# MBC Public WC's Prelims

**08 May 2017**

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## A10 PROJECT PARTICULARS

110 THE PROJECT
- Name: New Public Toilet Facilities.
- Nature: Demolition & New Build.
- Location: St Mary's Way Public Car Park and Wilton Road Public Car Park, Melton Mowbray, Leicestershire.
- Length of contract: TBC.

120 EMPLOYER (CLIENT)
- Name: Melton Borough Council.
- Address: Parkside, Station Approach,
  Burton Street, Melton Mowbray,
  Leicestershire, LE13 1GH.
- Contact: David Blanchard.
- Telephone: 01664 502502.
- E-mail: TBC.

140 ARCHITECT/ CONTRACT ADMINISTRATOR
- Name: Gleeds Building Surveying Ltd.
- Address: Wilford House, 1 Clifton Lane, Wilford, Nottingham, NG11 7AT.
- Contact: Mark Strawther.
- Telephone: 0115 977 8000.
- E-mail: mark.strawther@gleeds.co.uk.

170 STRUCTURAL ENGINEER
- Name: HSP Consulting Ltd.
- Address: Lawrence House, 4 Meadowbank Way, Eastwood, Nottingham, NG16 3SB.
- Telephone: 01773 535555.

## A11 TENDER AND CONTRACT DOCUMENTS

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: St Mary's Way Public Car Park & Wilton Road Public Car Park, Melton Mowbray.

120 EXISTING BUILDINGS ON/ ADJACENT TO THE SITE
- Description: Existing Public Toilet Facility on St Mary's Way Public Car Park - To be demolished under this contract.

140 EXISTING UTILITIES AND SERVICES
- Drawings: (Information shown is indicative only): St Mary's Way - 0317-HSP-007 (RP Drilling Ltd).
- Other information: None.

160 SOILS AND GROUND WATER
- Information: Included in the tender documents.

170 SITE INVESTIGATION
- Report: Included in the tender documents.

200 ACCESS TO THE SITE
- Description: Both sites can be directly accessed off the local road network.
- Limitations: Shared with car park users and general public.

210 PARKING
- Restrictions on parking of the Contractor's and employees' vehicles: Parking spaces will be restricted to the designated site compound.

220 USE OF THE SITE
- General: Do not use the site for any purpose other than carrying out the Works.
- Limitations: None.

230 SURROUNDING LAND/ BUILDING USES
- General: Adjacent or nearby uses or activities are as follows:
  - Town Centre locations, nearby retail premises, public recreation space, public houses, local amenities.

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: Mark Strawther, Gleeds Building Surveying Ltd - 0115 977 8000.

## A13 DESCRIPTION OF THE WORK

120 THE WORKS
- Description: Demolition of existing public toilet facility at St Mary's Way Public Car Park. The Construction of new public toilet facilities at both sites as per specification and drawings.

130 WORK BY OTHERS CONCURRENT WITH THE CONTRACT
- Description: Utilities connection works at Wilton Road Public Car Park by Severn Trent Water & Western Power.

## A20 JCT INTERMEDIATE BUILDING CONTRACT WITH CONTRACTOR'S DESIGN (ICD)

INTERMEDIATE BUILDING CONTRACT WITH CONTRACTOR'S DESIGN (ICD)

- The Contract: JCT Intermediate Building Contract with Contractor's Design 2011 Edition incorporating New Rules of Measurement Update, August 2012 and Amendment 1, March 2015.
- Requirement: Allow for the obligations, liabilities and services described.

**THE RECITALS**

First - THE WORKS

- Comprise: The construction of new public toilet facilities.
- Location: See Clause A12/110.

Second - CONTRACTOR'S DESIGNED PORTION

- The Works include the design and construction of:
  - Underground drainage, above ground drainage, pitched roof trusses, canopy, mechanical and electrical installations.

Third - CONTRACT DRAWINGS

- The Contract Drawings: As listed in clause A11/120.

Fifth A - PRICING BY THE CONTRACTOR

- Option A will apply: Option B will be deleted.
- Priced document: Within Option A the following words will be deleted:
  - Bills of Quantities.
- Priced Activity Schedule: The words 'and has provided the Employer with a priced schedule of activities annexed to this Contract (the Activity Schedule)' will be deleted.

Ninth - INFORMATION RELEASE SCHEDULE

- The Ninth Recital will be deleted.

Eleventh - DIVISION OF THE WORKS INTO SECTIONS

- The Eleventh Recital will be deleted.

**THE ARTICLES**

3 - ARCHITECT/ CONTRACT ADMINISTRATOR

- Architect/ Contract Administrator: See clause A10/140.

5 - PRINCIPAL DESIGNER

- Principal Designer: See clause A10/150.

6 - PRINCIPAL CONTRACTOR

- Principal Contractor: See clause A10/130.

**CONTRACT PARTICULARS**

PART 1: GENERAL

Fourth Recital - EMPLOYER'S REQUIREMENTS

- Comprise: Contract documentation.

Sixth Recital - CONTRACTOR'S PROPOSALS/ CDP ANALYSIS

- Comprise: To be completed by the Contractor.
- Specific Requirements: Refer to contract documentation.

Eighth Recital and Clause 4.5 - CONSTRUCTION INDUSTRY SCHEME

- Employer at Base Date is a 'contractor' for the purposes of the CIS.

Tenth Recital - CDM REGULATIONS

- The project is notifiable.

Twelfth Recital - FRAMEWORK AGREEMENT

- Framework agreement: Does not apply.
- Details:
  - Date: -.
  - Title: -.
  - Parties: -.

Thirteenth Recital and Schedule 5 - SUPPLEMENTAL PROVISIONS

- Collaborative working: Paragraph 1 applies.
- Health and safety: Paragraph 2 applies.
- Cost savings and value improvements: Paragraph 3 applies.
- Sustainable development and environmental considerations: Paragraph 4 applies.
- Performance indicators and monitoring: Paragraph 5 applies.
- Notification and negotiation of disputes: Paragraph 6 applies.
- Where paragraph 6 applies, the respective nominees of the parties are:
  - Employer's nominee: Scott Kenna - Gleeds Building Surveying Ltd.
  - Contractor's nominee: _____. Or such replacement as each party may notify to the other from time to time.

Article 8 - ARBITRATION

- Article 8 and clauses 9.3 to 9.8 (arbitration) apply.

Clause 1.1 - BASE DATE

- Base Date: 23/05/17.

Clause 1.1 - DATE FOR COMPLETION OF THE WORKS

- Date for completion of the Works (where completion by sections does not apply): 1st December 2017.

Clause 1.7 - ADDRESSES FOR SERVICE OF NOTICES

- Employer:
  - Address: See A10/120.
  - Fax number: See A10/120.
- Contractor:
  - Address: _____.
  - Fax Number: _____

Clause 2.4 - DATE OF POSSESSION OF THE SITE

- Date of Possession of the site: 01/12/17.

Clause 2.5 - DEFERMENT OF POSSESSION OF THE SITE

- Clause 2.5 does not apply.
- Where clause 2.5 applies, maximum period of deferment (if less than six weeks) is -.

Clause 2.23.2 - LIQUIDATED DAMAGES

- Damages: At the rate of £1,000 per week.

Clause 2.30 - RECTIFICATION PERIOD

- Period: Twelve months from the date of practical completion of the Works.

Clause 2.34.3 - CONTRACTOR'S DESIGNED PORTION

- Limit of Contractor's liability for loss of use: unlimited.

Clause 4.6 - ADVANCE PAYMENT AND ADVANCE PAYMENT BOND

- Advance payment: Clause 4.6 does not apply.

Clause 4.7.1 - INTERIM PAYMENTS - DUE DATES

- The first due date is: the last business day in the first full month of the contract, and thereafter the same date in each month or the nearest Business Day in that month.

Clause 4.8.1 - INTERIM PAYMENTS - PERCENTAGE OF VALUE

- Not achieved practical completion: Where the Works, or those works in a section, have not achieved practical completion, the percentage of total value in respect of the works that have not achieved practical completion is 95%.
- Completed works: Where the Works, or those works in a section, have achieved practical completion, the percentage in respect of the completed works is 97 1/2 %.

Clause 6.4.1.2 - CONTRACTOR'S INSURANCE - INJURY TO PERSONS OR PROPERTY

- Insurance cover (for any one occurrence or series of occurrences arising out of one event): £10,000,000.

Clause 6.5.1 - INSURANCE - LIABILITY OF EMPLOYER

- Insurance may be required.
- Minimum amount of indemnity for any one occurrence or series of occurrences arising out of one event: £10,000,000.

Clause 6.7 and Schedule 1 - INSURANCE OF THE WORKS - INSURANCE OPTIONS

- Schedule 1: Insurance option A applies.
- Percentage to cover professional fees: 15 per cent.
- If option A applies, annual renewal date (as supplied by the Contractor): _____.

Clause 6.16 - CONTRACTOR'S DESIGN PORTION - PROFESSIONAL INDEMNITY INSURANCE

- Level of cover: Amount of indemnity required:
  - relates to claims or series of claims arising out of one even;
  - and is £ £5,000,000.
- Cover for pollution and contamination claims: Is not required.
- Expiry of required period of CDP Professional Indemnity Insurance: 6 years.

Clause 8.9.2 - PERIOD OF SUSPENSION (TERMINATION BY CONTRACTOR)

- Period of suspension: Two months.

Clauses 8.11.1.1 to 8.11.1.5 - PERIOD OF SUSPENSION (TERMINATION BY EITHER PARTY)

- Period of suspension: Two months.

Clause 9.2.1 - ADJUDICATION

- The Adjudicator is: Royal Institution of Chartered Surveyors.
- Nominating body - where no Adjudicator is named or where the named Adjudicator is unwilling or unable to act (whenever that is established): The Royal Institution of Chartered Surveyors.

Clause 9.4.1 - ARBITRATION

- Appointor of Arbitrator (and of any replacement): President or a Vice President of 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

SECTION 5: VARIATIONS

SECTION 6: INJURY, DAMAGE AND INSURANCE

SECTION 7: ASSIGNMENT AND COLLATERAL WARRANTIES

SECTION 8: TERMINATION

SECTION 9: SETTLEMENT OF DISPUTES

EXECUTION

- The Contract: Will be executed under hand.

## A30 TENDERING/ SUBLETTING/ SUPPLY

**MAIN CONTRACT TENDERING**

110 SCOPE

- General: These conditions are supplementary to those stated in the Invitation to Tender and on the form of tender.

145 TENDERING PROCEDURE

- General: In accordance with NBS Guide to Tendering for Construction Projects.
- Errors: Alternative 1 is to apply.

160 EXCLUSIONS

- 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.

170 ACCEPTANCE OF TENDER

- 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.

190 PERIOD OF VALIDITY

- Period: After submission or lodgement, keep tender open for consideration (unless previously withdrawn) for not less than 13 weeks.
- Date for possession/ commencement: See section A20.

**PRICING/ SUBMISSION OF DOCUMENTS**

210 PRELIMINARIES IN THE SPECIFICATION

- Measurement rules: Preliminaries/ General Conditions must not be relied on as having been prepared in accordance with SMM7.

250 PRICED DOCUMENTS

- Alterations: Do not alter or qualify the priced documents 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.

310 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.

440 SCHEDULE OF RATES

- Schedule of rates (unpriced): Included with the tender documents. The Contractor may insert additional items.
- Fully priced copy: Submit with the tender documents.

480 PROGRAMME

- Programme of work: Prepare a summary showing the sequence and timing of the principal parts of the Works and periods for planning and design. Itemize any work which is excluded.
- Submit: With tender.

510 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: 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: With the Tender.

570 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.

590 SITE WASTE MANAGEMENT PLAN

- Person responsible for developing the Plan: The Contractor.
- Content: Include details of:
  - Principal Contractor for the purposes of the plan
  - Location of the site.
  - Description of the project.
  - Estimated project cost.
  - Types and quantities of waste that will be generated.
  - Resource management options for these wastes including proposals for minimization/ reuse/ recycling.
  - The use of appropriate and licensed waste management contractors.
  - Record keeping procedures.
  - Waste auditing protocols.
- Additional requirements: -.
- Submit with tender.

**SUBLETTING/ SUPPLY**

630 DOMESTIC SUBCONTRACTS

- General: Comply with the Construction Industry Board 'Code of Practice for the selection of subcontractors'.
- List: Provide details of all subcontractors and the work for which they will be responsible.
- Submit: Within one week of request.

## A31 PROVISION, CONTENT AND USE OF DOCUMENTS

**DEFINITIONS AND INTERPRETATIONS**

110 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.

120 COMMUNICATION

- Definition: 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.

130 PRODUCTS

- Definition: 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.

135 SITE EQUIPMENT

- Definition: 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.

150 CONTRACTOR'S DESIGN

- Meaning: Design to be carried out or completed by the Contractor and supported by appropriate contractual arrangements, to correspond with specified requirements.

155 SUBMIT PROPOSALS

- Meaning: Submit information in response to specified requirements.

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.

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.

250 CURRENCY OF DOCUMENTS AND INFORMATION

- Currency: References to published documents are to the editions, including amendments and revisions, current on the date of the Invitation to Tender.

260 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 EMPLOYER**

410 ADDITIONAL COPIES OF DRAWINGS/ DOCUMENTS

- Additional copies: Issued free of charge.

440 DIMENSIONS

- Scaled dimensions: Do not rely on.

450 MEASURED QUANTITIES

- Ordering products and constructing the Works: The accuracy and sufficiency of the measured quantities is not guaranteed.
- Precedence: The specification and drawings shall override the measured quantities.

