevent intermixing with other materials, including cement.

370 SITE PREPARED NONHYDRAULIC LIME:SAND MORTARS
- Mixing: Mix materials thoroughly by compressing, beating and chopping. Do not add water.
  - Equipment: Roller pan mixer or submit proposals.
- Maturation period before use (maximum): Seek instructions.

390 KNOCKING UP NONHYDRAULIC LIME:SAND MORTARS
- Knocking up before and during use: Achieve and maintain a workable consistency by compressing, beating and chopping. Do not add water.
  - Equipment: Roller pan mixer or submit proposals.

400 MAKING HYDRAULIC LIME:SAND MORTARS
- Mixing hydrated hydraulic lime:sand: Follow the lime manufacturer’s recommendations for each stage of the mix.
  - Water quantity: Only sufficient to produce a workable mix.
- Working time: Within limits recommended by the hydraulic lime manufacturer.
Z22 Sealants

To be read with Preliminaries/General conditions.

EXECUTION

610 SUITABILITY OF JOINTS

- Presealing checks:
  - Joint dimensions: Within limits specified for the sealant.
  - Substrate quality: Surfaces regular, undamaged and stable.
- Joints not fit to receive sealant: Submit proposals for rectification.

620 PREPARING JOINTS

- Surfaces to which sealant must adhere:
  - Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.
  - Clean using materials and methods recommended by sealant manufacturer.
- Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.
- Backing strip and/or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.
- Protection: Keep joints clean and protect from damage until sealant is applied.

630 APPLYING SEALANTS

- Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.
- Environmental conditions: Do not dry or raise temperature of joints by heating.
- Sealant application: Fill joints completely and neatly, ensuring firm adhesion to substrates.
- Sealant profiles:
  - Butt and lap joints: Slightly concave.
  - Fillet joints: Flat or slightly convex.
- Protection: Protect finished joints from contamination or damage until sealant has cured.
Z31 Powder coatings

To be read with Preliminaries/ General conditions.

120 POWDER COATING MATERIALS
• Manufacturer: Obtain from one only of the following: Contractor’s choice.
• Selected manufacturer: Submit details before commencement of powder coating including:
  - Name and contact details.
  - Details of accreditation schemes.
  - Technical data of product including current Agrément certificates.

210 WORKING PROCEDURES
• Comply with the following standards.
  - Aluminium components: To BS 6496 or BS EN 12206-1.
  - Steel components: To BS EN 13438.
  - Safety standards: To British Coatings Federation 'Code of safe practice - Application of
    thermosetting powder coatings by electrostatic spraying'.

220 POWDER COATING APPLICATORS
• Applicator requirements:
  - Approved by powder coating manufacturer.
  - Currently certified to BS EN ISO 9001.
  - Comply with quality procedures, guarantee conditions, standards and tests required by
    powder coating manufacturer.
  - Applicator to use only one plant.
  - Selected applicator: Submit details before commencement of powder coating including:
    Name and contact details.
    Details of accreditation schemes.

225 GUARANTEES
• Powder coating manufacturer and applicator guarantees:
  - Submit sample copies before commencement of powder coating.
  - Submit signed project specific copies on completion of work.

230 CONTROL SAMPLES
• Sequence: Prior to ordering materials for the works, obtain approval of appearance for:
  - Powder coated samples: Of various grades and forms of background metal to be used,
    showing any colour, texture and gloss variation.
  - Fabrication samples: Showing joint assembly, how powder coating is affected and how
    any cut metal edges are finished and protected.
• Samples to include the following information:
  - Product reference.
  - Colour.
  - Reference number.
  - Name.
  - Gloss level.

250 COMPONENT DESIGN
• Condition of components to be powder coated:
  - To comply with relevant recommendations of BS 4479-1, -3, and -4.
  - Of suitable size to fit plant capacity.
  - Of suitable thickness to withstand oven curing.
310 PRETREATMENT OF ALUMINIUM COMPONENTS

- Condition of components to be pretreated:
  - Free from corrosion and damage.
  - All welding and jointing completed and finish off as specified.
  - Free from impurities including soil, grease, oil.
  - Suitable for and compatible with the pretreatment process.

- Conversion coating requirements:
  - Chromate system: To BS 6496 or BS EN 12206-1.
  - Chromate-free system: To BS EN 12206-1. Submit details before using.

- Rinsing requirements: Use demineralized water. Drain and dry.

320 PRETREATMENT OF STEEL COMPONENTS

- Condition of components to be pretreated:
  - Free from corrosion and damage.
  - All welding and jointing completed and finish off as specified.
  - Free from impurities including soil, grease, oil.
  - Suitable for and compatible with the pretreatment process.

- Conversion coating requirements: To BS EN 13438.

- Rinsing requirements: Use demineralized water. Drain and dry.

430 EXTENT OF POWDER COATINGS

- Application: To visible component surfaces, and concealed surfaces requiring protection. Coated surfaces will be deemed 'significant surfaces' for relevant BS 6496 or BS EN 13438 performance requirements.

435 APPLICATION OF POWDER COATINGS

- Surfaces to receive powder coatings: Free from dust or powder deposits.
- Powder colours: Obtain from one batch of one manufacturer.
- Commencement of powder coating: To be continuous from pretreatment.
- Jig points: Not visible on coated components.
- Curing: Controlled to attain metal temperatures and hold periods recommended by powder coating manufacturer.
- Stripping and recoating of components: Only acceptable by prior agreement of powder coating manufacturer. Stripping, pretreatment and powder coating are to be in accordance with manufacturer’s requirements.
- Overcoating of components: Not acceptable.

440 PERFORMANCE AND APPEARANCE OF POWDER COATINGS

- For aluminium components:
  - Standard: To BS 6496 or BS EN 12206-1.

- For steel components:
  - Standard: To BS EN 13438.

- Visual inspection after powder coating: Significant surface viewing distances to be as specified in the relevant Standard, unless specified otherwise.
- Colour and gloss levels: To conform with approved samples.

450 ALUMINIUM ALLOY FABRICATIONS

- Units may be assembled:
  - Before powder coating.
  - From components powder coated after cutting to size.
  - Where approved, from components powder coated before cutting to size.
  - Exposure of uncoated background metal: Not acceptable.
  - Assembly sealants: Compatible with powder coatings. Obtain approval of colour if sealants are visible after fabrication.
460 STEEL FABRICATIONS
- Unit assembly: Wherever practical, before powder coating.
- Exposure of uncoated background metal: Not acceptable.
- Assembly sealants: Compatible with powder coatings. Obtain approval of colour if sealants are visible after fabrication.

470 FIXINGS
- Exposed metal fixings: Powder coat together with components, or coat with matching repair paint system applied in accordance with the powder coating manufacturer's recommendations.

480 DAMAGED COMPONENTS - REPAIR/REPLACEMENT
- Before delivery to site: Check all components for damage to powder coatings. Replace damaged components.
- Site damage: Submit proposals for repair or replacement.

510 PROTECTION
- Powder coated surfaces of components: Protect from damage during handling and installation, or by subsequent site operations.
- Protective coverings: Must be:
  - Resistant to weather conditions.
  - Partially removable to suit building in and access to fixing points.
- Protective tapes in contact with powder coatings: Must be:
  - Low tack, self adhesive and light in colour.
  - Applied and removed in accordance with tape and powder coating manufacturers' recommendations. Do not use solvents to remove residues as these are detrimental to the coating.
- Inspection of protection: Carry out monthly. Promptly repair any deterioration or deficiency.

535 DOCUMENTATION
- Submit the following information for each batch of powder coated components:
  - Supplier.
  - Trade name.
  - Colour.
  - Type of powder.
  - Method of application.
  - Batch and reference number.
  - Statutory requirements.
  - Test certificates.
  - Maintenance instructions.

540 COMPLETION
- Protection: Remove.
- Cleaning and maintenance of powder coatings: Carry out in accordance with procedures detailed in powder coating manufacturer and applicator guarantees.
SECTION THREE

SCHEDULE OF WORKS
1.00 STRIP OUT/DEMOLITION WORKS

1.01 Strip out existing floor coverings throughout and dispose from site.

1.02 Include for the removal and safe disposal of the vinyl floor tiles and adhesive as identified in the asbestos survey report. All asbestos containing materials to be removed in accordance with the Control of Asbestos Regulations 2012.

1.03 Strip out all existing base units, sinks and worktops as indicated on the drawings provided and dispose from site.

1.04 Remove all remaining fixtures and fittings and dispose from site.

1.05 Carefully remove all internal doors with exception to the door to the accessible toilet which is to be adequately protected for the duration of the works. Set aside 2no. existing doors which are to be installed to the new lobby area and office.

1.06 Carefully remove internal walls as indicated on the drawings provided. Include for providing adequate support where loadbearing walls are to be removed prior to the installation of the new structural steelwork.

1.07 Carefully remove all vertical blinds and set aside for re-fitting on completion of the works. Ensure these are clearly labelled with all fixings are retained.

1.08 Carefully remove ceramic wall tiles above base units within the existing kitchen and make good walls ready for decorating.