460 THE SPECIFICATION

- Coordination: All sections must be read in conjunction with Main Contract Preliminaries/ General conditions.

**DOCUMENTS PROVIDED BY CONTRACTOR/ SUBCONTRACTORS/ SUPPLIERS**

510 DESIGN AND PRODUCTION INFORMATION

- Master programme: Make reasonable allowance for completing design/ production information, submission (including information relevant to the CDM Regulations), comment, inspection, amendment, resubmission and reinspection.
- Design/ production information: Submit two copies, one could be returned with comments and this will be deemed to be a direction, notice or instruction under the Contract. Ensure that any necessary amendments are made without delay and resubmit unless it is confirmed that it is not required.
- Contractor's changes to Employer's Requirements: Support request for substitution or variation with all relevant information.
- Employer's amendments to Employer's Requirements: If considered to involve a variation, which has not already been acknowledged as a variation, notify without delay (maximum period 7 days), and do not proceed until instructed. Claims for extra cost, if made after it has been carried out, may not be allowed.
- Final version of design/ production information: Submit two copies.

600 CONTRACTOR'S DESIGN INFORMATION

- General: Complete the design and detailing of parts of the Works as specified.
- Provide:
  - Production information based on the drawings, specification and other information.
  - Liaison to ensure coordination of the work with related building elements and services.
- Master programme: Make reasonable allowance for completing design/ production information, submission (including information relevant to the CDM Regulations), comment, inspection, amendment, resubmission and reinspection.
- Information required: Underground drainage, above ground drainage, canopy, menchanical and electrical and timber roof truss.
  - Format: Electronic.
  - Number of copies: Two.
- Submit: Within one week of request.

620 AS BUILT DRAWINGS AND INFORMATION

- Contractor designed work: Provide drawings/ information:
  - As built drawings and manuals for all installed works.
- Submit: At least two weeks before date for completion.

630 TECHNICAL LITERATURE

- Information: Keep on site for reference by all supervisory personnel:
  - Manufacturers' current literature relating to all products to be used in the Works.
  - Relevant British, EN or ISO Standards.

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.
- Information location: In Building Manual.
- Emergency call out services: Provide telephone numbers for use after completion. Extent of cover: twenty four hours week days only.

## 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.

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: Excellent.

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.

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**

210 PROGRAMME

- Master programme: When requested and before starting work on site, submit in an approved form a master programme for the Works, which must include details of:
  - Design, production information and proposals provided by the Contractor/ Subcontractors/ Suppliers, including inspection and checking (see section A31).
  - Planning and mobilization by the Contractor.
  - Earliest and latest start and finish dates for each activity and identification of all critical activities.
  - 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 (see section A54)
  - Work by or on behalf of the Employer and concurrent with the Contract (see section A50). The nature and scope of which, the relationship with preceding and following work and any relevant limitations are suitably defined in the Contract Documents.
- Exclusions: Where and to the extent that the programme implications for work which is not so defined are impossible to assess, the Contractor should exclude it and confirm this when submitting the programme.
- Submit: two copies.

230 SUBMISSION OF PROGRAMME

- Further information: Submission of the programme will not relieve the Contractor of the responsibility to advise of the need for further drawings or details or instructions in accordance with the Contract.

250A 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.
-

260 SITE MEETINGS

- General: Site meetings will be held to review progress and other matters arising from administration of the Contract.
- Frequency: Every two weeks.
- Location: Within the site compound office.
- 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.

265 CONTRACTOR'S PROGRESS REPORT

- General: Submit a progress report at least 48 hours before the site meeting.
- Content: Notwithstanding the Contractor's obligations under the Contract the report must include:
  - A progress statement by reference to the master programme for the Works.
  - Details of any matters materially affecting the regular progress of the Works.
  - Subcontractors' and suppliers' progress reports.
  - Any requirements for further drawings or details or instructions to fulfil any obligations under the Conditions of Contract.

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.

**CONTROL OF COST**

410 CASH FLOW FORECAST

- Submission: Before starting work on site, submit a forecast showing the gross valuation of the Works at the date of each Interim Certificate throughout the Contract period. Base on the programme for the Works.

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.
- Include:
  - A detailed breakdown of the cost, including any allowance for direct loss and expense.
  - Details of any additional resources required.
  - Details of any adjustments to be made to the programme for the Works.
  - Any other information as is reasonably necessary to fully assess the implications of issuing such an instruction.
- Inability to comply: Inform immediately if it is not possible to comply with any of the above requirements.

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.

475 LISTED PRODUCTS STORED OFF SITE

- Evidence of Title: Submit reasonable proof that the property in 'listed items' is vested in the Contractor.
- Include for products purchased from a supplier:
  - A copy of the contract of sale and a written statement from the supplier that any conditions of the sale relating to the passing of property have been fulfilled and the products are not subject to any encumbrance or charge.
- Include for products purchased from a supplier by a subcontractor or manufactured or assembled by any subcontractor:
  - Copies of the subcontract with the subcontractor and a written statement from the subcontractor that any conditions relating to the passing of property have been fulfilled.

480 LABOUR AND EQUIPMENT RETURNS

- Records: Provide for verification at the beginning of each week in respect of each of the previous seven days.
- Records must show:
  - The number and description of craftsmen, labourers and other persons directly or indirectly employed on or in connection with the Works or Services, including those employed by subcontractors.
  - The number, type and capacity of all mechanical, electrical and power-operated equipment employed in connection with the Works or Services

## 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: Not defective, 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.

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.

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.

450 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**

510 SUPERVISION

- General: In addition to the constant management and supervision of the Works provided by the Contractor's person in charge, all significant types of work must be under the close control of competent trade supervisors to ensure maintenance of satisfactory quality and progress.
- Replacement: Give maximum possible notice before changing person in charge or site agent.

520 COORDINATION OF ENGINEERING SERVICES

- Suitability: Site organisation staff must include one or more persons with appropriate knowledge and experience of mechanical and electrical engineering services to ensure compatibility between engineering and the Works generally.
- Evidence: Submit when requested CVs or other documentary evidence relating to the staff concerned.

540 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.

550 ACCESS FOR INSPECTION

- Removal: Before removing scaffolding or other facilities for access, give notice of not less than three days.

560 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.

580 CONTINUITY OF THERMAL INSULATION

- Record and report: Confirm that work to new, renovated or upgraded thermal elements has been carried out to conform to specification. Include:
  - The address of the premises.
  - The Contractor's name and address.
  - The name, qualification and signature of the competent person responsible for checking compliance.
  - The date on which the installation was checked.
- Submit: Before completion of the Works.
- Copy: To be lodged in the Building Manual.

610 PROPOSALS FOR RECTIFICATION OF 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.

620 MEASURES TO ESTABLISH ACCEPTABILITY

- General: Wherever inspection or testing shows that the work, materials or goods are not in accordance with the contract and measures (e.g. testing, opening up, experimental making good) are taken to help in establishing whether or not the work is acceptable, such measures:
  - Will be at the expense of the Contractor.
  - Will not be considered as grounds for revision of the completion date.

630 QUALITY CONTROL

- Procedures: Establish and maintain to ensure that the Works, including the work of subcontractors, comply with specified requirements.
- Records: Maintain full records, keep copies on site for inspection, and submit copies on request.
- Content of records:
  - Identification of the element, item, batch or lot including location in the Works.
  - Nature and dates of inspections, tests and approvals.
  - Nature and extent of nonconforming work found.
  - Details of corrective action.

**WORK AT OR AFTER COMPLETION**

710 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.

720 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.

730 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.

## A34 SECURITY/ SAFETY/ PROTECTION

## SECURITY, HEALTH AND SAFETY

110 PRECONSTRUCTION INFORMATION

- Location: Integral with the project Preliminaries, including but not restricted to the following sections:
  - Description of project: Sections A10 and A11.
  - Client's consideration and management requirements: Sections A12, A13 and A36.
  - Environmental restrictions and on-site risks: Section A12, A35 and A34.
  - Significant design and construction hazards: Section A34.
  - The Health and Safety File: Section A37.

140 CONSTRUCTION PHASE HEALTH AND SAFETY PLAN

- Submission: Present to the Employer/ Client no later than one week before commencement on site.
- Confirmation: Do not start construction work until the Employer has confirmed in writing that the Construction Phase Health and Safety Plan includes the procedures and arrangements required by the CDM Regulations.
- Content: Develop the plan from and draw on the Outline Construction Phase Health and Safety Plan, clause A30/570, and the Pre-tender Health and Safety Plan/ Preconstruction information.

150 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: None.

160 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.

170 OCCUPIED PREMISES

- Extent: Existing buildings will be occupied and/ or used during the Contract as follows: Publ ic Car Parks.
- 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 allowed, provided that such overtime is authorized in advance.

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.

**PROTECT AGAINST THE FOLLOWING**

330 NOISE AND VIBRATION

- 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 site boundary.

- 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:
  - Percussion tools and other noisy appliances without consent during the hours of to be agreed at pre-start meeting and recorded in meeting minutes.
  - 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.

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

- Duty: Report immediately suspected materials discovered during execution of the Works.
  - Do not disturb.
  - Agree methods for safe removal or remediation.

375 ANTIQUITIES

- Duty: Report immediately any fossils, antiquities and other objects of interest or value discovered during execution of the Works.
- Preservation: Keep objects in the exact position and condition in which they were found.
- Special requirements: N/A.

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 Construction Industry Publications 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, surplus material, containers and packaging.
- General: Minimize production. Prevent accumulations. Keep the site and Works clean and tidy.
- Handling: Collect and store in suitable containers. 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.
- Recyclable material: Sort and dispose at a Materials Recycling Facility approved by the Waste Regulation Authority.
- 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.

450 LASER EQUIPMENT

- Construction laser equipment: Install, use and store in accordance with BS EN 60825-1 and the manufacturer's instructions.
- Class 1 or Class 2 laser equipment: Ensure laser beam is not set at eye level and is terminated at the end of its useful path.
- Class 3A and Class 3B laser equipment: Do not use without approval and subject to submission of a method statement on its safe use.

**PROTECT THE FOLLOWING**

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.

530 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.

540 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.

550 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.

560 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.

570 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.

580 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.

630 EXISTING STRUCTURES

- Duty: Check proposed methods of work for effects on adjacent structures inside and outside the site boundary.
- Supports: During execution of the Works:
  - 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.
  - Do not remove until new work is strong enough to support existing structure.
  - Prevent overstressing of completed work when removing supports.
- Adjacent structures: Monitor and immediately report excessive movement.
- Standard: Comply with BS 5975 and BS EN 12812.

640 MATERIALS FOR RECYCLING/ REUSE

- Duty: Sort and prevent damage to stated products or materials, clean off bedding and jointing materials and other contaminants.
- Storage: Stack neatly and protect until required by the Employer or for use in the Works as instructed.

## A35 SPECIFIC LIMITATIONS ON METHOD/ SEQUENCE/ TIMING

110 SCOPE

- General: The limitations described in this section are supplementary to limitations described or implicit in information given in other sections or on the drawings.

140 SCAFFOLDING

- Scaffolding: Make available to subcontractors and others at all times.

170 WORKING HOURS

- Specific limitations: To be confirmed at pre-start meeting and recorded in meeting minutes .

180 COMPLETION IN SECTIONS OR IN PARTS

- General: Where the Employer is to take possession of any Section or part of the Works and such Section or part will, after its practical completion, depend for its adequate functioning on work located elsewhere on the site: Complete such other work in time to permit such possession to take place.
- Remainder of the Works: During execution, ensure that completed Sections or parts of the Works have continuous and adequate provision of services, fire precautions, means of escape and safe access.

## A36 FACILITIES/ TEMPORARY WORK/ SERVICES

### GENERALLY

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.

### ACCOMMODATION

210 ROOM FOR MEETINGS

- Facilities: Provide suitable temporary accommodation for site meetings, adequately heated and lit. The room may be part of the Contractor's own site offices.
- Furniture and Equipment: Provide table and chairs for 6 people.

### SERVICES AND FACILITIES

410 LIGHTING

- Finishing work and inspection: Provide temporary lighting, the intensity and direction of which closely resembles that delivered by the permanent installation.

440 MOBILE TELEPHONES

- Direct communication: As soon as practicable after the start on site:
  - provide the Contractor's person in charge with a mobile telephone.
  - pay all charges reasonably incurred.

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.

## A37 OPERATION/ MAINTENANCE OF THE FINISHED WORKS

**GENERALLY**

110 THE BUILDING MANUAL

- Purpose: The Manual is to be a comprehensive information source and guide for owners and users of the completed Works. It should provide an overview of the main design principles and describe key components and systems to enable proper understanding, efficient and safe operation and maintenance.
- Scope:
  - Part 1: General: Content as clause 120.
  - Part 2: Fabric: Content as clause 130.
  - Part 3: Services: Content as clause 140.
  - Part 4: The Health and Safety File: Content as clause 150.
  - Part 5: Building User Guide: Content as clause 151.
- Responsibility: The Building Manual is to be produced by the contractor and must be complete no later than two weeks prior to the completion of the works.
- Information provided by others: Details: Contractor.
- Compilation:
  - Prepare all information for Contractor designed or performance specified work including as-built drawings.
  - Obtain or prepare all other information to be included in the Manual.
- Reviewing the Manual: Submit a complete draft. Amend in the light of any comments and resubmit. Do not proceed with production of the final copies until authorized.
- Final copies of the Manual:
  - Number of copies: 3.
  - Format: 2 x A4 file copy and 1 x CD.
  - Latest date for submission: two weeks before the date for completion stated in the contract.
- As-built drawings and schedules:
  - Number of copies: 3.
  - Format: 2 x A4 file copy and 1 x CD.

160 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.

220 TRAINING

- Objective: Before Completion, explain and demonstrate to designated maintenance staff the purpose, function and operation of the installations including items and procedures listed in the Building Manual.
- Level of training Detailed.
- Time allowance: Include a minimum of two days.

## A40 CONTRACTOR'S GENERAL COST ITEMS: MANAGEMENT AND STAFF

110 MANAGEMENT AND STAFF

- Cost significant items: _____.

## 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: _____.

## 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: _____.

## A44 CONTRACTOR'S GENERAL COST ITEMS: TEMPORARY WORKS

110 TEMPORARY WORKS
- Details: Temporary works required or made/ not made available by the Employer: See section A36.
- Cost significant items: _____.

## A50 WORK/ PRODUCTS BY/ ON BEHALF OF THE EMPLOYER

110 WORK BY/ ON BEHALF OF EMPLOYER
- Title: _____.
- Description of work: _____.
- Carried out by: _____.
- Attendance: Allow for the following additional to those reasonably required by the conditions of contract:
  - _____.

120 PRODUCTS PROVIDED BY/ ON BEHALF OF EMPLOYER
- General: Details of such products are given in the work sections, for fixing as part of the contract. Use for no other purpose than the Works.
- Handling: Accept delivery, check against receipts and take into appropriate storage.
- Surplus products: Keep safe and obtain instructions.

## A53 WORK BY STATUTORY AUTHORITIES/ UNDERTAKERS

110 WORK BY LOCAL AUTHORITY
- Item: _____.
- Description of work: _____.
- Provisional Sum: Include _____.
- Allow for general attendance.

120 WORK BY STATUTORY UNDERTAKERS
- Item: _____.
- Description of work: _____.
- Provisional Sum: Include _____.
- Allow for general attendance.

## A54 PROVISIONAL WORK/ ITEMS

110 PROVISIONAL SUMS FOR DEFINED WORK, FOR USE WITH SMM7/ NRM2
- Item: _____.
- Description of work: _____.
- Provisional Sums: Include _____.
- Allow for general attendance.

210 PROVISIONAL SUMS FOR UNDEFINED WORK, FOR USE WITH SMM7/ NRM2
- Item: _____.
- Description of work: _____.
- Provisional Sums: Include _____.
- Allow for general attendance.

310 WORK WHERE COMPLIANCE WITH SMM7/ NRM2 IS NOT REQUIRED
- Item: _____.
- Description of work: _____.
- Provisional Sums: Include _____.
- Allow for general attendance.

310 PROVISIONAL SUMS FOR WORK BY SPECIALIST SUBCONTRACTORS
- Item: _____.
- Description of work: _____.
- Provisional Sums: Include _____.
- Add for profit: _____%.
- Allow for the following special attendance:
  - _____.
- Allow for general attendance.

510 PROVISIONAL SUMS NOT SPECIFICALLY FOR WORK – INSURANCE AGAINST DAMAGE TO PROPERTY
- Provisional sum: Include for insurance referred to in Contract Clause _____: _____ .

520 PROVISIONAL SUMS NOT SPECIFICALLY FOR WORK – BUILDING CONTROL PRESCRIBED INSPECTION FEE
- Provisional sum: Include: _____.

530 PROVISIONAL SUMS NOT SPECIFICALLY FOR WORK – TESTS AND SAMPLES
- Provisional sum: Include for tests and samples additional to those specified: _____.

550 PROVISIONAL SUMS NOT SPECIFICALLY FOR WORK – EXTRA COST OF AUTHORISED OVERTIME

- Provisional sum: Include: _____.
- Basis for calculating such extra cost: Rates of basic pay, allowances and additional payments, for use with the Working Rule Agreement for the Construction Industry, published by the Construction Industry Joint Council, current when the work is carried out, together with additional payments for continuous extra skill or responsibility or intermittent responsibility, as appropriate.
- Percentage addition: Add to cover the cost of the non-productive element only of overtime, incidental costs, overheads and profit,
  - At time and one half: _____%.
  - At double time: _____%.

560 PROVISIONAL SUMS NOT SPECIFICALLY FOR WORK

- Item: _____.
- Provisional sum: Include: _____.

590 CONTINGENCIES

- Provisional sum: Include: _____.

## A55 DAYWORKS

110 LABOUR

- Provisional sum: Include prime cost of labour incurred before the Final Completion Date: _____.
  - Percentage adjustment: Add to cover incidental costs, overheads and profit: _____%.
- Provisional sum: Include prime cost of labour incurred after the Final Completion Date: _____.
  - Percentage adjustment: Add to cover incidental costs, overheads and profit: _____%.

120 PRODUCTS

- Provisional sum: Include prime cost incurred at any time during the Contract _____.
  - Percentage adjustment to cover incidental costs, overheads and profit: _____%.

130 EQUIPMENT

- Provisional sum: Include prime cost of plant (equipment) incurred before the Final Completion Date: _____.
  - Percentage adjustment to cover incidental costs, overheads and profit: _____%.
- Provisional sum: Include prime cost of plant (equipment) incurred after the Final Completion Date: _____.
  - Percentage adjustment to cover incidental costs, overheads and profit _____%.
- Plant (equipment) costs: Rates set out in the Schedule of Basic Plant Charges published by the RICS current at the Date of Tender.

140 SPECIALIST TRADES

- Include Provisional Sums for dayworks within the province of:

  RICS/ Electrical Contractors' Association: Prime cost of labour: The sum of £ _____.
  - Percentage adjustment to cover incidental costs, overheads and profit: _____%.
    Prime cost of materials and goods: The sum of £ _____.
  - Percentage adjustment to cover incidental costs, overheads and profit: _____%.
    Prime cost of plant: The sum of £ _____.
  - Percentage adjustment to cover incidental costs, overheads and profit: _____%.

  RICS/ Building Engineering Services Association: Prime cost of labour: The sum of £ __ _____.
  - Percentage adjustment to cover incidental costs, overheads and profit: _____%.
    Prime cost of materials and goods: The sum of £ _____.
  - Percentage adjustment to cover incidental costs, overheads and profit: _____%.
    Prime cost of plant: The sum of £ _____.
  - Percentage adjustment to cover incidental costs, overheads and profit: _____%.

  RICS/ National Association of Plumbing, Heating and Mechanical Services contractors: Prime cost of labour: The sum of £ _____.
  - Percentage adjustment to cover incidental costs, overheads and profit: _____%.
    Prime cost of materials and goods: The sum of £ _____.
  - Percentage adjustment to cover incidental costs, overheads and profit: _____%.
    Prime cost of plant: The sum of £ _____.
  - Percentage adjustment to cover incidental costs, overheads and profit: _____%.

## A56 ADVANCE PROCUREMENT

110 FIXING

- Scope: Items procured in advance do not include for Main Contractor's receiving, unloading, handling, storing, returning packing, hoisting into position and fixing, which must be allowed for in the appropriate work section.

120 PLANTING

- Scope: Items for plants and trees do not include for planting, maintenance and guarantee, which should be allowed for in the appropriate work section.

130 ADVANCE PROCUREMENT

- Item: _____.
  - Description of the work: _____.
  - Supplied by: _____.
- PC sum:
  - Include: _____.
  - Main Contractor's profit: Add _____%.

130 ADVANCE PROCUREMENT

- Item: _____.
  - Description of the work: _____.
  - Supplied by: _____.
  - Main Contractor's profit: Add _____%.

# MBC- St Marys Way & Wilton Road WCs Preambles

**26 April 2017**

# Table of Contents

## C20 Demolition

15 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.

25 LOCATION OF SERVICES

- Services affected by the Works: Locate and mark positions.
- Mains services marking: Arrange with the appropriate authorities for services to be located and marked.

30 SERVICES DISCONNECTION ARRANGED BY CONTRACTOR

- Responsibility: Before starting deconstruction/ demolition arrange with the appropriate authorities for disconnection of services owned by those authorities and removal of associated fittings and equipment.

31 SERVICES DISCONNECTION ARRANGED BY EMPLOYER

- Responsibility: The Employer will arrange disconnection of services and removal of fittings and equipment owned by those authorities prior to deconstruction/ demolition.
- Timing: Do not start deconstruction/ demolition until disconnections are completed.

32 DISCONNECTION OF DRAINS

- General: Locate, disconnect and seal disused foul and surface water drains.
- Sealing: Permanent, and within the site.

35 LIVE FOUL AND SURFACE WATER DRAINS

- General: Protect drains and fittings still in use. Keep free of debris and ensure normal flow during deconstruction/ demolition work.
- Damage: Make good damage arising from deconstruction/ demolition work. Leave clean and in working order at completion of deconstruction/ demolition work.

40 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.
- Notice: Give adequate notice to adjoining owners and all affected occupiers if shutdown is necessary.

45 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.

50 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.

55 SITE HAZARDS

- Precautions: Prevent fire and/ or explosion caused by gas and/ or vapour from tanks, pipes, etc.
- Dust: Reduce by periodically spraying with an appropriate wetting agent, or contain.
  - Lead dust: Submit method statement for control, containment and clean-up regimes.
- Site operatives and general public: Protect from vibration, dangerous fumes and dust arising during the course of the Works.

60 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.

71 DANGEROUS OPENINGS

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

76 ASBESTOS-CONTAINING MATERIALS – UNKNOWN OCCURENCES

- 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.

78 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.

86 SITE LEVELS AT COMPLETION

- Levels: Grade the site to follow the levels of adjacent areas.

90 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.

95 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.

## C45 Damp proof course renewal/ insertion

4 SURVEY AND REPORT

- Survey generally:
  - Purpose: To confirm presence and extent of rising damp and suitability of walls for treatment by the proposed dpc system.
  - Timing: Before starting dpc installation work carry out survey and submit survey report.
- Survey report content:
  - Extent of rising damp: Determine using methods recommended in the Property Care Association (PCA) 'Code of practice for the installation of remedial damp proof courses in masonry walls', clause 6.
  - Proposals: Submit levels and positions of horizontal and vertical dpcs
  - Associated work: Nature and extent of work required to ensure an effective dpc.
  - Limitations: Identify areas where a full survey could not be carried out.
  - Other information: Any considered relevant.

12 ASSOCIATED WORK

- Work shown to be necessary by the survey: Carry out as part of main contract works.

15 BEFORE DPC INSTALLATION

- Internal finishes: Remove only sufficient to expose the proposed line of dpc.
- Fungal or beetle attack to timber sections: Report occurrences.

40 MAKING GOOD TO EXPOSED INJECTION HOLES

- Mortar mix: As recommended by the dpc manufacturer to match existing masonry in colour and texture.
  - Installation: Fully fill holes. Finish neatly and flush.
- Approval of appearance: Obtain or first few holes before completing the remainder.

## C46 Cavity wall tie renewal/ insertion

5 SURVEY OF EXISTING CAVITY WALLS

- Timing: Before starting remedial work covered in this section.
- Purpose: To confirm nature and extent of remedial work to wall ties.
- Survey report: Submit, stating:
  - Form of construction, materials used and condition of walls.
  - Thicknesses of internal and external leaves.
  - Widths of cavities.
  - Nature and extent of remedial work including requirements for additional ties at, e.g. sloping verges, movement joints and openings.
  - Schedule of services, fixtures and finishes requiring removal to facilitate renewal of wall ties.
  - Any other information considered relevant.

30 INSTALLATION OF WALL TIES GENERALLY

- Masonry:
  - Stable at all times during wall tie installation.
  - Formation of holes: Minimize.
  - Cavities: Clear and free from debris.
  - Fixing holes: Clean.
- Wall ties:
  - Installation: Accurately and securely.
  - Drips: Centred on cavity.
  - Expansion anchor fixings: Set to the correct torque.
  - Bonded fixings: Thoroughly grouted.
- Facework: Keep clean.

50 REMOVING MASONRY UNITS

- Removal of units for reuse: In one piece. Clean and set aside.
- Units unsuitable for reuse: Obtain instructions.
- Adjacent masonry:
  - Joints: Do not damage or widen.
  - Old mortar: Remove.
  - Cavities: Keep clean.

60 REMOVAL OF EXISTING WALL TIES FROM INTERNAL LEAF

- Wall ties: Remove carefully and completely.
- Internal leaf/ finishes: Minimize disturbance.

80 MAKING GOOD OF INSERTION/ INSPECTION HOLES IN EXTERNAL LEAF

- Mortar mixes: To approval.
  - Colour and texture: To match existing masonry units/ joints.
- Insertion/ Inspection holes: Clean and fully filled with repair mortar.
  - Finish: Neat and flush.

95 DOCUMENTATION

- Submit:
  - Statement of quality control checks.
  - Guarantee certificate.

## D20 Excavating and filling

4 SITE INVESTIGATION

- Report: See Preliminaries section A12.

30 OBSTRUCTIONS

- Recorded foundations, beds, drains, etc: Break out and seal off drain ends. Remove contaminated earth.
- Unrecorded foundations, beds, basements, filling, tanks, service pipes, drains, etc: Give notice.

50 HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS

- Generally: Do not import or use fill materials which would, either in themselves or in combination with other material or ground water, give rise to a health hazard, damage to building structures or instability in the filling.

53 WATER

General: Keep excavations free from water until foundations and below ground constructions are completed.