1.09 Strip out existing electrical installation back to consumer unit and leave safe.

1.10 Strip out existing heating/H&C water pipework back to existing boiler and cap off as required.

1.11 Carefully remove windows W1, W2, W3 & W4 and dispose from site.

1.12 Disconnect and remove Belfast sink within garage area, break out block piers and dispose from site.

1.13 Disconnect and remove WC pan to separate toilet and cap off waste below floor level, ready for screeding over.

2.00 DRAINAGE

2.01 Adapt existing drainage to accommodate the new kitchenette, the sinks within the Wet Area and the new toilet block as shown on the drawing provided.

2.02 Install new aco drain with a length of 110mm drain pipe connecting to a new roddable gully with cast iron grid as shown on the drawing provided. The new gully is to connect to the existing surface water drainage system. Include for all fittings required to complete these works.
2.03 Supply and install new inspection chamber where new drainage serving the kitchenette and toilet block connect to the existing drain run as shown on the drawings provided. Include for all fittings as required to complete the works.

2.04 Supply and install new roddable gully to serve waste from new kitchenette.

3.00 STRUCTURAL WORKS

3.01 Install new structural steels as per the structural engineers details (Option 2) (DRWG 15106/01)

3.02 Extra/over for installing structural steels as per structural engineers details (Option 1), including for removing and disposing of the existing chimney stack. Include for making good the ground floor, extending the existing ceiling joists to span onto the new structural steel and making good the ceiling, and roof covering. Allow for stripping back the existing tiles as required, installing roofing felt to overlap existing by min 150mm to perimeter of opening, extending battens as required and install concrete tiles to match existing. Colour to be agreed on site.

3.03 Raise the level of the garage floor area with a 65mm sand/cement screed to finish flush with existing, laid on a vapour control layer on 75mm Kooltherm K3 insulation board to provide a U-value of 0.22W/m2K

3.04 Break out existing concrete screed to existing toilet/store area in order to reduce the floor level to finish flush with the existing floor level within the adjacent corridor. Leave ready to receive latex screed.

4.00 NEW BRICK/BLOCKWORK

4.01 Infill brick panels once door D1 and window W2 are removed. Allow for facing bricks to match existing. All wall ties to be manufactured from stainless steel grade 304 and are to be spaced at 450mm centres vertically and 900mm centres horizontally on a staggered pitch. Include for insulating cavities with Knauf DriTherm cavity slabs.

Use starter profiles by Catnic or equal and approved where specified at the junctions where new brick/block work meets the existing.

4.02 Infill redundant doorway D2 with blockwork tied to existing blockwork with proprietary starter profiles.

5.00 WINDOWS - U value 1.6W/m²K

5.01 Allow for installing new uPVC windows (NW01, NW02, NW03 & NW04) to match existing as shown on the drawings provided. New windows to have sealed double glazed units to BS 6262 with integrated trickle ventilation to meet current Building Regulations. All dimension to be site checked prior to manufacture. Openings to equate to no more than 1/20 floor area.
6.00 EXTERNAL DOORS (ND01 & ND02) - U value 1.6W/m²K

6.01 Supply and fit thermally broken powder coated aluminum double glazed external doors/screens (Smart System profile or similar and approved) to comply with part L&M of the Building Regulations.

These doors are designated fire exits and are to have a manual call point connected to the fire alarm. Dimension to be site checked prior to manufacture.

Doors to be of an anti-finger trap design with rounded styles and level access thresholds. Colours to be confirmed.

7.00 ELECTRICAL INSTALLATION

7.01 Employ suitably qualified NICEIC electrical engineers to carry out any electrical work. The work is to be carried out to the current Edition IEE Regulations (BS 7671).

Carry out all 1st & 2nd fix electrical work as detailed. All work is to be concealed within the wall finishes where practical. All fittings are to be supplied and fitted by the electrical sub contractor under the direction of the principal contractor.

- Wiring System to Contractors design (to be approved by CA).
- New wiring to be PVC/PVC cables, sized in accordance with the IEE Wiring Regulations.
- All new circuits shall be taken from the local existing distribution board.
- Include for new MCB’s and RCBO’s as required. All socket outlet circuits shall be Ring Mains and protected by 30mA trip RCBO’s.
- Cable/conduit drops shall be concealed in the wall and conduit drops shall be steel conduit.
- Chasing of walls etc. shall be carried out by the Main Contractor.
- All socket outlets to be MK Logic Plus, White Range. All other accessories shall be Logic Plus range to match.
- Include for providing 4no. data sockets to new office and provision of 1no data socket to main room. Liaise with the School ICT representative for details etc.
- Provide and install socket outlets in the office on three compartment UPVC dado trunking. Position and height to be agreed.
- Provide and install supplies to extract fans to the new toilet block and kitchenette. Include for local isolation, final connections and all control wiring i.e. PIR sensors, speed controllers etc.
• Provide and install supplies to the new ZIP Hydroboil to the proposed kitchenette. Include for local isolation and final connections.

• Provide and install supplies to the new hand-dryer to the nursery toilets. Include for local isolation and final connections.

• Existing consumer unit to be re-used.

• Lighting design to be contractors design (to be approved by CA).

• Re-use existing light fittings within the main room/office/lobby/cloaks area. All new light switches to be MK Grid Plus, white range.

• New lighting to toilets & kitchenette. Allow for supplying and fitting new Concord (Havells Sylvania) Lighting Ltd - "Accent 150" LED Circular Downlighter Type 2050740 (17W HE 4K STD) complete with White IP44 Glass Cover Type 2028034 - Builders work hole required 176mm dia. Emergency version (B/em) - As luminaire "B" above but Type 2050743 complete with three hour emergency maintained facility. Note, both the lighting and extraction to new toilet block to be wired for presence detection.

• External lighting to be provided to include:

  1 no. external light fitting to main entrance area (Dextra Lighting – Avalon Wallpack LED wall light or similar and approved) to be wired to a photocell and timer.

  1 no. floodlight to West elevation (Dextra Lighting – Opus LED Floodlight or similar and approved) to be wired to a photocell and timer.

  1 no. floodlight to rear canopy area (Dextra Lighting – Opus LED Floodlight or similar and approved) to be switched internally.

• Include for providing emergency lighting to BS-5266 (Certification to be provided)

• MCB’s shall be used for lighting circuits.

• External Socket to be installed within canopy area (Contractors proposals)

• Provide and install a Videx, Paxton or equivalent door entry system for the main entrance door as follows:

  a) 1 No. Maglock (external door).
  b) 1 No. emergency green break glass unit.
  c) 1 No. exit release button.
  d) Include for wiring, commissioning and first year maintenance.
  e) Include for interfacing with the fire alarm system so that when fire alarm operates the system fails safe and the door opens.

7.02 Contractor to include for all builders work associated with the electrical installation.
8.00 MECHANICAL INSTALLATION

8.01 Employ suitably qualified engineers to carry out the mechanical installation to proposed nursery to include:

- Heating installation to contractor’s design. Existing gas fired central heating boiler to be re-used. All radiators to be LST. Proposed layout to be approved by CA.

- Provision of Hot & Cold water supplies, utilising existing water heater. Contractors design to be approved by CA and must include:
  - Connections to dishwasher (dishwasher supplied by school)
  - Connections to washing machine (Washing machine supplied by school)
  - Connections to new sinks (Kitchenette and Wet Area)
  - Connections to WHB’s & WC Pans (new toilet block)
  - Installation of an external tap (see drawing for location)
  - Include for blending valves to all sinks/whb’s.
  - Chlorinate all service pipe work on completion and provide cleanliness certificate.
  - Contractors are advised to visit the site to ascertain the full extent of the works, as lack of information will not constitute a variation claim.

8.02 Supply and install 1no. Warner Howard – Airforce High Speed low Energy Hand Dryer (white) within new toilet block. Location and height to be agreed on site.

8.03 Supply and install 2No. Vent Axia Lo-Carbon VA150T extract fans, as shown on drawing, complete with overrun timer, wall kit and PIR controller, or equal and approved (to be located within the new kitchenette and new toilet block). PIR controllers to be handed over to electrical contractor for installation.

8.04 Supply and install new 5ltr Zip Hydroboil (05552 - white). Electrical connections to be made by electrical contractor.

8.05 Contractor to include for all builders work associated with the mechanical installation.

8.06 Extra/over cost for renewing the existing central heating boiler with a Worcester-Bosch Greenstar 29CDi Classic combination boiler.
9.00 JOINERY:

9.01 Construct new timber stud partition walls as indicated on the drawings provided. Provide and fix 75 x 50mm sole plate to floor and wall plate abutments. Construct 75 x 50mm sawn s.w. studs at 400mm centres with noggins suitably placed to support board ends. Studwork to be taken up to ceiling height, allow for creating door openings as shown on the drawings provided.

9.02 Allow for installing existing doors set aside for re-use into new door frames ND03, ND04. Re-use existing ironmongery as required. Include for re-using the digi-lock currently fitted to the rear lobby door to the new office door. Both doors to be fitted with Aspex (Tel: 0116278 3506) finger guards Ref: 60670.

9.03 Supply & fit new flush FD30s paint-grade doors to the new gas meter cupboard and the new electric meter cupboards. Door furniture from the Aspex Education range Ref: A3 – Store Single Access Controlled.

9.04 Allow for fitting new timber skirting boards and architraves with one radius edge to match existing to all new partitions and where ever required.

9.05 Allow for installing internal window boards to be 25mm mdf mechanically fixed and painted as specified to windows NW01, NW02 & NW03.