55 PLACING FILL GENERALLY

- Excavations and areas to be filled: Free from loose soil, rubbish and standing water.
- Freezing conditions: Do not use frozen materials or materials containing ice. Do not place fill on frozen surfaces.
- Fill against structures, membranes or buried services: Place and compact in a sequence and manner which will ensure stability and avoid damage.

60 BACKFILLING AROUND FOUNDATIONS

- Under oversite concrete and pavings: Hardcore.
- Under grassed or landscaped areas: Material excavated from the trench, laid and compacted in 300 mm layers.

62 FROST SUSCEPTIBILITY

- General: Except as allowed below, fill must be non frost-susceptible as defined in Highways Agency 'Specification for Highway Works', clause 801.17.
- Frost-susceptible fill: Use only within the external walls of buildings below spaces that will be heated. Protect from frost during construction.

65 HARDCORE

- Fill: Granular material, free from harmful matter and excessive dust or clay, well graded, all pieces less than 75 mm in any direction, and in any one layer only one of the following:
  - Crushed hard rock or quarry waste.
  - Crushed concrete, brick or tile, free from plaster.
  - Gravel or hoggin.
- Filling: Spread and level both backfilling and general filling in layers not exceeding 150 mm. Thoroughly compact each layer.

67 VENTING HARDCORE LAYER

- Fill: Clean granular material, well graded, passing a 75 mm BS sieve but retained on a 20 mm BS sieve and in any one layer only one of the following:
  - Crushed hard rock.
  - Crushed concrete, crushed brick or tile, free from plaster.
  - Gravel.
- Filling: Spread and level in 150 mm maximum layers. Thoroughly compact each layer, whilst maintaining enough voids to allow efficient venting.

75 BLINDING TO HARDCORE

- 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 provide a closed smooth surface.
- Permissible deviation on surface level: +0 -25mm.

## E10 Mixing/ Casting/ Curing in situ concrete

15 SPECIFICATION

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

45 PROPERTIES OF FRESH CONCRETE

- Adjustments to suit construction process: Determine with concrete producer. Maintain conformity to the specification.

50 PREMATURE WATER LOSS

- Requirement: Prevent water loss from concrete laid on absorbent substrates.
  - Underlay: Polyethylene sheet 250 micrometres thick.
  - Installation: Lap edges 150 mm.

60 PLACING AND COMPACTING

- Surfaces to receive concrete: Clean, with no debris, tying wire clippings, fastenings or free water.
- 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). Do not place against frozen or frost covered surfaces.
- Compaction: Fully compact to full depth to remove entrapped air especially around reinforcement, cast-in accessories, into corners of formwork and at joints. Continue until air bubbles cease to appear on the top surface.
  - Methods of compaction: To suit consistence class and use of concrete.

70 CURING AND PROTECTING

- Evaporation from surfaces of concrete: Prevent throughout curing period.
  - 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. Replace cover immediately after any finishing operations.
- Curing periods:
  - Surfaces which in the finished building will be exposed to the elements, and wearing surfaces of floors and pavements: 10 days (minimum).
  - Other structural concrete surfaces: 5 days (minimum).
- Protection: Protect concrete from shock, indentation and physical damage.

## E20 Formwork for in situ concrete

60 BOARD SUBSTRUCTURE FORMWORK

- General: Lay tightly butted and fully supported on firm, even substrate. Restrain against movement during concrete placement. Seal joints to prevent penetration of concrete.
- Collapsible boards with cellular cardboard cores: Keep dry. Seal joints in polyethylene underlay/ overlay sheets and reseal cut polyethylene bags.

70 FORMWORK

- General: Accurately and robustly constructed to produce finished concrete to the required dimensions.
- Formed surfaces: Free from twist and bow with intersections, lines and angles square, plumb and true.
- Joints between forms and completed work: Prevent loss of grout and formation of steps.
- Holes and chases: Form with inserts or box out as required.

## E30 Reinforcement for in situ concrete

70 FIXING REINFORCEMENT

- Standard: To BS 7973-1 and -2.
- Installation: Provide adequate support, tie securely and maintain the specified cover.
  - Tying wire: 16 gauge black annealed. Prevent intrusion into the concrete cover.

## E41 Worked finishes to in situ concrete

10 FINISHING

- Timing: Carry out at optimum times in relation to setting and hardening of concrete.
- Prohibited treatments to surfaces:
  - Wetting to assist surface working.
  - Sprinkling cement.

20 SMOOTH FLOATED FINISH

- Surface on completion: Even, with no ridges or steps.

30 TROWELLED FINISH

- Surface on completion: Uniform, smooth but not polished, free from trowel marks and blemishes, and suitable to receive specified flooring material.

40 TROWELLED FINISH FOR WEARING SURFACES

- Surface on completion: Uniform and smooth, free from trowel marks and blemishes.

## E60 Precast concrete floors/ roof decks

50 DETAILING

- Installation details: Submit location and assembly drawings showing incorporated components and features, trimming for voids, holes for services, and related work by others.
  - Purpose: To allow checking of compatibility with surrounding structure and coordination of services.
- Method statement and risk assessment for installation: Submit.
- Programme: Submit in advance of construction.

70 CONCRETE INFILL

- Preparation: Thoroughly clean and wet surfaces of precast units.
- Placing to troughs, slots and other holes: Avoid segregation and compact thoroughly to eliminate voids.

## F10 Brick/ block walling

51 BASIC WORKMANSHIP

- Bond where not specified: Half lap stretcher.
- Mortar joints: Fill all 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.
- Quoins and advance work: Rack back.
- Locations for equal levelling of cavity wall leaves:
  - 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.
- Lift height (maximum) for walling using cement gauged or hydraulic lime mortar: 1.2 m above any other part of work at any time.
- Daily lift height (maximum) for walling using cement gauged or hydraulic lime mortar: 1.5 m for any one leaf.
- Lift height (maximum) for walling using thin joint mortar glue: 1.3 m above any other part of work at any time.

55 FACEWORK

- Commencement of facework: Not less than 150 mm below finished level of adjoining ground or external works level.
- 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.
- Coursing brickwork and concrete blockwork: Evenly spaced using gauge rods. To produce satisfactory junctions and joints with built-in elements and components.

60 ALTERATIONS/ EXTENSIONS

- Coursing: Line up with existing work.
- Block bonding new walls to existing: Unless agreed otherwise cut pocket requirements as follows:
  - Width: Full thickness of new wall.
  - Depth (minimum): 100 mm.
  - Vertical spacing: As follows:
  - Brick to brick: 4 courses high at 8 course centres.
  - Block to block: Every other course.
  - Pocket joints: Fully filled with mortar.
- New and existing facework in the same plane: Bonded together at every course to achieve continuity of bond and coursing.
- Support of existing work: Fully consolidate joint above inserted lintel or masonry with semidry mortar to support existing structure.

66 FIRE STOPPING

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

## F30 Accessories/ sundry items for brick/ block/ stone walling

5 CAVITIES

- Concrete fill to base of cavity:
- Concrete generally: To BS EN 206 and BS 8500-2.
- Concrete type: Designated GEN1 or Standardized prescribed ST2 mix with high workability.
  - 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.
- Cleanliness: Keep cavity faces, ties and dpcs free from mortar and debris.

7 PERPEND JOINT WEEP HOLES

- Form: Open clear perpend joint.
- Locations: Through outer leaf, immediately above base of cavity, at cavity trays, stepped dpcs and over 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 openings.

62 SITE FORMED DPC/ CAVITY TRAY JUNCTIONS/ STOP ENDS

- Three dimensional changes in shape: Form to provide a free draining and watertight installation.
- Alternative use of preformed cloaks/ stop ends: Submit proposals.

66 INSTALLATION OF 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 masonry leaf. 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.
- Ground level dpcs joint with damp proof membrane: Continuous and effectively sealed.
- Low level dpcs in external walls: Install not less than 150 mm above adjoining finished ground level.
- Sill dpcs form and placement: In one piece and turned up at the back when the sill is in contact with inner leaf.
- Dpcs crossing cavity: Provide support to prevent sagging.

72 INSTALLATION OF GAS RESISTANT DPCS/ CAVITY TRAYS

- Joint treatment: Use unjointed wherever possible, otherwise lap at least 150 mm and seal to form gas and watertight installation.
- Joint with damp proof membrane: Overlap dpc/ cavity tray not less than 150 mm.

74 INSTALLATION OF VERTICAL DPCS

- Form: In one piece wherever possible.
  - Joints: Upper part overlapping lower not less than 100 mm.
- Dpcs to jambs of openings: Fully lap behind cavity tray/ lintel at head and over horizontal dpc at sill. Project not less than 25 mm into cavity and maintain full contact with frames.
- Fixing of jamb dpcs to back of built in timber frames: Secure using galvanized clout nails or staples.

## F31 Precast concrete sills/ lintels/ copings/ features

10 CONCEALED PRECAST LINTELS

- Concrete: Designated to BS 8500-2: Minimum RC30
  - Aggregate nominal maximum size: 20 mm.
- Configuration:
  - Clear span up to 900 mm:
    Section: 140 mm deep x width of wall.
    Bearing: 150 mm at both ends.
    Reinforcement: One 12 mm carbon steel bar for each 105 mm of wall thickness.
  - Clear span 900 mm to 1800 mm:
    Section: 215 mm deep x width of wall.
    Bearing: 225 mm at both ends.
    Reinforcement: One 16 mm carbon steel bar for each 105 mm of wall thickness.
- Cover to reinforcement (nominal): 20 mm minimum.

20 MOULDS

- Permissible fabrication and operating tolerances: Length 0 to +6 mm, other dimensions ±3 mm.

25 REINFORCEMENT

- Carbon steel reinforcement: As appropriate to BS 4449, BS 4482 and BS 4483.
  - Cutting and bending: To BS 8666.
- Fixing: Accurate and secure.
  - Method: Wire tying, approved steel clips or tack welding if permitted.
  - Concrete cover: Maintain free of tying wire or clips.
  - Cover spacers on visible faces: Not permitted.

30 CASTING AND CURING

- Placement of concrete: Thoroughly compact.
- Immature components: Avoid movement, vibration, overloading, physical shock, rapid cooling and thermal shock.
- Protection from weather: Do not expose panels to direct sunlight and drying winds until at least five days after casting.

32 CUTTING

- Cutting of precast concrete components: Not permitted.

35 CONDITIONS FOR SEPARATE FACING AND BACKING MIXES

- Difference in cement content: Not greater than 80 kg/m³.
- Thickness of facing mix (minimum): 10 mm greater than nominal maximum aggregate size, and not less than 25 mm.
- Location of reinforcement: Not less than 20 mm away from the interface between mixes.
- Compaction of facing and backing mix: Carry out to create monolithic construction.

45 SUPPORT OF EXISTING WORK OVER NEW LINTELS

- Joint above lintels: Fully fill and compact with semidry mortar.

## G20 Carpentry/ timber framing/ first fixing

2 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.

30 SELECTION AND USE OF TIMBER

- Timber members damaged, crushed or split beyond the limits permitted by their grading: Do not use.

32 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.

35 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.

40 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%.

43 BOLTED JOINTS

- Bolt spacings (minimum): To BS EN 1995-1-1, section 8.5.
- 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.
- 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. Tighten as necessary.

50 ADDITIONAL SUPPORTS

- Provision: Position and fix additional studs, noggings and/ or battens to support edges of sheet materials, and wall/ floor/ ceiling mounted appliances, fixtures, etc. shown on drawings.
- Material properties: Timber to be of adequate size and have the same treatment as adjacent timber supports.

55 JOISTS GENERALLY

- Centres: Equal, and not exceeding designed spacing.
- Bowed joists: Installed with positive camber.
- End joists: Positioned about 50 mm from masonry walls.

60 JOISTS ON HANGERS

- Hangers: Bedded directly on and hard against supporting construction. Do not use packs or bed on mortar.
- Joists: Cut to leave not more than 6 mm gap at each end. Rebated to lie flush with underside of hangers.
- Fixing to hangers: A nail in every hole.

70 TRIMMING OPENINGS

- Trimmers and trimming joists: Not less than 25 mm wider than general joists.

75 TRUSSED RAFTER INSTALLATION

- Erection: To Trussed Rafter Association site installation guide.
- Trusses generally: Do not modify without approval.
- Damaged trusses: Do not use.
- Fixing: With truss clips. Bottom chords of standard trusses and rafters of raised tie trusses bearing fully on wall plates.
- Bottom chords of standard trusses: Do not fix to internal walls until roofing is complete and cisterns are installed and filled.

## H60 Plain roof tiling

20 REMOVE EXISTING TILING

- General: Carefully remove tiles, battens, underlay, etc. with minimum disturbance of adjacent retained tiling.
- Undamaged tiles: Set aside for reuse.

25 UNDERLAY

- Laying: Maintain consistent tautness.
- Vertical laps (minimum): 100 mm wide, coinciding with supports.
- Fixing: Galvanized steel, copper or aluminium 20 x 3 mm extra large clout head nails.
- Eaves: Where exposed, use an external grade (UV resistant) underlay or a proprietary eaves support product.
- Penetrations: Use proprietary underlay seals or cut underlay neatly.

32 BATTEN FIXING

- Batten length (minimum): Sufficient to span over three supports.
- Joints in length: Butt centrally on supports. Joints must not occur more than once in any group of four battens on one support.
- Additional battens: Provide where unsupported laps in underlay occur between battens.