9.06 Install kitchen units (Howdens Greenwich range – light oak) as per proposed kitchenette layout. Include for end panels, plinths and all fixtures and fittings as required in order to complete the works. Work tops to be Howdens 3mm radius square edged work tops (dark granite). Allow for mitered joints. Include for the following units:

1no. 600mm drawer-line sink base unit
1no. 600mm drawer-line base unit
1no. 300mm drawer-line base unit
3no. 600mm wall unit

9.07 Install range of storage units/sinks to wet area within main room. Units to be provided by Boyco Ltd. Allow a provisional sum of £1,500. Include for profit and attendance.

9.08 Allow for sw framing and 12mm mdf boxing (capped & screwed for access) to all visible pipe runs throughout the nursery, to be painted in with walls.
<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>10.00 PLASTERING</strong></td>
<td></td>
</tr>
<tr>
<td>10.01</td>
<td>Line both sides of new stud partitioning with 15mm Gyproc Duraline wallboards, fixed to studs/noggins with 60mm Gyproc Drywall timber screws. Cavity to be filled with 75mm Isover APR 1200 quilt or similar and approved. Edges to be taped with Gyproc scrim tape and apply 3mm plaster skim finish.</td>
</tr>
<tr>
<td>10.02</td>
<td>Supply, cut and fix 15mm Gyproc Duraline Wallboards to walls with wallboard adhesive to fair faced brick walls (within the new Office, Lobby and Cloaks area), scrim joints and apply 3 mm skim coat plaster finish. Leave all surfaces fully prepared and ready for decoration.</td>
</tr>
<tr>
<td>10.03</td>
<td>Line all solid external walls within new kitchenette/office area with 62.5mm Kingspan Kooltherm K18 insulated plasterboard or an equal and approved product on 25x50mm timber battens to achieve a uValue of 0.18W/m²K.</td>
</tr>
<tr>
<td>10.04</td>
<td>Allow to make good the former door &amp; window openings (D1, D2, W2 &amp; W4) and any additional disturbed plastered areas affected by the works with a base coat of browning plaster, skimmed to finish flush with existing plaster finish. Leave all surfaces fully prepared and ready for decoration.</td>
</tr>
<tr>
<td>10.05</td>
<td>E/O cost for providing a 3mm plaster skim to all existing ceilings throughout.</td>
</tr>
<tr>
<td><strong>11.00 NEW TOILET BLOCK</strong></td>
<td></td>
</tr>
</tbody>
</table>
| 11.01 | SANITARYWARE (All sanitary-ware from Armitage Shanks):  
All WC pans to be Contour 21 schools, back to wall w.c. pan, 305mm high – S3046(01), with Contour 21 small school toilet seat no cover, bottom fixing hinges – S4057(01)  
Conceala cisterns and covers, 6 litre single flush push button, side supply and internal overflow, low level connection – S362367.  
All whb's to be Sandringham 21 50cm semi-countertop washbasin, two tapholes with overflow, no chainstay hole – E8961  
Include for Avon 21 inclined non-concussive self-closing ½" pillar taps, H & C dual indices – B8267(AA)  
Blending valves are required to all taps that are accessible to pupils. Maximum discharge temperature 43°C – minimum storage temperature 60°C. |
| 11.02 | ABOVE GROUND DRAINAGE:  
Marley uPVC pipework to BS 4515 : 1983. Access must be allowed for to all pipework and fittings, any pipework boxing’s must be provided with access panels as required.  
Waste sizes : WC - 110mm, WHB - 40mm, sink - 50mm  
All appliances/fittings are to be fitted with resealing traps. |
11.03 **CUBICLES & IPS:**
- All cubicles & IPS to be from Oliveti Cubicles
- Cubicles to be Orin range - Colours: TBC.
- IPS to be 1200mm high to top.
- Vanity units to be 600mm high to counter top from FFL with Vanity treble round top, upstand and front downstand

Allow a provisional sum of £3,533.00 for the supply of the IPS/Cubicles. Include for profit and attendance and the installation of the above including providing a timber subframe. (Quotation Ref: MS5652016)

11.04 Provide 1No 300 x 600mm Mungai (Tel: 01207 521677) safety mirror above each whb. Mirrors to be fixed with stainless steel screws & dome headed caps.

11.05 Provide new soap dispensers wall mounted between whb's. Soap dispensers to be Armitage Shanks - 0302008.

11.06 Toilet roll holders to be supplied in each toilet cubicle.

### 12.00 **FLOORING:**

12.01 Allow to supply and lay Desso Protect 9990 (Dark Grey) entrance matting strictly in accordance with the manufacturer's instructions to the new Entrance lobby/Cloaks area as indicated on the drawings provided, fitted strictly in accordance with the manufactures recommended fitting instructions. Colours to be confirmed.

12.02 Allow to supply and lay Torso A147-7322 (Green) carpet within the new Office and main room as indicated on the drawing provided, fitted strictly in accordance with the manufactures recommended fitting instructions. Colours to be confirmed.

12.03 Allow for applying a latex screed to the floors prior to laying vinyl flooring. Include for providing 6mm plywood sheets mechanically fixed to floorboards where vinyl is to be laid over timber floors. Supply and lay new vinyl non slip floor covering ‘Polysafe Astral’ flooring (Alpine Green) to the Wet Area, new toilet block and main room as indicated on the drawings provided. Lay the new flooring strictly in accordance with manufacturers recommended installation details. Allow for all transitional trims, seam welding and all sundry items to complete the installation in full. Colours to be confirmed.

Including Gradus coved formers (Ref: CF32P) and Gradus cappings (Ref: TC48) to new toilet block.

12.04 Gradus transition strips to be provided at all joints between differing floor finishes or colours. Provide Clip-Top range with aluminium bases & PVC-u tops:

- Carpet to vinyl: TR55 / AFT55
- Carpet to carpet: TT37 / AFT15
- Carpet to entrance matting: TT37 / AFT15
- Vinyl to Vinyl: Seam weld
13.00 DECORATING:

13.01 Fully prepare and paint all walls throughout, including the cloaks area and both sides of all new partition walls. Allow for applying 2 coats of acrylic eggshell emulsion to the walls. Apply an initial mist/base coat to all newly plastered surfaces prior to applying the two finishing coats. All paint to be Dulux Trade or similar and approved. Colours to be confirmed.

13.02 Decorate all ceilings throughout. Allow for applying 2 coats of acrylic eggshell emulsion to the walls. Apply an initial mist/base coat to all newly plastered surfaces prior to applying the two finishing coats. All paint to be Dulux Trade or similar and approved. Colours to be confirmed.

13.03 Prepare and apply 1no. under-coat and 2no. coats of gloss finish to all door frames, architraves and skirting boards throughout. Allow for applying 1no. coat of primer to any new woodwork prior to decorating. Colours to be confirmed.

13.04 Prepare and apply 1no. under-coat and 2no. coats of gloss finish to all external woodwork. Colours to be confirmed.

14.00 TILING

14.01 Provide 3no. rows of ceramic tiles to splash backs above work tops within the wet area, kitchenette (include for tiling the new window cill) and above the vanity unit to the new toilet block as indicated on the drawings provided. Allow for min 3no. courses of ceramic tiles 150x150mm. Include for pvc trims to the perimeter of all new tiling. Grout tiles to finish. Silicone seal at junction with worktop/vanity unit. Colours to be confirmed.

15.00 FIXTURES & FITTINGS

15.01 Install 25no coat hooks (Toughooks – multi coloured) at 120mm centres mounted on a timber plinth with chamfered edges, within the cloaks area as detailed on the drawings provided. The height of the coat hooks to be confirmed.

16.00 FIRE SAFETY:

16.01 Supply and fit Fire signage to BS 5499

16.02 Supply & fix new pattresses for fire extinguishers as required.

17.00 EXTERNAL WORKS

17.01 Allow to lift and re-lay existing slabs on 25-40mm Class M grit/sand with a minimum of 150mm compacted MOT type 1 sub base as detailed on the drawings provided in order to create a level access landing area to the main entrance.

17.02 Install 6no. 500x500mm concrete pad foundations for new canopy to a min depth of 600mm. Contractor to liaise with A&S Landscapes for fixing details.
17.03 Allow PC sum of **£7,600** for installation of canopy – A&S. Include for profit and attendance.

17.04 Excavate to reduced levels for new hard standing area. Include for scabbling back existing driveway ready to receive new wearing course. Provide min 150mm of MOT type 1 stone, compacted in layers. Lay a base coarse 65mm tarmacadam with wearing coarse of 25mm. Include for 150x50mm concrete edgings to perimeter. Tarmacadam to be laid to a minimum fall of 1/80 in order to discharge any surface water into the new aco drain as shown on the drawings provided.

17.05 Install Nomow 365-Play artificial grass (55m. sq) or similar and approved. Include for excavating to reduced levels and clearing all waste materials from site. Install artificial grass strictly in accordance with the manufacturer’s instructions. Include for 150mm type 1 MOT stone base well compacted with a 25mm sharp sand blinding and concrete edgings to the perimeter. Grade levels to create level access to the new doors (ND02). Artificial grass to be adhered to newly formed concrete plinth to perimeter. Contact Nomow Artificial Grass Ltd on 0800 587 0380.