35 TILE FIXING

- General: Fix tiling and accessories to make the whole sound and weathertight at earliest opportunity.
- Exposed fittings and accessories: To match tile colour and finish.
- Setting out: To true lines and regular appearance. Lay tiles to a half lap bond with joints slightly open. Align tails.
- Cut tiles: Cut only where necessary, to give straight, clean edges.
- Ends of courses: Use tile and a half tiles to maintain bond and to ensure that cut tiles are as large as possible.
- Top and bottom courses: Use eaves/ tops tiles to maintain gauge.
- Perimeter tiles: Twice nail end tile in every course. Twice nail or clip two courses of tiles at eaves and top edges.
- Fixings: Nails/ clips as recommended by tile manufacturer.

37 LOCAL AND GENERAL FIXING AREAS

- Definitions:
  - Local areas: Bands of tiling around all edges or obstructions of each plane of the roof. Calculate extent of each band in accordance with BS 5534, section 5.
  - General areas: Remaining areas of roof tiling.

40 MORTAR BEDDING/ POINTING

- Mortar: As section Z21.
  - Mix: In accordance with BS 5534,1:3 cement:sand, with plasticizing admixtures permitted.
- Weather: Do not use in wet or frosty conditions or when imminent.
- Appearance: Finish neatly and remove residue.

42 FIRE SEPARATING WALLS

- Separating wall: Completely fill space between top of wall and underside of tiles with mineral wool quilt to provide fire stopping.
- Boxed eaves: Completely seal air paths in plane of separating wall with wire reinforced mineral wool, not less than 50 mm thick, to provide fire stopping.

52 BEDDED VERGES WITH BEDDED UNDERCLOAK

- Underlay: Carry 50 mm onto outer leaf of gable wall and bed on mortar.
- Undercloak: Matching plain tiles, sloping towards verge and projecting 38-50 mm beyond face of wall.
  - Bedding: On mortar identical to that used in gable walling.
- Tiling battens: Carry onto undercloak and finish 100 mm from verge edge.
- Verge tiles: Bed flush with undercloak on 75 mm wide bed of mortar.

70 SIDE ABUTMENTS

- Underlay: Turn up not less than 100 mm at abutments.
- Abutment tiles: Cut as necessary. Fix close to abutments.
- Soakers: Interleave and turn down over head of abutment tiles.

71 TOP EDGE ABUTMENTS

- Underlay: Turn up not less than 100 mm at abutments.
- Top course tiles: Fix close to abutments.

90 VERTICAL TILING BOTTOM EDGES

- Tiling substrate work: Fix timber tilting fillet to support bottom course of tiles in correct vertical plane. Fix flashing to tilting fillet.
- Underlay: Dress over flashing.
- Undercourse and bottom course tiles: Fix with tails neatly aligned.

91 VERTICAL TILING TOP EDGES

- Top course tiles: Fix under abutment and make weathertight with flashing dressed down not less than 150 mm.

92 VERTICAL TILING SIDE ABUTMENTS

- Tiling substrate work: Chase abutment wall and insert metal stepped flashing.
  - Flashing: Return not less than 75 mm behind tiling, overlapping underlay and battens, turn back to form a vertical welt.
- Abutment tiles: Cut and fix neatly.

93 VERTICAL TILING ANGLE WITH ANGLE TILES

- Angle tiles: Fix right and left hand in alternate courses to break bond.
- Adjacent tiles: Cut and fix neatly.

## H71 Lead sheet coverings/ flashings

25 RIDGE/ HIP ROLLS TO LEAD ROOFS

- Core: Rounded timber.
  - Size: 70 x 45 mm tapering to a flat base 30 mm wide.
  - Fixing: To ridge/ hip board with brass or stainless steel countersunk screws at 600 mm centres.
- Roof covering: Dress roofing sheets up roll.
- Capping: Lead of the same thickness as the roof, in lengths not more than roof sheet lengths. Wings to extend not less than 75 mm on to roof.
  - Laps in length: Not less than 150 mm for ridges, 100 mm for hips.
- Fixing: Secure wings with copper or stainless steel clips at roofing bay centres and laps.

54 VERTICAL TILING/ SLATING BOTTOM EDGE FLASHINGS

- Lead:
  - Thickness: 1.75 or 1.80 mm (Code 4).
- Dimensions:
  - Lengths: Not more than 1500 mm.
  - End to end joints: Laps not less than 100 mm.
  - Width: Adequate for underlap to underlay, dressing over tilting fillet, and welted drip or straight cut bottom edge.

55 VERTICAL TILING/ SLATING TOP EDGE FLASHINGS

- Lead:
  - Thickness: 1.75 or 1.80 mm (Code 4).
- Dimensions:
  - Lengths not exceeding 1500 mm.
  - End to end joints: Laps not less than 100 mm.
  - Width: Adequate for underlap to abutment and dressing down over tiles/ slates not less than 150 mm.

56 VERTICAL TILING/ SLATING SIDE ABUTMENT STEP FLASHINGS

- Lead:
  - Thickness: 1.75 or 1.80 mm (Code 4).
- Dimensions:
  - Lengths: Not more than 1500 mm.
  - End to end joints: Laps not less than 100 mm.
- Width: Adequate for not less than 75 mm underlap with welted edge to tiles/ slates and not less than 50 mm cover to abutment.

57 VERTICAL SLATING ANGLE SOAKERS

- Lead:
  - Thickness: 1.25 or 1.32 mm (Code 3).
- Dimensions:
  - Length: Tile/ slate gauge + lap + 25 mm.
  - Underlaps: Not less than 150 mm at any point.

60 MATERIALS AND WORKMANSHIP GENERALLY

- Lead production method:
  - Rolled, to BS EN 12588.
  - Machine cast: BBA certified.
- Identification: Colour marked for thickness/ code, weight and type.
- Workmanship standard: To BS 6915 and latest editions of 'Rolled lead sheet. The complete manual' published by the Lead Sheet Association.
- Fabrication and fixing: To provide a secure, free draining and weathertight installation.
- Marking out: Do not use scribers or other sharp instruments to mark out lead without approval.
- Solder: Use only where specified.
- Finished leadwork: Fully supported, adequately fixed to resist wind uplift but also able to accommodate thermal movement without distortion or stress.
- Patination oil: Apply smear coating to all visible lead, evenly in one direction and in dry conditions.

62 LEADWELDING

- In situ leadwelding: Not permitted.

75 TIMBER FOR USE WITH LEADWORK

- Quality: Planed, free from wane, pitch pockets, decay and insect attack (ambrosia beetle excepted).
- Moisture content: Not more than 22% at time of fixing and covering. Give notice if greater than 16%.
- Preservative treatment: Organic solvent as section Z12 and Wood Protection Association Commodity Specification C8.

76 UNDERLAY

- Handling: Prevent tears and punctures.
- Laying: Butt or overlap jointed onto a dry substrate.
  - Fixing edges: With copper or stainless steel staples or clout nails.
  - Do not lay over roof edges.
  - Turn up at abutments.
- Wood core rolls: Fixed over underlay.
- Protection: Keep dry and cover with lead at the earliest opportunity.

78 FIXING LEAD SHEET

- Top edge: Secured with two rows of fixings, 25 and 50 mm from edge.
- Fixings:
  - Nails to timber substrates: Copper clout nails to BS1202-2 , or stainless steel (austenitic) clout nails to BS 1202-1.
    Shank type: Annular ringed, helical threaded or serrated.
    Length: Not less than 20 mm or equal to substrate thickness.
  - Screws to concrete or masonry substrates: Brass or stainless steel to BS 1210.
    Diameter: Not less than 3.35 mm.
    Length: Not less than 19 mm.
    Washers and plastics plugs: Compatible with screws.

80 CLIPS

- Material:
  - Lead clips: Cut from sheets of the same thickness/ code as sheet being secured.
  - Copper clips: Cut from 0.70 mm thick sheet to BS EN 1172, temper R220 (soft) or R240 (half hard) depending on position, dipped in solder if exposed to view.
  - Stainless steel: Cut from 0.38 mm sheet to BS EN 10088, grade 1.4301(304), terne coated if exposed to view.
- Dimensions:
  - Width: 50 mm where not continuous.
  - Length: To suit detail.
- Fixing clips: Secure each to substrate with either two screw or three nail fixings not more than 50 mm from edge of lead sheet. Use additional fixings where lead downstands exceed 75 mm.
- Fixing lead sheet: Welt clips around edges and turn over 25 mm.

92 WOOD CORED ROLL JOINTS WITH SPLASH LAP

- Wood core:
  - Size: 45 x 45 mm round tapering to a flat base 25 mm wide.
  - Fixing to substrate: Brass or stainless steel screws at 300 mm centres.
- Undercloak: Dress three quarters around core.
  - Fixing: Nail to core at 150 mm centres for one third length of the sheet starting from the head.
- Overcloak: Dress around core and extend on to main surface to form a 40 mm splash lap.

94 DRIPS WITH SPLASH LAPS

- Underlap: Dress into rebate along top edge of drip.
  - Fixing: One row of nails on centre line of rebate.
- Overlap: Dress over drip and form a 40 mm splash lap.

96 DRIPS WITH SPLASH LAPS

- Underlap: Dress up full height of drip upstand.
  - Fixing: Two rows of nails to lower level substrate. Seal over nails with a soldered or leadwelded dot.
- Overlap: Dress over drip and form a 75 mm splash lap.
  - Fixing: Lead clips leadwelded to underlap at bay centres.

98 WELTED JOINTS

- Joint allowance: 50 mm overlap, 25 mm underlap.
- Copper or stainless steel clips: Fix to substrate at 450 mm centres.
- Overlap: Welt around underlap and clips and lightly dress down.

## J40 Flexible sheet waterproofing/ damp proofing

50 WORKMANSHIP GENERALLY

- Condition of substrate:
  - Clean and even textured, free from voids and sharp protrusions.
  - Moisture content: Compatible with damp proofing/ tanking.
- Air and surface temperature: Do not apply sheets if below minimum recommended by membrane manufacturer.
- Condition of membrane at completion:
  - Neat, smooth and fully supported, dressed well into abutments and around intrusions.
  - Completely impervious and continuous.
  - Undamaged. Prevent puncturing during following work.
- Permanent overlying construction: Cover membrane as soon as possible.

55 ANGLES IN SELF-ADHESIVE DAMP PROOFING/ TANKING

- Preformed rot proof fillet to internal angles
  - Size (minimum): 50 x 50 mm splay faced.
  - Bedding: Bitumen mastic or bonding compound.
- Reinforcing strip to all angles:
  - Material: As damp proofing/ tanking.
  - Width (minimum): 300 mm.
  - Timing: Apply before main sheeting.
- Dressing of main sheeting onto adjacent surfaces (minimum): 100 mm.

## K10 Gypsum board dry linings/ partitions/ ceilings

65 DRY LINING GENERALLY

- General: Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
- Standard:
  - Gypsum plasterboard to BS EN 520.
  - Gypsum fibre board to BS EN 15283-2.
  - Evidence of compliance: All sheets to be CE marked. Submit Declaration of Performance (DoP).
- Cutting gypsum boards: Neatly and accurately without damaging core or tearing paper facing. Minimize cut edges.
- Two layer boarding: Stagger joints between layers.
- Finishing: Neatly to give flush, smooth, flat surfaces free from bowing and abrupt changes of level.

69 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.

70 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 services.
  - Board edges and lining perimeters.

75 NEW WET LAID BASES

- Dpcs: Install under full width of partitions/ freestanding wall linings.

85 MINERAL WOOL INSULATION

- Fitting insulation: Closely butted joints and no gaps. Prevent slumping.
- Electrical cables overlaid by insulation: Size accordingly.

87 SEALING GAPS AND AIR PATHS

- Sealing: Apply sealant to perimeter abutments and around openings as a continuous bead with no gaps.
  - Gaps between floor and underside of gypsum board: After sealing, fill with joint compound.

90 SEAMLESS JOINTING

- Filling and taping: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of tape, fully bedded.
- Finishing: Feather out jointing compound to give a flush, smooth, seamless surface.
- Nail/ screw depressions and minor indents: Fill to give a flush surface.

## K11 Rigid sheet flooring/ sheathing/ decking/ sarking/ linings/ casings

10 WOOD-BASED SHEETS GENERALLY

- Standard: To BS EN 13986.
  - Evidence of compliance: All sheets to be CE marked. Submit Declaration of Performance (DoP).

67 ADDITIONAL SUPPORTS

- Additional studs, noggings/ dwangs (Scot) and battens:
  - Provision: In accordance with board manufacturer's recommendations and as follows: Tongue and groove jointed rigid board areas: To all unsupported perimeter edges. Butt jointed rigid board areas: To all unsupported edges.
  - Size: Not less than 50 mm wide and of adequate thickness.
  - Treatment (where required): As for adjacent timber supports.

72 BOARD MOISTURE CONTENT AND CONDITIONING

- Moisture content of boards at time of fixing: Appropriate to end use.
- Conditioning regime: Submit proposals.

75 DRYNESS OF CONCRETE/ SCREED SUBSTRATES FOR FLOATING FLOORS

- Relative humidity above substrate when tested with a hygrometer to BS 8201, Appendix A (maximum): 75%.
  - Test points: All corners, around perimeter, and random points over area being tested.

78 VAPOUR CONTROL LAYER IN FLOATING FLOOR CONSTRUCTION

- Location: Immediately below floating layer.
- Installation: Joints overlapped 150 mm and sealed. Membrane turned up and sealed to top face of flooring. Excess material trimmed off neatly.

85 FIXING GENERALLY

- Timing: Building to be weathertight before fixing boards internally.
- Moisture content of timber supports (maximum): 18%.
- Fasteners: Evenly spaced in straight lines and in pairs across joints.
  - Distance from edge of board: Sufficient to prevent damage.