17.06 Excavate a trench 450mm wide and min 600mm deep from the school boiler room to the proposed nursery for links to fire alarm/intruder alarm & data. Include for backfilling the trench with MOT type 1 stone, compacted in layers of 150mm and make good tarmacadam to carpark.

17.07 Clear vegetation to rear of garden and dispose of all waste from site.

17.08 Cut back girth to Leylandii trees to Western boundary at low level (to a height of 2m high) and dispose of all waste from site.

**18.00 FENCING WORKS:**

18.01 Install new 1800mm high timber panel fencing with concrete posts to both eastern and rear boundaries (approximately 45m). New fencing to be set inside the boundary line to the Eastern Boundary. Existing fence to remain in place. All timber fencing panels to be tantalised timber with min 10yr warranty.

18.02 Install 1800mm high Weldmesh Security fencing to front of site as indicated on the proposed sit plan (approximately 20m). New fence to be Betafence Nylofor 3-M or similar and approved, installed strictly in accordance with the manufacturer’s instructions. Include for installing a 1000mm wide Nylofor swing gate with concealed mortice lock fitted within the inside of the gate frame complete with interlocking slam plates, to be key operated. Features to include:

- Fully adjustable hinges, rear hung to prevent tampering.
- Lockable ground bolts or single and double leaf gates.
- Standard gate is inward opening.
- All gates are supplied with free standing posts.
- Optional serrated topping to deter climbing.

Always refer to BS 1722 for details / clarification – copy available in archive room & check existing styles on site if matching or extending.
18.03 Install new Timber palisade fencing around Leylandii trees to the Western boundary and to segregate the rear garden area as detailed on the proposed site plan. Include for 2no. 900mm wide gates complete with heavy duty stainless steel hinges and latch. (Approximately 25m)

Height: 900 mm
Posts: 100x100mm x 1500mm long @ max. 3.0m crs (but generally 2.25m crs)
Rails: 2No 75 x 38mm timber rails, set in 75 x 25mm mortice in posts
Pales: 75 x 20mm @ 150mm crs

All timber must be preservative treated and PAR timber.

19.00 REINSTATEMENTS

19.01 Allow for making good all grassed, hard tarmac and paved surfaces and kerbs where disturbed by the works using materials to match the existing. All reinstatement works to the satisfaction of the Contract Administrator.

19.02 Install all existing blinds (set aside).

20.00 FIRE ALARM

20.01 Allow a PC sum of £3,425 for the supply, installation and commissioning of the Fire Alarm System. These works are to be carried out by CDS Ltd. Contact Martin LLiffe on 0116 275 0177 (martin@cdsys.co.uk)

20.02 Include for profit and attendance

21.00 INTRUDER ALARM

21.01 Allow a PC sum of £1,900 for the supply, installation and commissioning of the Intruder Alarm System. These works are to be carried out by ADT Ltd. Contact: Bob Hardy on 0116 264 1770 (rohardy@tycoint.com)

21.02 Include for profit and attendance

22.00 COMPLETION

22.01 On completion of all the work the contractor is to cart away all material off site and leave all areas of the sites in a clean and tidy condition to the satisfaction of the project officer.
### SCHEDULE OF WORKS

#### COLLECTION SHEET

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To Form of Tender £.
FINAL SUMMARY
FINAL SUMMARY

£   p

SECTION ONE: PRELIMINARIES  - FIXED
   - TIME RELATED

SECTION TWO: REFERENCE SPECIFICATION

SECTION THREE: SCHEDULE OF WORKS

APPENDIX 1: ASBESTOS SURVEY

APPENDIX 2: SUPPLEMENTARY INFORMATION

TOTAL CARRIED TO FORM OF TENDER £   __________
APPENDIX 1

ASBESTOS REPORT
ASBESTOS SURVEY REPORT

SURVEY REPORT NO: YMD/RD/JC/04896

Caretakers Bungalow
Parklands Primary School
St Thomas Road
Wigston
Leicester
Leicestershire
LE18 4TA

CLIENT: YMD Boon Ltd

DATE: 12th March 2015

SURVEYED BY: A. Bennett

AUTHORIZED BY: R. Hubbard

SIGNED:
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<th>TITLE</th>
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</thead>
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<td>Introduction</td>
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<tr>
<td>14.0</td>
<td>Survey Findings</td>
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<tr>
<td>15.0</td>
<td>Survey Report Sheets</td>
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<td>APPENDIX A</td>
<td>Site Plans</td>
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<td>APPENDIX B</td>
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<td>17</td>
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</table>
### 1.0 Executive Summary Table

<table>
<thead>
<tr>
<th>Client:</th>
<th>YMD Boon Ltd</th>
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<tr>
<td>Site address:</td>
<td>Caretakers bungalow, Parklands Primary School, St. Thomas Road, Wigston, Leicester, Leicestershire LE18 4TA</td>
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<tr>
<td>BDA Surveying unique report No:</td>
<td>YMD/RD/JC/04896</td>
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<tr>
<td>Survey Date:</td>
<td>12/03/2015</td>
</tr>
<tr>
<td>Survey Type:</td>
<td>Refurbishment &amp; Demolition survey</td>
</tr>
<tr>
<td>Surveyor:</td>
<td>A. Bennett</td>
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<tr>
<td>Bulk Analysis Laboratory:</td>
<td>BDA Surveying Ltd</td>
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<tr>
<td>Number of bulk samples analysed:</td>
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<td>Analysis date:</td>
<td>13/03/2015</td>
</tr>
<tr>
<td>Analyst:</td>
<td>B. Norton</td>
</tr>
<tr>
<td>Report Approved By:</td>
<td>R. Hubbard</td>
</tr>
<tr>
<td>Signature:</td>
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</tr>
<tr>
<td>Number of areas inspected:</td>
<td>18</td>
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<td>Number of asbestos occurrences identified:</td>
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<tr>
<td>Number of High Action Priorities identified:</td>
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<tr>
<td>Number of Medium Action Priorities identified:</td>
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<tr>
<td>Number of Low Action Priorities identified:</td>
<td>0</td>
</tr>
<tr>
<td>Number of inaccessible areas:</td>
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2.0 INTRODUCTION.

An initial enquiry was received from Mr Mark Berrill on behalf of YMD Boon Ltd for the provision of a Refurbishment & Demolition Asbestos Survey to determine the presence of asbestos containing materials in Caretakers bungalow, Parklands Primary School, St. Thomas Road, Wigston, Leicester, Leicestershire LE18 4TA.

A proposal was put forward to carry out a survey, that was accepted, and a Refurbishment & Demolition Asbestos Survey of all accessible areas was undertaken on the 12th March 2015.

Further to the completion of the survey all the information gathered has been incorporated into this report to detail all asbestos containing materials located during the asbestos survey.

3.0 SITE DETAILS.

The bungalow is brick built with plaster ceilings and brick walls, the floors are concrete and wood with carpet and vinyl floor coverings. The pipework is exposed and unlagged with foam insulation present in the 2 lofts.

4.0 SURVEY PURPOSE AND OBJECTIVES.

The survey was carried out to identify as far as reasonably practicable the presence of asbestos containing materials present and their condition. This information can then be available to the client to help ensure that any asbestos occurrences can be managed safely.

5.0 SURVEY METHOD AND TYPE.

A Refurbishment and Demolition Survey was carried out prior to the Refurbishment of the caretakers bungalow as specified by the client.

Methods used are as described within HSG 264 and therefore material assessment may not be required within the report. However assessments have been included but all occurrences have been given a High action priority as it is presumed that they will be disturbed during the proposed refurbishment works.

6.0 SAMPLING STRATEGY.

The sampling method used varied depending on the type of material. All asbestos containing materials or materials suspected of containing asbestos were treated with caution and dust suppression techniques used. Samples were removed carefully and double wrapped in polythene sample bags. Each sample was then individually labelled with a unique identification number, the date taken, the location and the condition of the material.

A total of 4 bulk samples were collected and analysed in house by BDA Surveying Limited (UKAS accredited Laboratory Reference 2791) The sample analysis procedure is described in our Documented In-house Method 2.

All samples were examined to detect the presence of asbestos fibres. Fibres in the samples were identified using a stereo microscope, polarised light and dispersion staining technique as described in the Testing Laboratory Document “Identification of Bulk Materials” which incorporates the method set out in HSG 248.
During the survey there may have been occasions where samples were not taken. These are listed below:

- Unsafe access.
- Identical materials had already been sampled.

In the case of unsafe access an assumption shall be made to the presence of asbestos containing materials. Where generically similar materials had already been sampled, a reference will be made to the sample number and the type of asbestos present.

7.0 AREAS EXCLUDED.

All safely accessible areas within the premises were surveyed. Areas considered not accessible due to the continued use of the building and potential damage further investigation will have caused are listed in section 13 Inaccessible areas.

8.0 UKAS ACCREDITATION

BDA Surveying holds a UKAS accreditation (UKAS Inspection Body No. 365) as a Type C inspection body for undertaking Surveys only.

The Action Priority that is shown on the Asbestos register and Survey Report Sheets is a guide for those managing the asbestos materials identified in this report. It is not included in the UKAS Accreditation held by BDA Surveying Ltd.

9.0 DISCLAIMER

Every effort has been made to identify all asbestos materials so far as was reasonably practical to do so within the scope of the survey and attached report. Methods used to carry out the survey were agreed with the client prior to any works being commenced.