90 OPEN JOINTS
- Perimeter joints and joints between boards: Free from plaster, mortar droppings and other debris.
- Temporary wedges/ packings: Remove on completion of board fixing.

## K30 Panel partitions

50 WORKMANSHIP GENERALLY
- Setting out: Plumb, true to line and level and free from bowing, undulations and other planar distortions.
- Stability: Fix securely, with additional supports where necessary at perimeters.

60 NEW WET LAID BASES
- Dpcs: Install under full width of partitions.
  - Material: Bituminous sheet or plastics.

70 PERIMETER SEALS
- Sealant material: A type recommended by the partition/ panel manufacturer.
- Application: Continuously to clean, dry, dust free surfaces, leaving no gaps. In accordance with the sealant manufacturer's instructions.

80 FINISHING
- Filling and taping: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of tape. Apply more jointing compound and feather out to give a flush, seamless surface.
- Minor imperfections: Remove by lightly sanding.
- Primer/ Sealer: As recommended by the plasterboard manufacturer.

## K40 Demountable suspended ceilings

40 WORKMANSHIP GENERALLY
- Fixing: Secure. In accordance with manufacturers' recommendations and BS 8290-3. Provide additional bracing and stiffening to give a stable ceiling system.
- Setting out: Accurate. Provide level soffits free from undulations and lipping.
- Lines and joints: Straight and parallel to walls, unless specified otherwise.
- Edge infill units size (minimum): Half standard width or length.
- Corner infill units size (minimum): Half standard width and length.
- Grid: Position to suit infill unit sizes. Allow for permitted deviations from nominal sizes of infill units.

50 WIRE HANGERS
- General: Straighten before use.
- Installation: Install vertical without bends or kinks. Do not allow hangers to press against fittings.
- Fixing: Tie securely at top and bottom with tight bends to loops to prevent vertical movement.

## L10 Windows/ Rooflights/ Screens/ Louvres

65 PRIMING/ SEALING
- Wood surfaces inaccessible after installation: Prime or seal as specified before fixing components.

80 IRONMONGERY
- Fixing: In accordance with any third party certification conditions applicable. 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.

90 REPLACEMENT WINDOW INSTALLATION
- Standard: To BS 8213-4.

## L20 Doors/ shutters/ hatches

70 FIRE AND SMOKE RESISTANCE
- Requirement: Specified performance to be the minimum period attained when tested for integrity in accordance with BS 476-22, BS EN 1634-1 or BS EN 1634-3.
- Components and assemblies will be marked to the relevant product standard and/ or third party certification rating.

75 FIRE RESISTING/ SMOKE CONTROL DOORS/ DOORSETS
- Gaps between frames and supporting construction: Filled as necessary in accordance with door/ doorset manufacturer's instructions.

85 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.

## L40 General glazing

10 WORKMANSHIP AND POSITIONING GENERALLY
- Glazing:
  - Generally: In accordance with BS 6262 series.
  - Integrity: Wind and watertight under all conditions. Make full allowance for deflections and other movements.
- Glass:
  - Standards: Generally to BS 952 and to the relevant parts of:
    BS EN 572 for basic soda lime silicate glass.
    BS EN 1096 for coated glass.
    BS EN 12150 for thermally toughened soda lime silicate glass.
    BS EN ISO 12543 for laminated glass.
  - Quality: Free from scratches, bubbles and other defects.
  - Dimensional tolerances: Panes/ sheets to be accurately sized.
- Material compatibility: Glass/ plastics, surround materials, sealers primers and paints/ clear finishes to be compatible. Comply with glazing/ sealant manufacturers' recommendations.

20 REMOVAL OF GLASS/ PLASTICS FOR REUSE

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

30 PREPARATION

- Surrounds, rebates, grooves and beads: Clean and prepare before installing glazing; ensure compliance with any certified installation requirements.

## M10 Cement based levelling/ wearing screeds

45 AGGREGATES AND CEMENTS

- Sand: To BS EN 13139.
  - Grading limits: In accordance with BS 8204-1, Table B.1.
- Coarse aggregates:
  - Standard: To BS EN 12620.
- Cement:
  - Cement types: In accordance with BS 8204-1, clause 5.1.3.

47 ADMIXTURES

- Standards; In accordance with BS 8204-1, Table 1.
- Calcium chloride: Do not use in admixtures.

50 MIXING

- Water content: Minimum necessary to achieve full compaction.
- Mixing: Mix materials thoroughly to uniform consistency in a suitable forced action mechanical mixer.

52 COMPACTION

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

55 JOINTS IN LEVELLING SCREEDS

- Laying screeds: Lay continuously using 'wet screeds' between strips or bays. Minimize defined joints.

70 SMOOTH FLOATED FINISH

- Finish: Even texture with no ridges or steps.

75 TROWELLED FINISH TO LEVELLING SCREEDS

- Floating: To an even texture with no ridges or steps.
- Trowelling: To a uniform smooth surface, free from trowel marks and other blemishes, and suitable to receive specified flooring material.

80 TROWELLED FINISH TO WEARING SCREEDS

- Floating: To an even texture with no ridges or steps.
- Trowelling: Successively trowel at intervals, applying sufficient pressure to close surface and give a uniform, smooth finish free from trowel marks and other blemishes.

90 CURING

- Curing period (minimum): As soon as screed has set sufficiently, closely cover with polyethylene sheeting for period recommended by screed manufacturer.
- Drying after curing: Allow screeds to dry gradually.

## M12 Resin flooring

15 TESTING MOISTURE CONTENT OF SUBSTRATES

- Drying aids: Remove minimum four days prior to test.
- Test: To BS 8203, Annex A using an accurately calibrated hygrometer.
- Acceptability: Do not lay resin flooring until readings show 75% relative humidity or less.

20 SUBSTRATES GENERALLY

- General: Substrates must restrain stresses that occur during setting and hardening of resin.
- Chases/ Saw cuts: Cut/ break out for termination of resin flooring.
- Blow holes, cavities, cracks, etc: Fill with repair product recommended by resin flooring manufacturer.
- Cleanliness: Remove surface contaminants, debris, dirt and dust.
- Surface texture: Suitable to accept resin flooring and achieve a full bond over the complete area.

25 EXISTING SUBSTRATES

- Preparation: Remove surface imperfections, ingrained contaminants, coverings/ coatings and residues.

30 WORKMANSHIP

- Fillers and incorporated aggregates: Thoroughly mix to ensure wetting. Avoid excessive air entrainment.
- Curing: Allow appropriate periods between coats and before surface treatments and trafficking/ use.

35 COATED RESIN FLOORING

- Application: Even, of uniform thickness, surface finish and colour.

40 AGGREGATE FLAKE FINISH

- Scattered aggregates: Broadcast onto wet surface of resin.
  - Appearance: Consistent.
- Surface on completion:
  - Abrading/ Polishing: Uniform, fine and dust free.

45 AGGREGATE GRANULE FINISH

- Surface on completion:
  - Grinding: Regular appearance to exposed aggregate and dust free.
  - Grouting: Surface defects filled.
  - Abrading/ Polishing: Uniform, fine and dust free.

50 SURFACE SEALER

- Application: Even to completely wet resin surface.

## M13 Calcium sulfate based levelling screeds

52 MIXING TROWELLED SCREEDS

- Mixing:
  - Mechanical mixer: Suitable forced action. Do not use a free fall drum mixer.
- Materials: Mix thoroughly to uniform consistence.
- Water content: Minimum necessary to achieve crystallisation of synthetic anhydrite and full compaction.

56 LAYING TROWELLED SCREEDS

- Trowelled screeds: Lay continuously using 'wet screeds' between strips or bays. Compact thoroughly.
- Defined joints: Minimize.

60 TROWELLED FINISH TO SCREEDS

- Surface on completion: Uniform and smooth but not polished, suitable to receive specified flooring material.

70 CURING TROWELLED SCREEDS

- Curing period: As soon as screed has set sufficiently, closely cover with polyethylene sheeting and maintain in position for a minimum period of 48 hours.
- Drying after curing: Allow screeds to dry gradually.

## M20 Plastered/ Rendered/ Roughcast coatings

60 CEMENTS FOR MORTARS

- Cement: To BS EN 197-1.
  - Types: Portland cement, CEM I.
    Portland slag cement, CEM II.
    Portland fly ash cement, CEM II.
  - Strength class: 32.5, 42.5 or 52.5.
- Sulfate resisting cement: To BS EN 197-1.
  - Strength class: 42.5.
- Masonry cement: To BS EN 998-1 and Kitemarked
  - Class: MC 12.5 (with air entraining agent).

62 ADMIXTURES FOR CEMENT GAUGED MORTARS

- Air entraining (plasticizing) admixtures: To BS EN 934-2 and compatible with other mortar constituents.
- Other admixtures: Submit proposals.
- Prohibited admixtures: Calcium chloride and admixtures containing calcium chloride.

65 MIXING

- Render mortars (site-made):
  - Batching: By volume using gauge boxes or buckets.
  - Mix proportions: Based on damp sand. Adjust for dry sand.
- Mixes: Of uniform consistence and free from lumps.

67 COLD WEATHER

- Internal work: Take precautions to prevent damage to internal coatings when air temperature is below 3°C.
- External work: Avoid when air temperature is at or below 5°C and falling or below 3°C and rising.

71 SUITABILITY OF SUBSTRATES

- General: Suitable to receive coatings. Sound, free from contamination and loose areas.

74 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.
- Drying out substrates: Establish drying conditions.

76 REMOVING DEFECTIVE EXISTING PLASTER

- Plaster for removal: Loose, hollow, soft, friable, badly cracked, affected by efflorescence or otherwise damaged.
- Removing plaster: Cut back to a square, sound edge.

78 REMOVING DEFECTIVE EXISTING RENDER

- Render for removal: Detached, hollow, soft, friable, badly cracked, affected by efflorescence or otherwise damaged.
- Removing defective render: Cut out to regular rectangular areas with straight, square cut or slightly undercut edges.
  - Render with imitation joints: Cut back to joint lines.
- Cracks (other than hairline cracks): Cut out to a width of 75 mm (minimum).

80 PLASTERBOARD BACKINGS

- Additional framing supports:
  - Fixtures, fittings and service outlets: Accurately position to suit fasteners.
  - Board edges and perimeters: To suit type and performance of board.
- Joints:
  - Joint widths (maximum): 3 mm.
  - End joints: Stagger between rows.
  - Two layer boarding: Stagger joints between layers.
- Joint reinforcement tape: Apply to joints and angles except where coincident with metal beads.

82 BEADS/ STOPS

- Location: External angles and stop ends.
- Materials:
  - External render: Stainless steel.
  - Internal plaster/ render: Galvanized steel.
- Fixing: Secure and true to line and level.
  - Beads/ stops to external render: Fix mechanically.

87 APPLICATION OF COATINGS

- General: Apply coatings firmly and achieve good adhesion.
- Appearance of finished surfaces: Even and consistent. Free from rippling, hollows, ridges, cracks and crazing.
  - Accuracy: Finish to a true plane with walls and reveals plumb and square.
- Drying out: Prevent excessively rapid or localized drying out.
- Keying undercoats: Cross scratch (plaster coatings) and comb (render coatings). Do not penetrate undercoat.

97 RENDER FINAL COAT - SCRAPED FINISH

- Finish: Scraped to expose aggregate and achieve an even texture.

99 RENDER FINAL COAT - PLAIN FLOATED FINISH

- Finish: Even, open texture free from laitance.

## M40 Stone/ Concrete/ Quarry/ Ceramic tiling/ Mosaic

15 NEW BACKGROUNDS/BASES

- Background drying times (minimum):
  - Brick/block walls: 6 weeks.
  - Rendering: 2 weeks.
  - Gypsum plaster: 4 weeks.
- Base drying times (minimum):
  - Concrete slabs: 6 weeks.
  - Cement:sand screeds: 3 weeks.

20 EXISTING BACKGROUNDS/BASES GENERALLY

- Efflorescence, laitance, dirt, loose and defective material: Remove and make good defective areas with materials compatible with background/base and bedding.
- Deposits of oil, grease and other materials incompatible with the bedding: Remove.
- Tile, paint and other nonporous surfaces: Clean.
- Wet backgrounds: Dry before tiling.
- Paint with unsatisfactory adhesion: Remove so as not to impair bedding adhesion.

25 NEW PLASTER

- Plaster primer: Apply if recommended by adhesive manufacturer.

30 FIXING GENERALLY

- Colour/ shade: Avoid unintended variations within tiles for use in each area/ room.
  - Variegated tiles: Mix thoroughly.
- Adhesive: Compatible with background/ base.
- 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.
- 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/ mosaics and no gap should be greater than 6 mm, i.e. a tolerance of $\pm$ 3 mm.
- Surplus bedding material: Clean from joints and face of tiles/ mosaics.

32 MORTAR BEDDING

- Bedding mix:
  - Cement: Portland to BS EN 197-1, type CEM I/42.5.
  - Sand for walls: Fine aggregate to BS EN 13139.
    Grading designation: 0/2 (CP or MP) category 2 fines.
  - Sand for floors: Fine aggregate 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.

35 SETTING OUT

- Joints: True to line, continuous and without steps.
  - Joints on walls: Horizontal, vertical and aligned round corners.
  - Joints in floors: Parallel to main axis of space or specified features.
- Cut tiles: Minimise number, maximise size and locate unobtrusively.
- Joints in adjoining floors and walls: Align.
- Joints in adjoining floors and skirtings: Align.

50 ADHESIVE BED - NOTCHED TROWEL METHOD TO WALLS

- Application: By 3 mm floated coat of adhesive to dry background. Comb surface.
- Tiling: Press tiles firmly onto float coat.

55 ADHESIVE BED - NOTCHED TROWEL AND BUTTERING METHOD TO WALLS

- Application: By floated coat of adhesive to dry background. Comb surface.
- Tiling: Apply thin even coat of adhesive to backs of dry tiles. Fill any profiles. Press tiles firmly onto float coat.
- Finished adhesive thickness: 3 mm or within the range allowed by the adhesive manufacturer.

57 ADHESIVE BED - BUTTERING METHOD

- Tiling: Apply even coat of adhesive to backs of dry tiles. Fill any ribbed, deep keyed or button profiles.
- Finished adhesive thickness:
  - Walls: 3 mm or within the range allowed by the adhesive manufacturer.
  - Floors: Within the range allowed by the adhesive manufacturer.

60 ADHESIVE BED - NOTCHED TROWEL AND BUTTERING METHOD TO FLOORS

- Application: Floated coat of adhesive to dry base and comb surface.
- Tiling: Apply coat of adhesive to backs of dry tiles. Fill any profiles. Press tiles firmly onto float coat.
- Finished adhesive thickness: Within range allowed by manufacturer.

62 ADHESIVE BED - NOTCHED TROWEL METHOD FOR MESH BACKED MOSAIC TO WALLS

- Application: By 3 mm floated coat of adhesive to dry background. Comb surface.
- Placing mosaic sheets: Hang in horizontal rows, working downwards. Stagger vertical joints. Prevent slippage of sheets. Lightly beat mosaics into adhesive.
- Width, plane and alignment of joints between sheets: To match joints between mosaic tiles.

64 ADHESIVE BED - NOTCHED TROWEL METHOD FOR PAPER FACED MOSAIC TO WALLS

- Application: By 3 mm floated coat of adhesive to dry background. Comb surface.
- Preparing mosaic sheets: Pregrout. Remove surplus before fixing.
- Placing mosaic sheets: Hang in horizontal rows, working downwards. Stagger vertical joints.
- Width, plane and alignment of joints between sheets: To match joints between mosaic tiles.
- Paper face: Before adhesive hardens completely, remove paper face. Complete grouting. Wash off glue from face of mosaic.

70 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.
- Polishing: When grout is hard, polish tiling with dry cloth.

## M50 Rubber/ plastics/ cork/ lino/ carpet tiling/ sheeting

40 LAYING COVERINGS ON NEW WET LAID BASES

- Base drying aids: Not used for at least four days prior to moisture content test.
- Base moisture content test: Carry out in accordance with BS 5325, Annexe A or BS 8203, Annexe A.
- Commencement of laying coverings: Not until all readings show 75% relative humidity or less.

45 EXISTING FLOOR COVERING REMOVED

- Substrate: Clear of covering and as much adhesive as possible. Skim with smoothing compound to give smooth, even surface.

60 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.

65 LAYING COVERINGS

- Base/ substrate condition: Rigid, dry, smooth, free from grease, dirt and other contaminants.
- Use a primer where recommended by adhesive manufacturer. Allow to dry thoroughly.
- Adhesive: As specified, as recommended by covering manufacturer or, as approved.
- Conditioning of materials prior to laying: As recommended by manufacturer.
- Environment: Before, during and after laying, provide adequate ventilation and maintain temperature and humidity approximately at levels which will prevail after building is occupied.
- Finished coverings: Accurately fitted, tightly jointed, securely bonded, smooth and free from air bubbles, rippling, adhesive marks, stains, trowel ridges and high spots.

85 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

30 PREPARATION GENERALLY

- Standard: In accordance with BS 6150.
- Refer to any pre-existing CDM Health and Safety File and CDM Construction Phase Plan where applicable.
- Risk assessment and method statement for hazardous materials: Prepare for 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, dirt, grease and oil: Remove.
- Surface irregularities: Provide smooth finish.
- Organic growths and infected coatings:
  - Remove with assistance of biocidal solution.
  - Apply residual effect biocidal solution to inhibit regrowth.
- Joints, cracks, holes and other depressions: Fill with stoppers/ fillers. Provide smooth finish.
- Dust, particles and residues from preparation: Remove and dispose of safely.
- Doors, opening windows and other moving parts:
  - Ease, if necessary, before coating.
  - Prime resulting bare areas.

32 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.
- Risk assessment and method statement for hazardous materials: Prepare for 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.
  - Gloss coated surfaces: Provide key.
- Partly removed coatings: Apply additional preparatory coats.
- Completely stripped surfaces: Prepare as for uncoated surfaces.

37 WOOD PREPARATION

- General: Provide smooth, even finish with lightly rounded arrises.
- Degraded or weathered surface wood: Take back surface to provide suitable substrate.
- Degraded substrate wood: Repair with sound material of same species.
- Heads of fasteners: Countersink sufficient to hold stoppers/ fillers.
- Resinous areas and knots: Apply two coats of knotting.
- Defective primer: Take back to bare wood and reprime.

39 STEEL PREPARATION

- Corrosion and loose scale: Take back to bare metal.
- Residual rust: Treat with a proprietary removal solution.
- Bare metal: Apply primer as soon as possible.

41 MASONRY AND RENDERING PREPARATION

- Loose and flaking material: Remove.

43 PLASTER PREPARATION

- Nibs, trowel marks and plaster splashes: Scrape off.
- Overtrowelled 'polished' areas: Provide suitable key.

45 PREVIOUSLY PAINTED WINDOW FRAMES

- Paint encroaching beyond glass sight line: Remove.
- Loose and defective putty: Remove.
- Putty cavities and junctions between previously painted surfaces and glass: Clean thoroughly.
- Finishing:
  - Patch prime, reputty, as necessary and allow to harden.
  - Seal and coat as soon as sufficiently hard.

61 COATING GENERALLY

- Application standard: In accordance with BS 6150, clause 9.
- Conditions: Maintain suitable temperature, humidity and air quality.
- Surfaces: Clean and dry at time of application.
- Thinning and intermixing: Not permitted unless recommended by manufacturer.
- Priming coats: Apply 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.

68 STAINING WOOD

- Primer: Apply if recommended by stain manufacturer.
- Application: Apply in flowing coats and brush out excess stain to produce uniform appearance.

70 EXTERNAL DOORS

- Bottom edges: Prime and coat before hanging.

75 BEAD GLAZING TO COATED WOOD

- Before glazing: Apply first two coats to rebates and beads.

80 LINSEED OIL PUTTY GLAZING

- Setting: Allow putty to set for seven days.
- Sealing:
  - Within a further 14 days, seal with a solvent-borne primer.
  - Fully protect putty with coating system as soon as it is sufficiently hard.
  - Extend finishing coats on to glass up to sight line.

## N13 Sanitary appliances and fittings

70 INSTALLATION GENERALLY

- Assembly and fixing: Fix appliances securely to structure, without taking support from pipelines, level and plumb and so that surfaces designed to fall drain as intended.
- Jointing and bedding compounds: Recommended by manufacturers of appliances, accessories and pipes, to form watertight joints between appliances and backgrounds (except cisterns) and between appliances and discharge pipes.

75 CISTERNS

- Cistern operating components: Obtain from cistern manufacturer.
- Inlet and flushing valves: Match to pressure of water supply.
- Internal overflows: Into pan, to give visible warning of discharge.
- External overflows: Fix pipes to falls, and locate to give visible warning of discharge. Agree position.

## P11 Foamed/ fibre/ bead cavity wall insulation

10 SURVEY OF EXISTING WALLS

- Timing: Before starting insulation work.
- Purpose: To confirm suitability for filling.
- Report: Submit, stating:
  - Form of construction, materials used.
  - General condition of walls.
  - Thickness of walls.
  - Width and condition of cavity.
  - Exposure to wind driven rain.
  - Nature and extent of remedial work and other work required to ensure suitability.
  - Any other information considered relevant.

25 SUITABILITY OF WALLS

- Timing: Before and during filling of cavities.
- Defects: Report immediately.

70 GAPS AND OPENINGS

- Gaps: Seal with tightly packed mineral wool to prevent loss of fill.
- Openings: Fit approved sleeve to keep openings permanently clear.
- Air bricks/ grilles of untrunked vents: Remove and seal openings into cavity.

75 INJECTION HOLES

- Arrangement: Form neatly to a regular pattern and to sizes recommended by cavity fill manufacturer.
- Before commencing filling of each wall: Form all holes in that wall.
- Precautions: Avoid damage to dpcs, cavity trays, flues, etc. Prevent debris falling into cavity.

80 MAKING GOOD

- Blockage: Remove from vents and refix or replace any air bricks.
- Injection holes: Fill, replacing existing materials where possible.
  - Finished appearance: Obtain approval of first few holes before completing the remainder.

85 FLUES WITH NO APPLIANCE

- Smoke test: Carry out if full inspection cannot be made.
  - Purpose: To ensure there is no leakage of gases from flue walls/ joints.
- Blockages: Remove.

90 FLUES WITH AN APPLIANCE FITTED

- Test: Before and after filling cavities. Give notice before testing.
  - Purpose: To ensure there is no leakage of gases from flue walls/ joints.
- Blockages: Remove and retest until performance is satisfactory.

95 DOCUMENTATION
- Certificates, records, guarantees and other documents: Submit on completion.

## P30 Trenches, pipeways and pits for buried engineering services

10 ROUTES OF SERVICES BELOW GROUND
- Locations of new service runs: Submit proposals.
- Temporary marking: Indicate service runs with marker posts.

20 TRENCHES
- Width: As small as practicable.
- Trench sides: Vertical.
- Trench bottoms: Remove mud, rock projections, boulders and hard spots. Trim level.
- Give notice: To inspect trench for each section of the work.

## P31 Holes, chases, covers and supports for services

10 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 $mm^2$.
- 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.

20 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:
  - Position: Locate at top. Form by sawing down to a drilled hole.
  - Depth (maximum): 0.15 x joist depth.
  - Distance from supports: Between 0.1 and 0.2 x span.
- Holes in joists:
  - Position: 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.

30 PIPE SLEEVES

- Material: Match pipeline.
- Sleeves: Extend through full thickness of wall or floor. Position accurately.
  - Clearance around service (maximum): 20 mm or diameter of service, whichever is the lesser.
  - Installation: Bed solid.

## Q10 Kerbs/ edgings/ channels/ paving accessories

40 LAYING KERBS, EDGINGS AND CHANNELS

- Cutting: Neat and accurate and without spalling. Form neat junctions.
- Bedding and backing of units: Either of the following: Bedded on mortar laid on hardened concrete base. Bedding mortar allowed to set and units secured with a continuous haunching of concrete.
  - Bedded on fresh concrete races to BS 7533-6, secured with backing concrete cast monolithically with concrete race.
- Concrete for foundations and haunching:
  - Standard: To BS 8500-2.
  - Designated mix: Not less than GEN0 or Standard mix ST1 or better, low workability.
- Mortar bedding: 1:3 cement:sand as section Z21.
  - Bed thickness: 12-40 mm.

45 ACCURACY

- Deviations (maximum):
  - Level: ± 6 mm.
  - Horizontal and vertical alignment: 3 mm in 3 m.

50 TOOLED MORTAR JOINTS

- Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled and tooled to a neat flush profile.
  - Joint width: 6 mm.

80 REGULARITY OF PAVED SURFACES

- 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.

## Q20 Granular sub-bases to roads/ pavings

10 THICKNESSES OF SUB-BASES

- Thicknesses: As specified in the relevant paving section.

40 SUB-BASES

- Granular material: Of a known suitability for use in sub-bases, free from ice, harmful matter and excessive dust or clay, well graded, all pieces less than 75 mm in any direction, and selected from one of the following:
  - Crushed rock (other than argillaceous rock) or quarry waste.
  - 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 sand or gravel.

45 LAYING AND COMPACTING SUB-BASES

- Subgrade: Not frozen and free from loose soil, rubbish and standing water.
- Structures, membranes and buried services: Ensure stability and avoid damage.
- General: Spread and level in layers.
- 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.

50 ACCURACY

- Permissible deviation from required levels, falls and cambers (maximum):
  - Subgrade: ± 20 mm.
  - Sub-base: ± 12 mm.

60 SURFACES TO RECEIVE SAND BEDDING FOR PAVING

- 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 or PFA.

70 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

30 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.
- Permissible deviation from the required levels, falls and cambers (maximum): In accordance with BS 594987, Table 7.
- 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.
  - Condition on completion: Clean.

## Q24 Interlocking brick/ block roads/ pavings

35 LAYING GENERALLY

- Standard: In accordance with BS 7533-3.
- Laying blocks/ pavers/ setts: Commence from an edge restraint. Vibrate to produce a thoroughly interlocked paving of even overall appearance with regular sand filled joints and accurate to line, level and profile.
- Cutting blocks/ pavers: Neatly and accurately without spalling to give neat junctions at edge restraints and changes in bond.
- Colour banding: Select blocks/ pavers vertically from at least 3 separate packs in rotation to avoid colour banding.

40 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.
- Difference in level between adjacent paving units (maximum): 2 mm.
- Sudden irregularities: Not permitted.

42 REGULARITY OF PAVED SURFACES

- Maximum undulations in the surface of pavings (except tactile paving surfaces) under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface): 3 mm.
- Joints between paving units or utility access covers:
  - Joints flush with the surface: difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
  - Recessed, filled joints: difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
  - Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
- Sudden irregularities: Not permitted.