Survey techniques used involves trained and experienced surveyors using the combined approach with regard to visual examination and necessary bulk sampling. It is always possible after a survey that asbestos based materials of one sort or another may remain in the property or area covered by that survey, this could be due to various reasons:

- Asbestos materials existing within areas not specifically covered by this report are therefore outside the scope of this survey.
- Asbestos may well be hidden as part of the structure to a building and not visible until the structure is dismantled at a later date.
- Debris from previous asbestos removal projects may well be present in some areas; general asbestos debris does not form part of this survey however all good intentions are made for its discovery.
- This survey will detail all areas accessed and all samples taken; where an area is not covered by this survey it will be due to no access for one reason or another, e.g. working operatives, sensitive location or just simply no access. It may have been necessary for the limits of the surveyor’s authority to be confirmed prior to the survey.
- Access for the survey may be restricted for many reasons beyond our control such as height, inconvenience to others, immovable obstacles or confined space. Where electrical equipment is present and presumed in the way of the survey no access will be attempted until proof of its safe state is given. Our operatives have a duty of care under the Health and Safety at Work Act 1974 for both themselves and others.
• Reasonable access to inspect buildings/areas covered within the survey is the responsibility of the client. Comment will not be made on the presence of asbestos containing materials in areas where reasonable access cannot be gained.

• We will not access any rooms, voids areas etc. if the removal or disturbance of asbestos containing materials is required.

• BDA Surveying Ltd. Cannot be held responsible for any damaged caused as part of the survey carried out on your behalf. Due to the nature and necessity of sampling for asbestos some damage is unavoidable and will be limited to just that necessary for the taking of the sample.

• The report is issued in confidence to the client and BDA Surveying Ltd cannot accept responsibility to any third parties whom this report may be circulated to in part or in full and any such parties rely on the contents of the report solely at their own risk.

**REFURBISHMENT & DEMOLITION SURVEY NOTES**

Every effort is made during a refurbishment & demolition survey to identify all asbestos materials present within the building (as described in HSE Guidance note HSG 264. However refurbishment & demolition surveys undertaken within buildings that are still in use may be restricted by the level of investigation that can be carried out due to the amount of damage and subsequent disruption this may cause within the building. Areas that will require further investigation prior to the proposed refurbishment works commencing are listed in Section 12 Inaccessible areas.
### 10.0 TERMINOLOGY

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<thead>
<tr>
<th><strong>Site</strong></th>
<th>The site is identified by name.</th>
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<tbody>
<tr>
<td><strong>Location</strong></td>
<td>Room / Area where asbestos containing materials are located.</td>
</tr>
<tr>
<td><strong>Component</strong></td>
<td>A description of the building component inspected e.g. ceiling, wall panel or floor covering.</td>
</tr>
<tr>
<td><strong>BDA Reference</strong></td>
<td>Each area inspected is given a unique reference number e.g. Warehouse 01. Any building component inspected within this area is then awarded a further number. For example ceiling boards within the warehouse would be given a reference of 01/01. This unique reference is shown on the site plan.</td>
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<tr>
<td><strong>Sample = ID</strong></td>
<td>This is a specific number assigned to the Sample by the UKAS accredited testing Laboratory.</td>
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<tr>
<td><strong>Product Type</strong></td>
<td>See material algorithm.</td>
</tr>
<tr>
<td><strong>Surface Treatment</strong></td>
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</tr>
<tr>
<td><strong>Asbestos Type</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Analysis Result</strong></td>
<td>Result of analysis carried out by UKAS accredited testing Laboratory i.e. Crocidolite = Blue Asbestos Amosite = Brown Asbestos Chrysotile = White Asbestos</td>
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<tr>
<td><strong>Score</strong></td>
<td>This is the numerical assessment score which is the result of adding scores in previous columns.</td>
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<tr>
<td><strong>Access</strong></td>
<td>Numerical value giving a subject assessment by the Surveyor of the ease of access to the material.</td>
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<td><strong>Materials / Assessment</strong></td>
<td>Multiplication of score and access reduced to a ranking of high, medium and low.</td>
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<tr>
<td><strong>Discussion</strong></td>
<td>Information regarding the asbestos content, condition and location of the asbestos containing material identified are included in this section. The discussion will also include advice on the future management and removal of asbestos materials present within the building.</td>
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<tr>
<td><strong>Report No. Surveyor Date</strong></td>
<td>The unique report number, date of the survey and the name of the Surveyor are shown on the title page and at the foot of all following pages of the report.</td>
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### 11.0 MATERIAL ASSESSMENT ALGORITHM DEFINITIONS

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#### PRODUCT TYPE

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</tr>
<tr>
<td>Spray Coats</td>
<td>Low Density Boards</td>
<td>Loos Textiles, Soft Gaskets or Ropes Soft Papers and Felts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loose Asbestos</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mattresses or Packing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### EXTENT OF DAMAGE / DETERIORATION

<table>
<thead>
<tr>
<th>3 = HIGH</th>
<th>2 = MEDIUM</th>
<th>1 = LOW</th>
<th>Minimal damage</th>
<th>A few scratches or surface marks Some broken edges on tiles, boards etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extensive damage</td>
<td>Less extensive damage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delamination of spray coats</td>
<td>Significant breakage of material</td>
<td>Several smaller areas revealing loose fibre board</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delamination of thermal insulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visible debris</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### SURFACE TREATMENT

<table>
<thead>
<tr>
<th>3 = HIGH</th>
<th>2 = MEDIUM</th>
<th>1 = LOW</th>
<th>0 = NEGLIGIBLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsealed lagging</td>
<td>Unsealed AIB</td>
<td>Enclosed lagging</td>
<td>Composites</td>
</tr>
<tr>
<td>Unsealed sprays</td>
<td>Encapsulated lagging</td>
<td>Enclosed sprays</td>
<td>Reinforced plastics</td>
</tr>
<tr>
<td></td>
<td>Encapsulated sprays</td>
<td>AIB with exposed face</td>
<td>Resins</td>
</tr>
<tr>
<td></td>
<td></td>
<td>painted or encapsulated</td>
<td>Vinyl tiles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cement sheets</td>
<td></td>
</tr>
</tbody>
</table>

#### ASBESTOS TYPE

<table>
<thead>
<tr>
<th>3 = HIGH</th>
<th>2 = MEDIUM</th>
<th>1 = LOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crocidolite</td>
<td>Amphiboles excluding Crocidolite</td>
<td>Chrysotile</td>
</tr>
</tbody>
</table>

#### ACCESS

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asbestos material not readily accessible e.g. Roof space, duct</td>
<td>Asbestos material more likely to be accessed but not in areas of high usage e.g. Cleaners cupboards, Fuel stores,</td>
<td>Asbestos material in area of high usage with likelihood of disturbance high e.g. Classrooms, Offices, Corridors, Toilets</td>
</tr>
</tbody>
</table>
**ACTION PRIORITY**

Multiply the result of the material assessment algorithm by the access number to attain action priority figure. The Action Priority is a guide for those managing the asbestos materials identified in this report. It is not included in the UKAS Accreditation held by BDA Surveying Ltd.

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 and Lower</td>
<td>15 to 20</td>
<td>Above 20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LOW</th>
<th>MEDIUM</th>
<th>HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presents a low asbestos risk during normal use of the building, may require consideration during refurbishment or repair work</td>
<td>Does not present immediate risk but remedial works required i.e. encapsulation or labelling that should be included in asbestos management plan and instigated within reasonable timescale</td>
<td>Significant asbestos risk Immediate action required i.e. prohibit access to affected area.</td>
</tr>
</tbody>
</table>

**NOTE:** Reassessment of asbestos containing materials identified may be required following changes in the materials condition or in the use of the areas they are located in.
### ASBESTOS REGISTER

<table>
<thead>
<tr>
<th>Area Ref No.</th>
<th>Location</th>
<th>Building Component</th>
<th>Asbestos Type</th>
<th>Action Priority</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/3</td>
<td>Office</td>
<td>Adhesive to floor tile</td>
<td>Chrysotile</td>
<td>High</td>
<td>15</td>
</tr>
<tr>
<td>04/3</td>
<td>Kitchen</td>
<td>Adhesive to floor tile</td>
<td>Chrysotile</td>
<td>High</td>
<td>15</td>
</tr>
<tr>
<td>05/3</td>
<td>Store</td>
<td>Adhesive to floor tile</td>
<td>Chrysotile</td>
<td>High</td>
<td>15</td>
</tr>
<tr>
<td>14/3</td>
<td>Store</td>
<td>Adhesive to floor tile</td>
<td>Chrysotile</td>
<td>High</td>
<td>15</td>
</tr>
</tbody>
</table>

**Note:**

It should be noted that all asbestos occurrences have been given a High action priority as it is assumed they will be disturbed during the proposed alteration works.
### 13.0 INACCESSIBLE AREAS

<table>
<thead>
<tr>
<th>Area/Ref. No</th>
<th>Location</th>
<th>Building Element That Could Not Be Accessed For Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ALL AREAS ACCESSED</td>
</tr>
</tbody>
</table>
14.0 SURVEY FINDINGS

Note: - Only areas indicated below were inspected during this Refurbishment & Demolition Survey. No Comment can be made about the presence of asbestos containing materials in any other areas.