## Q50 Site/street furniture/equipment

70 PRESERVATIVE TREATED TIMBER

- Surfaces exposed by minor cutting and drilling: Treated by immersion or with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.
- Heavily worked sections: Re-treat.

80 CONCRETE FOUNDATIONS

- Standard: To BS 8500-2.
- Mix: Designated concrete not less than GEN 1 or standard prescribed concrete not less than ST2.
- Foundation holes: Neat vertical sides.
- Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.
- Components: Accurately positioned and securely supported.
- Concrete fill: Fully compacted as filling proceeds.
- Concrete foundations exposed to view: Compacted until air bubbles cease to appear on the upper surface, then weathered to shed water and trowelled smooth.
- Temporary component support: Maintain undisturbed for minimum 48 hours.

90 BUILDING IN TO MASONRY WALLS

- Components being built in: Accurately positioned and securely supported. Set in mortar and point neatly to match adjacent walling.
- Temporary support: Maintain for 48 hours (minimum) and prevent disturbance.

## R10 Rainwater drainage systems

50 INSTALLATION GENERALLY

- Discharge of rainwater: Complete, and without leakage or noise nuisance.
- Components: Obtain from same manufacturer for each type of pipework and guttering.
- Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
- Fixings and fasteners: As section Z20.

60 GUTTERS LAID TO FALL

- Setting out: To true line and even gradient to prevent ponding or backfall. Position high points of gutters as close as practical to the roof and low points not more than 50 mm below the roof.
- Joints: Watertight.
- Roofing underlay: Dressed into gutter.

65 GUTTERS LAID LEVEL

- Setting out: Level and as close as practical to roof.
- Joints: Watertight.
- Roofing underlay: Dressed into gutter.

70 PIPEWORK

- Fixing: Securely, plumb and/ or true to line with additional supports as necessary to support pipe collars, particularly at changes in direction.
- Cut ends of pipes and gutters: Clean and square with burrs and swarf removed.

80 INTERNAL PIPEWORK TEST - ENGLAND, WALES, IRELAND AND NORTHERN IRELAND

- Preparation: Temporarily seal open ends of pipework with plugs.
- Testing: Connect a 'U' tube water gauge and pump air into pipework until gauge registers 38 mm.
- Required performance:
  - Allow a period for temperature stabilization, after which the pressure of 38 mm is to be maintained without loss for not less than 3 minutes.

81 INTERNAL PIPEWORK TEST - SCOTLAND

- Standard: To BS EN 12056-2, NG.3.1.
- Required performance: To BS EN 12056-2, NG.3.1.2.

## R11 Above ground foul drainage systems

50 INSTALLATION GENERALLY

- Standards: To BS EN 12056-1, BS EN 12056-2 (including National Annexes NA-NG) and BS EN 12056-5.
- Drainage from appliances: Quick, quiet and complete, without blockage, crossflow, backfall, leakage, odours, noise nuisance or risk to health.
- Components: From same manufacturer for each type of pipework.
- Access: Provide access fittings in convenient locations to permit cleaning and testing of pipework.
- Thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
- Fixings: Allow the pipe to slide.
  - Finish: Plated, sherardized, galvanized or other nonferrous.
  - Compatibility: Suitable for the purpose, material being fixed and substrate.

60 PIPEWORK

- Fixing: Securely plumb and/ or true to line. Fix lengths of discharge stack pipes at or just below socket collar or coupling.
  - Additional supports: Provide as necessary at junctions and changes in direction.
- Cut ends of pipes: Clean and square with burrs and swarf removed.

70 PIPEWORK TEST

- Preparation: Temporarily seal open ends of pipework using plugs.
- Testing: Connect a 'U' tube water gauge and pump air into pipework until gauge registers 38 mm.
- Required performance: Allow a period for temperature stabilisation, after which the pressure of 38 mm is to be maintained without loss for at least 3 minutes.

## R12 Below ground drainage systems

2 EXISTING DRAINS

- Setting out: Before starting work, check levels and positions of existing drains, inspection chambers and manholes against drawings. Report discrepancies.

19 EXCAVATING PIPE TRENCHES

- Trench from bottom up to 300 mm above crown of pipe: With vertical sides.
  - Width: As small as practicable but not less than external diameter of pipe plus 300 mm.
- Type of subsoil: Where the type of subsoil at the level of the crown of the pipe differs from that stated for the type of pipeline, give notice.
- Timing: Excavate to formation immediately before laying beds or pipes.
- Mud, rock projections, boulders and hard spots: Remove. Replace with bedding material, well consolidated.
- Local soft spots: Harden by tamping in bedding material.

21 BEDDING AND JOINTING

- Laying pipes: To true line and regular gradient on even bed for full length of barrel with sockets (if any) facing up the gradient.
- Jointing: Lubricate. Leave gaps at ends of spigots to allow for movement.

23 CLASS D NATURAL BED

- Trench bottom: Hand trim to accurate levels, levelling up any overdig with compacted spoil.
- Pipes: Cut holes for couplings/ sockets and lay pipes resting uniformly on their barrels, adjusting to line and gradient. Do not use hard packings under pipes.
- Backfilling: After initial testing, backfill to 150 mm above crown of pipe with a protective cushion of selected fill, free from vegetable matter, rubbish and frozen soil and material retained on a 40 mm sieve. Thoroughly hand compact in 100 mm layers.

37 CLASS Y CONCRETE SURROUND FOR SHALLOW PIPES UNDER BUILDINGS

- Locations: Where crown of pipe is less than 300 mm below underside of slab.
- Timing: Excavate trench after hardcore has been laid and compacted.
- Concrete blinding: 25 mm thick, over full width of trench.
- Temporary pipe support: Folding wedges of compressible board, pipe inverts 100 mm (minimum) above blinding.
- Concrete pipe surround: Same mix as slab and cast integrally with slab. Extend length to within 150 mm of nearest flexible joint.

39 CLASS Z CONCRETE SURROUND

- Concrete blinding: 25 mm thick, over full width of trench.
- Temporary pipe support: Folding wedges of compressible board, pipe inverts 100 mm (minimum) above blinding.
- Vertical construction joints: At face of flexible pipe joints using 18 mm thick compressible board precut to profile of pipe. Fill gaps between spigot and socket with resilient material to prevent entry of concrete.
- Concrete surround: After testing, place and compact concrete for full width of trench to encase pipe to 150 mm above crown.

41 TRENCHES LESS THAN 1 M FROM FOUNDATIONS

- Class Z concrete surround: Provide in locations where bottom of trench is lower than bottom of foundation.
  - Top of concrete: Higher than bottom of foundation.

44 BENDS AT BASE OF SOIL STACKS

- Bends: 90° nominal rest bend with a minimum radius of 200 mm to centreline of the pipe.
- Height of invert of horizontal drain at base of stack below centreline of lowest branch pipe (minimum): 450 mm.
- Stabilizing bends: Bed in concrete without impairing flexibility of couplings.

58 INSTALLATION OF FITTINGS

- Appearance: Square with and tightly jointed to adjacent construction as appropriate.
- Bedding and surround of fittings, traps, etc: Concrete, 150 mm thick.
- Permissible deviation in level of gullies: +0 to -10mm.

69 CONVENTIONAL CHANNELS, BRANCHES AND BENCHING

- Main channel: Bedded solid in 1:3 cement:sand mortar, branches connected to main channel at or slightly above invert level, but not higher than half channel level, so that discharge flows smoothly in direction of main flow.
- Benching: Concrete rising vertically from main channel to a height not lower than soffit of outlet pipe, then sloping upwards at 10% to walls, and with dense smooth uniform finish.

84 TESTING AND INSPECTION GENERALLY

- Obstructions and debris: Remove. Check that the installation is clear before testing.

89 WATER TESTING OF MANHOLES AND INSPECTION CHAMBERS

- Timing: Before backfilling.
- Standard:
  - Exfiltration: To BS EN 1610, water testing (method W).
  - Infiltration: No identifiable flow of water penetrating the chamber.

91 BACKFILLING TO PIPELINES GENERALLY

- Backfill from top of surround or protective cushion: Material excavated from trench, compacted in 300 mm layers. Do not use heavy compactors before there is 600 mm of material over pipes.

94 BACKFILLING UNDER ROADS AND PAVINGS

- Backfill from top of specified surround or protective cushion up to formation level: Well graded gravel or hardcore passing a 75 mm sieve, well compacted in 150 mm layers.

97 CLEANING

- General: Flush out the whole installation and remove silt and debris immediately before handing over.

## Z10 Purpose made joinery

10 FABRICATION

- Standard: To BS 1186-2.
- Sections: Accurate in profile and length, and free from twist and bowing. Formed out of solid unless shown otherwise.
  - Machined surfaces: Smooth and free from tearing, wooliness, chip bruising and other machining defects.
- Joints: Tight and close fitting.
- Assembled components: Rigid. Free from distortion.
- Screws: Provide pilot holes. Heads of countersunk screws sunk at least 2 mm below surfaces visible in completed work.
- Adhesives: Compatible with wood preservatives applied and end uses of timber.

20 CROSS SECTION DIMENSIONS OF TIMBER

- General: Dimensions on drawings are finished sizes.
- Maximum permitted deviations from finished sizes:
  - Softwood sections: To BS EN 1313-1.
  - Hardwood sections: To BS EN 1313-2.

30 PRESERVATIVE TREATED WOOD

- Cutting and machining: Completed as far as possible before treatment.
- Extensively processed timber: Retreat timber sawn lengthways, thicknessed, planed, ploughed, etc.
- Surfaces exposed by minor cutting and/ or drilling: Treat as recommended by main treatment solution manufacturer.

40 MOISTURE CONTENT

- Wood and wood based products: Maintained within range specified for the component during manufacture and storage.

50 FINISHING

- Surfaces: Smooth, even and suitable to receive finishes.
  - Arrises: Eased unless shown otherwise on drawings.
- End grain in external components: Sealed with primer or sealer as section M60 and allowed to dry before assembly.

## Z11 Purpose made metalwork

31 METAL PRODUCTS

- Grades of metals, section dimensions and properties: To the appropriate British Standards and suitable for the purpose.
- Fasteners: Generally, same metal as component, with matching coating and finish.

50 PREPARATION FOR APPLICATION OF COATINGS

- General: Fabrication complete, and fixing holes drilled before applying coatings.
- Paint, grease, flux, rust, burrs and sharp arrises: Removed.

51 FABRICATION GENERALLY

- Contact between dissimilar metals in components: Avoid.
- Finished components: Rigid and free from distortion, cracks, burrs and sharp arrises.
  - Moving parts: Free moving without binding.
- Corner junctions of identical sections: Mitre.
- Prefinished metals: Do not damage or alter appearance of finish.

52 COLD FORMED WORK

- Profiles: Accurate, with straight arrises.

53 WELDING AND BRAZING GENERALLY

- Surfaces to be joined: Clean thoroughly.
- Tack welds: Use only for temporary attachment.
- Joints: Fully bond parent and filler metal throughout with no inclusions, holes, porosity or cracks.
- Surfaces of materials that will be self-finished and visible in completed work: Protect from weld spatter.
- Flux residue, slag and weld spatter: Remove.

54 WELDING OF STEEL

- Method: Metal arc welding to BS EN 1011-1 and -2.

56 FINISHING WELDED AND BRAZED JOINTS VISIBLE IN COMPLETE WORK

- Butt joints: Smooth, and flush with adjacent surfaces.
- Fillet joints: Neat.
- Grinding: Grind smooth where indicated on drawings.

## Z20 Fixings and adhesives

10 FIXINGS AND FASTENERS 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 or sleeves to avoid bimetallic corrosion.
- General usage: To recommendations of fastener manufacturers and/ or manufacturers of components, products or materials fixed and fixed to.
- Fixings: To be in straight lines, at regular centres.

25 FASTENER DURABILITY

- Materials: To have:
  - Bimetallic corrosion resistance appropriate to items being fixed.
  - Atmospheric corrosion resistance appropriate to fixing location.
- Appearance: Submit samples on request.

30 FIXINGS THROUGH FINISHES

- Penetration of fasteners and plugs into substrate: To achieve a secure fixing.

35 PACKINGS

- Materials: Noncompressible, corrosion proof.
- Area of packings: Sufficient to transfer loads.

40 CRAMP FIXINGS

- Fasteners: Fix cramps to frames with screws of same material as cramps.
- Fixings in masonry work: Fully bed in mortar.

50 PELLETED COUNTERSUNK SCREW FIXINGS

- Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
- Pellets: Cut from matching timber, grain matched, glued in to full depth of hole.
- Finished level of pellets: Flush with surface.

55 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.

60 APPLYING ADHESIVES

- Surfaces: Clean. 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.
- Finished adhesive joints: Fully bonded. Free of surplus adhesive.

## Z21 Mortars

10 MORTAR MIXES

- Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

20 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 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.

25 SAND FOR LIME:SAND MASONRY MORTARS

- Type: Sharp, well graded.
  - Quality, sampling and testing: To BS EN 13139.
  - Grading/ Source: As specified elsewhere.

30 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.

40 CEMENTS FOR MORTARS

- Cement: To BS EN 197-1 and CE marked.
  - Types: Portland cement, CEM I.
    Portland limestone cement, CEM ll/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 EN 197-1 Sulfate resisting Portland cement, CEM I/SR and CE marked.
    To BS EN 197-1 fly ash cement, CEM ll/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.

50 ADMIXTURES FOR SITE MADE 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.

60 MAKING MORTARS GENERALLY

- 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.
- Contamination: Prevent intermixing with other materials.

70 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.

## Z22 Sealants

**EXECUTION**

62 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.

63 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.