Ref: 01 – Loft

Ceiling:         Wood & felt
Walls:          Brick
Floor:          Wood & plaster
Pipework:       Exposed & unlagged, Machine made mineral fibre with foam
Insulation:     Machine made mineral fibre with polystyrene
Tank:           Metal, Machine made mineral fibre
Chimney:        Brick

Ref: 02 – Entrance porch

Ceiling:         Plaster
Walls:          Plaster & brick
Floor:          Concrete, carpet – Screeding – Sample No. BN/16211 – Non detected
Pipework:       Exposed & unlagged

Ref: 03 – Office

Ceiling:         Plaster
Walls:          Plaster & brick
Floor:          Concrete, carpet – Floor adhesive – Sample No. BN/16212 – Chrysotile – Page no. 15
Pipework:       Exposed & unlagged
Chimney:        Plaster & brick – No asbestos materials present where accessed through vent
Door beading:   Wood

Ref: 04 – Kitchen

Ceiling:         Plaster
Walls:          Plaster, brick & ceramic tiles
Floor:          Concrete, modern vinyl – Floor adhesive – As Sample No. BN/16212 – Chrysotile – Page no. 15
Pipework:       Exposed & unlagged
Pad to sink:    Modern - No asbestos materials present
Extractor:      Modern

Ref: 05 – Store

Ceiling:         Plaster
Walls:          Plaster & brick
Floor:          Concrete, vinyl – Floor adhesive – As Sample No. BN/16212 – Chrysotile – Page no. 15
Pipework:       Exposed & unlagged

Ref: 06 – Corridor

Ceiling:         Plaster
Walls:          Brick
Floor:          Concrete, modern vinyl – Screeding – As Sample No. BN/16211 – Non detected
Pipework:       Exposed & unlagged
14.0 SURVEY FINDINGS

Ref: 07 – Toilet

Ceiling: Plaster
Walls: Plaster & brick
Floor: Concrete, vinyl – Screeding – As Sample No. BN/16211 – Non detected
Pipework: Exposed & unlagged
Cistern: Ceramic

Ref: 08 – Store

Ceiling: Plaster
Walls: Brick
Floor: Concrete – Screeding – As Sample No. BN/16211 – Non detected
Pipework: Exposed & unlagged
Boiler: Modern - No asbestos materials present
Gas meter: Modern - No asbestos materials present

Ref: 09 – Corridor

Ceiling: Plaster
Walls: Plaster & brick
Floor: Wood, carpet
Pipework: Exposed & unlagged

Ref: 10 – Disabled WC

Ceiling: Plaster
Walls: Plaster, brick & ceramic tiles
Floor: Wood & modern vinyl
Pipework: Exposed & unlagged
Cistern: Ceramic

Ref: 11 – Office

Ceiling: Plaster
Walls: Plaster & brick
Floor: Wood, carpet
Pipework: Exposed & unlagged
Door beading: Wood
Riser boxing: Wood - No asbestos materials present – Pipes - Exposed & unlagged

Ref: 12 – Office

Ceiling: Plaster
Walls: Plaster & brick
Floor: Wood, carpet
Pipework: Exposed & unlagged
Door beading: Wood
Riser boxing: Wood - No asbestos materials present – Pipes - Exposed & unlagged
14.0 SURVEY FINDINGS

Ref: 13 – Office

Ceiling: Plaster
Walls: Plaster & brick
Floor: Wood, carpet
Pipework: Exposed & unlagged
Boxing: Wood - No asbestos materials present – Pipes - Exposed & unlagged
Door beading: Wood

Ref: 14 – Store

Ceiling: Plaster
Walls: Plaster & brick
Floor: Concrete, carpet – Floor adhesive – As Sample No. BN/16212 – Chrysotile – Page no. 15
Pipework: Exposed & unlagged
Water heater: Modern - No asbestos materials present
Electrical switchgear: Modern - No asbestos materials present

Ref: 15 – Loft

Ceiling: Wood & felt
Walls: Brick
Floor: Wood & plaster
Pipework: Exposed & unlagged, machine made mineral fibre with foam
Insulation: Machine made mineral fibre

Ref: 16 – Store

Ceiling: Plaster
Walls: Brick
Floor: Concrete
Pipework: Exposed & unlagged, machine made mineral fibre with foam
Electrical switchgear: Modern - No asbestos materials present

Ref: 17 – Garage

Ceiling: Cement sheets – Sample no. BN/16213 – Non detected
Walls: Wood & concrete
Floor: Concrete
Pipework: Not applicable

Ref: 18 – External

Undercloaking: Sample No. BN/16214 – Non detected
Soffits: PVC
Roof tiles: Stone
Guttering/downpipes: Plastic & metal
Fascias: Wood
Panel to wall: PVC/metal
Board above door: Wood
Chimney: Brick
Flue: Metal
**Site**

<table>
<thead>
<tr>
<th>Site</th>
<th>Caretakers bungalow, Parklands Primary School, St. Thomas Road, Wigston, Leicester, Leicestershire LE18 4TA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Office, Kitchen &amp; Stores</td>
</tr>
<tr>
<td>Component</td>
<td>Floor Adhesive</td>
</tr>
<tr>
<td>BDA Reference</td>
<td>03/3, 04/3, 05/3 &amp; 14/3</td>
</tr>
<tr>
<td>Sample No.</td>
<td>BN/16212</td>
</tr>
</tbody>
</table>

**Photo Ref: 001**

---

**Material Assessment Algorithm**

| Amount | 30.5 M² | Product Type | 1 | Damage | 0 | Surface Treatment | 0 | Asbestos Type | 1 | Score | 2 | Access | 3 | Total | 6 | Action Priority | High |

**Discussion**

The adhesive to the floor in the locations listed above contain Chrysotile (white asbestos).

The floor adhesive is unlikely to give rise to significant airborne fibre release and so may be left in situ, however drilling or abrading of the adhesive i.e. sanding with power tools etc, may lead to an airborne fibre release and should be avoided.

If future repair/refurbishment works will lead to the disturbance/removal of the adhesive, the Control of Asbestos Regs 2012 do not require the use of a licensed asbestos removal contractor for the removal of asbestos products of this type however it should be disposed of as asbestos waste.
Appendix B
Bulk Sample Analysis Test Report
<table>
<thead>
<tr>
<th>Sample No</th>
<th>Bulk Analyst</th>
<th>YMD/RD/JC/04896</th>
<th>Job No</th>
<th>Number of Samples</th>
<th>Collected By</th>
<th>Date Bulks Received</th>
<th>Client</th>
</tr>
</thead>
<tbody>
<tr>
<td>BN/16211</td>
<td>A. Bennett</td>
<td>13/03/2015</td>
<td>YMD Boon Ltd</td>
<td>York House</td>
<td>Fernie Road</td>
<td>Market Harborough</td>
<td>Leicestershire</td>
</tr>
</tbody>
</table>

**CERTIFICATE OF BULK SAMPLE ANALYSIS**

**Certificate Id:** 1

**BDA Surveying Ltd bear no responsibility for samples taken by a third party or interpretation of results due to having no involvement in sampling locations, methods of sampling or sample size.**

All analysis carried out as described in BDA Surveying in-house methods, which is in accordance with HSG248. Certificate shall not be reproduced except in full without the written approval of the laboratory.

**BDA Office Laboratory**

**Date Bulks Received:** 13/03/2015

**Collected By:** A. Bennett

**Number of Samples:** 4

**Job No:** YMD/RD/04896

<table>
<thead>
<tr>
<th>Sample Address</th>
<th>Comments</th>
<th>Identification</th>
<th>Client Ref.</th>
<th>Description</th>
<th>Location</th>
<th>Building</th>
<th>Room</th>
<th>Sample Address</th>
<th>Sample Id</th>
<th>Issued</th>
<th>Analyst</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care Takers Bungalow</td>
<td>Non-detected</td>
<td>18/1</td>
<td>Floor screeding</td>
<td>Care Takers Bungalow</td>
<td>13/03/15</td>
<td>Bill Norton</td>
<td>Oadby</td>
<td>Chapel Street</td>
<td>BN/16211</td>
<td>13/03/15</td>
<td>Bill Norton</td>
</tr>
<tr>
<td>Care Takers Bungalow</td>
<td>Non-detected</td>
<td>17/7</td>
<td>Cement sheets</td>
<td>Care Takers Bungalow</td>
<td>13/03/15</td>
<td>Bill Norton</td>
<td>Oadby</td>
<td>Chapel Street</td>
<td>BN/16212</td>
<td>13/03/15</td>
<td>Bill Norton</td>
</tr>
<tr>
<td>Care Takers Bungalow</td>
<td>Non-detected</td>
<td>03/3</td>
<td>Floor adhesive</td>
<td>Care Takers Bungalow</td>
<td>13/03/15</td>
<td>Bill Norton</td>
<td>Oadby</td>
<td>Chapel Street</td>
<td>BN/16213</td>
<td>13/03/15</td>
<td>Bill Norton</td>
</tr>
<tr>
<td>Care Takers Bungalow</td>
<td>Non-detected</td>
<td>02/3</td>
<td>Floor screeding</td>
<td>Care Takers Bungalow</td>
<td>13/03/15</td>
<td>Bill Norton</td>
<td>Oadby</td>
<td>Chapel Street</td>
<td>BN/16214</td>
<td>13/03/15</td>
<td>Bill Norton</td>
</tr>
</tbody>
</table>

**Last Modified:** 12/11/2012  **Revision No.:** 6

**BDA 069 Last Revised: 12/11/2012 Revision No.: 6

**ASBESTOS MANAGEMENT & CONSULTANCY**

Chapel Street, Oadby, Leicester LE2 5AD

Tel: 0116 271 9179 · Fax: 0116 271 6478

Email: info@bdasurveying.co.uk

Web: www.bdasurveying.co.uk
APPENDIX 2

PRE CONSTRUCTION INFORMATION
# PRE-CONSTRUCTION INFORMATION

## PROJECT BRIEF:

<table>
<thead>
<tr>
<th>Project Ref:</th>
<th>J2728 – Parklands Primary School – Proposed Nursery</th>
</tr>
</thead>
</table>
| Project Location: | Parklands Primary School  
St Thomas Road  
South Wigston  
LE184TA |
| Specific Area Of Works: | Caretakers Bungalow |
| Key Dates: | Anticipated start date:  
Critical completion date:  
Minimum mobilisation period allowed – 2 weeks |

## PROJECT DIRECTORY:

| CLIENT: | The Governors  
Parkland Primary School |
| PRINCIPAL DESIGNER: | Mark Berrill - YMD Boon Ltd |
| M&E CONSULTANT: | Unconfirmed: Tender stage issue |
| STRUCTURAL ENGINEER: | Steve Bacon Design |
| OTHER DESIGNERS: | Unconfirmed: Tender stage issue |
| PRINCIPAL CONTRACTOR: | Unconfirmed: Tender stage issue |
| CONTRACTORS: | Unconfirmed: Tender stage issue |

## EXISTING INFORMATION:

<table>
<thead>
<tr>
<th></th>
<th>Appended</th>
<th>To Follow</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Existing Asbestos Management Survey</td>
<td>-</td>
<td>Indicate when</td>
<td>N/A</td>
</tr>
<tr>
<td>2. Refurbishment/Demolitions (Asbestos) Survey</td>
<td>See Appendix 1</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>3. Existing Structural Drawings</td>
<td>DRWG – 15106/01</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>4. Existing Service Information</td>
<td>-</td>
<td>-</td>
<td>N/A</td>
</tr>
<tr>
<td>5. Designer Risk Assessments</td>
<td>See Appendix 2</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>6. Ground Surveys</td>
<td>-</td>
<td>-</td>
<td>N/A</td>
</tr>
<tr>
<td>7. Fragile Structures- information/surveys</td>
<td>-</td>
<td>-</td>
<td>N/A</td>
</tr>
<tr>
<td>8. Relevant extracts of existing H&amp;S Files</td>
<td>-</td>
<td>-</td>
<td>N/A</td>
</tr>
<tr>
<td>9. Contaminated land - information/surveys</td>
<td>-</td>
<td>-</td>
<td>N/A</td>
</tr>
</tbody>
</table>

The above information has been provided from existing documentation already available from the Client. The Principal Designer will review this as the contract progresses, and equally, all duty holders will be expected to raise awareness to any key information they feel is outstanding.
Contents

Client's Brief ..........................................................................................................................................................3
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Site Management Arrangements .........................................................................................................................6
Environmental Restrictions and Existing on Site Hazards ....................................................................................7
Significant Design and Construction Hazards .......................................................................................................8
Site Rules for Contractors .....................................................................................................................................9
The Health and Safety File ................................................................................................................................. 10
**Client's Brief**

Suitable arrangements for adequate planning, management and monitoring are expected from all duty holders with respect to this project. Two way communication is vital to ensuring the project is completed in a timely manner whilst considering the absolute safety of those involved or likely to be affected, by any element of these works.

Duty holders are expected to have considered health & safety goals to ensure the continued safety and health of its contractors and those in the vicinity of the works, throughout the project. Contractors should be actively encouraged during induction, team briefings and toolbox talks for input into further improving safety standards.

The Principal Contractor should consider suitable guidance relating to best practice in construction, including HSE publications as a minimum standard when planning these works, such as:

- ‘L153: The Construction (Design & Management) Regulations 2015 Guidance Book’, which provides guidance regarding the practical application of the CDMR 2015 for all duty holders;
- ‘Protecting the Public – Your Next Move (HSG 151)’ which provides advice on segregation and protection of third parties;
- Asbestos Essentials: HSE Guidance.

Contractors should also be aware of their various responsibilities under all health, safety and environmental legislation – in particular:

- The Health and Safety at Work Act 1974
- The Construction (Design & Management) Regulations 2015
- The Management of Health and Safety at Work Regulations 1999
- The Provision and Use of Work Equipment Regulations 1998
- The Control of Substances Hazardous to Health Regulations 2002
- The Work at Height Regulations 2005
- Lifting Operations and Lifting Equipment Regulations 1998
- The Control of Noise at Work Regulations 2005
- The Control of Vibration at Work Regulations 2005
- The Control of Asbestos at Work Regulations 2012
- The Workplace (Health, Safety and Welfare) Regulations 1992
- The Work at Height Regulations 2005
- The Reporting of Injuries, Diseases and Dangerous Occurrence Regulations 2013
- British Standard 5975:2008 Code of practice for temporary works procedures and the permissible stress design of false work

The above lists are not exhaustive.

NOTE: The Principal Contractor and Contractors can obtain further guidance from [http://www.hse.gov.uk/](http://www.hse.gov.uk/)
Working in Occupied Environments

SITE SAFETY FOR CLIENT EMPLOYEES, CONTRACTORS AND VISITORS:

It is foreseeable that there could be the potential for overlap with the existing undertakings of the client, despite prior arrangements to ensure the project remains completely separate where possible.

As such, the following Site Management Arrangements includes details of expected minimum standards for all contractors/duty holders on site.
Requirements of the Principal Contractor and Contractors

A Principal Contractor is the organisation or person that co-ordinates the work of the construction phase of a project involving more than one contractor so that it is carried out in a way that secures health and safety.

A Contractor can be an individual, a sole trader, a self-employed worker, or a business that carries out, manages or controls construction work as part of their business can be a contractor. This also includes companies that use their own workforce to do construction work on their own premises. The duties on contractors apply whether the workers under their control are employees, self-employed or agency workers.

The YMD Boon Approved Competency process must have been undertaken by any tendering Principal Contractor (and other duty holders) which assesses general skills, knowledge, and experience. For organisations this will also include review of the organisational capability necessary to carry out their role effectively given the scale and complexity of the project and the nature of the health and safety risks involved.

Upon appointment, the Principal Contractor will be expected to produce a suitable and sufficient Construction Phase Plan for issue to the Client (or YMD Boon as nominated representative), for approval prior to commencement on site. The construction phase plan must set out the arrangements for securing health and safety for the period during which construction work in a project is carried out. These arrangements include site rules and any specific measures put in place to where work involves one or more of the risks listed in Schedule 3 (regulation 12(2)).

The Principal Contractor shall ensure that suitable and sufficient assessments of the risks and necessary precautions relating to materials and work activities are undertaken before work is carried out.

The Principal Contractor shall monitor the progress of their works, and in the event of any unforeseen eventualities, report to the Client and Principal Designer, any matters which could affect the safe method or execution of the work or the resources required.

The Principal Contractor shall ensure that suitable risk assessments are prepared by sub-contractors under their control. All such sub-contractors will be required to demonstrate compliance with the Construction (Design and Management) Regulation 2015.

Where the designer input ceases during the construction phase, liaison will be undertaken to ensure the Principal Contractor has access to all information required to complete this phase, and the Principal Contractor will subsequently be required to complete the H&S File upon project completion.
Site Management Arrangements

COMMUNICATION AND LIAISON: All duty holders are obliged to ensure the ongoing communication and liaison between their team as well as other contracting parties, both prior to, during and upon completion of the project. This is required to ensure the transparent sharing of information, communication regarding any potential overlap, and raising of any concerns that may arise. All duty holders also are obliged to report any safety-related concerns at any time during the project.

FIRE MANAGEMENT: The Client has existing fire management arrangements for the building, including an active Fire Risk Assessment process. Contractors are expected to provide information relating to any activity or task that may impact on existing procedures, to enable discussion prior to any commencement of works. This includes the potential for key access/egress routes being blocked; fire alarm systems requiring isolation; smoke detectors requiring bagging/protection in case activating by dust; increase in combustibles stored on the premises; use and storage of hazardous substances etc.

PERMIT TO WORK SYSTEMS: Where high risk activities are unavoidable, Permit to Work Systems will be expected to be adopted and explained to the Client prior to commencement. Existing Client systems may be requested to be adopted for the purpose of adherence to insurance requirements or existing procedures, which will require prior discussion. This will ensure a formal management system is adopted to assess specific risks with clear management systems around control measures to minimise the risk. Such high risk activities may include hot works; work at height; work in confined spaces; isolation of services; lone working; excavations; working with high risk chemicals. This list is not exhaustive.

SITE SECURITY: Whether the works are external or internal within the building, during or outside key periods of operation - ongoing consideration must be given at all times to the absolute protection of those in the vicinity as well as contracting parties. Physical barriers as well as signage and communication may all be required to ensure adequate segregation is maintained. Discussion must be undertaken prior to commencement of works with the Client’s Facilities Team to ensure clarification is established around responsibilities for implementing, maintaining and monitoring security during the works.

CONTRACTOR TRANSPORT: All contractors are expected to ensure familiarisation with the site area prior to commencement. This includes consideration of any impact of contractor vehicles with adjacent areas for deliveries, unloading/loading, parking and general highway use. Where the movement of vehicles is unavoidable in potentially occupied areas, this must be by prior arrangement only and such movements should be supervised and well managed.

UNAUTHOURISED AREAS: Contractors will be expected to refrain from accessing any areas not agreed at the pre-construction stage. Works should be confined to approved areas only and permission requested from the Client should any variation be required at any time.

WELFARE PROVISIONS: An outline of welfare provisions for the on-site contracting team is required from the Principal Contractor, showing consideration of requirements detailed within Schedule 2 of The CDM Regulations 2015. No assumption should be made that existing Client facilities can be adopted, unless these are agreed in writing. Minimum provisions should therefore be relative to numbers on site, include consideration of procedures for maintenance and include suitable and sufficient sanitary conveniences; washing facilities; drinking water; changing rooms/lockers (where special clothing is required for the purpose of construction work); and facilities for rest.

There is no smoking on site or around the surrounding premises is permitted, at any time.
There are no radios permitted for use within the Client occupied work area.
Environmental Restrictions and Existing on Site Hazards

The Client's premises will naturally require clear consideration for access, deliveries, storage, waste collection, as aforementioned. Any key decisions will require formal consultation prior to the commencement of works to ensure visibility of agreements between the Client or their representative (YMD Boon).

All contractors will be expected as a minimum requirement, to adhere to highway rules and regulations in addition to those set specifically on the Client's premises.

Any temporary arrangements are expected to be reviewed upon project completion, to ensure the Client's premises are not damaged upon completion of the project, and where required, arrangements in place to make good any such issue that may arise.

**Asbestos Management:** Information relating to the type and location of asbestos containing materials (either positive or suspected), can be located in the existing information provided. Where this information requires further clarification or additional investigation, the Principal Contractor and Contractors are expected to make immediate contact with YMD Boon Limited as Client Representative to discuss.

All information provided should be perused in detail and shared with other contractors, to ensure adequate consideration can be given to any removals or segregated areas, for the purpose of the works.

Any removals must be undertaken in strict compliance with The Control of Asbestos Regulations 2012, by competent persons. Such removals must be undertaken on following direct liaison with the Client and their appointed representative, YMD Boon Limited.

Any documentation generated as a result of removals such as Air Clearance Certification and Waste Consignment Notes, must be provided to the Client and their appointed representative, YMD Boon Limited upon completion.

Any residual concerns should also be made known to the Client and their appointed representative, YMD Boon Limited upon completion.
Significant Design and Construction Hazards

The design of the project, along with the selection of construction techniques/materials should be based around the aesthetic requirement and desire to minimise any risks associated with the construction and future operation of the product. This should take account of all processes including delivery, installation, maintenance, cleaning and final decommissioning. For any residual hazards that cannot be eliminated, it is important that the design team provide suitable information providing advice for installers and users.

The Management of Health and Safety at Work Regulations 1999 require every employer to make suitable and sufficient assessment of:

– the risks to the health and safety of his employees to which they are exposed whilst at work;
– the risks to the health and safety of persons not in his employment arising out of, or in connection with, the conduct by him of his undertaking

All designers are expected to ensure two way communication, as well as providing the Principal Designer with information to support their role in overseeing planning, management, monitoring and review of all designs produced relating to this project.

Any implications from design development and/or changes to design, must be considered and no work undertaken unless this is informed and agreed by all members of the project team. Suitable control measures should be prepared to ensure risks are minimised as far as is reasonably practicable. All parties have a duty to clearly identify any significant hazards arising from their operations, to ensure all persons involved in the works are provided with maximum information.

Temporary Works is a widely used expression to describe an “engineered” solution used to support or protect an existing structure or permanent works during construction or to support an item of plant or equipment or the vertical sides or side slopes of an excavation, or to provide access. The construction of most types of permanent works will require the use of some form of temporary works.

The Principal Contractor and Contractors must develop systems and procedures for the management of temporary works these should follow British Standard 5975: 2008. This should include specific arrangements for managing temporary works, namely:-

– A competent temporary works co-ordinator is appointed.
– A temporary works supervisor is appointed.
– A temporary works file is created.
– Designs and calculations are recorded for all temporary works.
– Arrangements are put in place to monitor and review all temporary works and designs as they are being installed.
– Arrangements are put in place to inspect any temporary works prior to loading.
– Regular monitoring and inspection of all works.
– Proper planning, review and monitoring when it comes to striking any temporary works.
Site Rules for Contractors

- Contractor(s) shall be mindful of adjacent occupants as well as those within the premises, with respect of any risks during works being undertaken.
- All materials, tools and equipment should be correctly and securely stored at all times – and especially inside normal working hours. All plant/tools should be fit for purpose and part of a routine maintenance programme.
- Contractor(s) shall report any accidents, incidents or near misses immediately to the Head and/or First Aid Appointed Person and ensure copies of any paperwork are forwarded accordingly.
- Restricted/unauthorised areas shall only be accessed by prior permission and supervision provided where stated.
- Contractor(s) shall abide by all existing Company site rules to ensure their safety and that of others whilst on the premises, including the wearing of security badges at all times and using signing-in procedure.
- Where parking is available this shall be in designated zones only, speed restrictions adhered to, with the safety of others, a prime consideration at all times.
- All Contractor(s) should be clearly recognisable e.g. wearing company logo clothing to ensure identification. A competent ‘banksman’ should be deployed to supervise any vehicular movements including loading, off-loading and reversing.
- Contractor(s) will use all reasonable endeavours to prevent unauthorised access to the area of works at all times.
- No emergency access/egress routes shall be obstructed by materials, equipment or vehicles at any time.
- Where possible, hazardous substances should be eliminated from use. Where this is not possible, COSHH Assessments should be undertaken and provided prior to commencement of any works.
- Access to height equipment shall be selected as that most appropriate to the task being conducted. Ladders and steps must only be used for short duration operations, not exceeding 20 minutes per task. All scaffolds shall only be erected by competent persons and accompanied by relevant certifications and inspection records.
- Existing welfare facilities may only be adopted where prior permission is issued by the Client.
- Good housekeeping shall be maintained at all times.
- Permit to Work Systems should be agreed with the Client for any activity creating a specific hazard such as hot works, confined spaces, work at height, electrical works etc. For hot works, this will include a fire watcher being deployed to monitor the area of works, for a minimum of 60 minutes following completion and prior to leaving site.
- All contractors working on site must have been assessed for competency prior to the commencement of any works.
- All electrical equipment must be used strictly in accordance with the manufacturers’ guidance, only using 110V supply.
- Contractors are required to work safely and responsibly at all times, in accordance with The Health & Safety at Work etc Act 1974 and the terms of their engagement.
- Contractors shall wear appropriate clothing and not use inappropriate language around staff, whilst on the premises.
- Any contractors found to be in breach of statutory law or Contractor Rules, will be asked to leave site with immediate effect.

Contractors are required to work safely and responsibly at all times, in accordance with The Health & Safety at Work etc Act 1974 and the terms of their engagement.
The Health and Safety File

The health and safety file is defined as a file appropriate to the characteristics of the project, containing relevant health and safety information to be taken into account during any subsequent project. The file is only required for projects involving more than one contractor. This should contain the information needed to allow future construction work, including cleaning, maintenance, alterations, refurbishment and demolition to be carried out safely. Information in the file should alert those carrying out such work to risks, and should help them to decide how to work safely. The file should be useful to:

(a) clients, who have a duty to provide information about their premises to those who carry out work there;
(b) principal designers/designers during the development of further designs or alterations;
(c) principal contractors and contractors preparing to carry out or manage such work.

The file should form a key part of the information that the client, or the client’s successor, is required to provide for future construction projects under regulation 10. The file should therefore be kept up to date after any relevant work or surveys.

The Health & Safety File Format:

Information for inclusion within the H&S File should be issued to the Principal Designer as this is generated, and at the latest, upon project completion. This final format of which will include:
– A brief description of the work carried out;
– Any hazards that have not been eliminated through the design and construction processes, and how they have been addressed (e.g. surveys or other information concerning asbestos or contaminated land);
– Key structural principles (e.g. bracing, sources of substantial stored energy – including pre- or post-tensioned members) and safe working loads for floors and roofs;
– Hazardous materials used (e.g. lead paints and special coatings);
– Information regarding the removal or dismantling of installed plant and equipment (e.g. any special arrangements for lifting such equipment);
– Health and safety information about equipment provided for cleaning or maintaining the structure;
– The nature, location and markings of significant services, including underground cables; gas supply equipment; fire-fighting services etc;
– Information and as-built drawings of the building, its plant and equipment (e.g. the means of safe access to and from service voids and fire doors).

What information SHOULD NOT be included:-
– Pre-construction information or construction phase plan
– Construction phase risk assessments, written systems of work and COSHH assessments
– Details about the ‘normal’ operation of the building
– Construction phase accident statistics
– Information about structures, or part therefore of any structure, that have been demolished – unless there are implications for the remaining or future structure
APPENDIX 3

SUPPLEMENTARY INFORMATION