

## The Morton Partnership

Registered in England No. 2727193

THE MORTON PARTNERSHIP LTD.

CONSULTING CIVIL & STRUCTURAL ENGINEERS,  
HISTORIC BUILDING SPECIALISTS

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### DESIGN AND ACCESS STATEMENT

41 SOUTH STREET  
ROCHFORD  
ESSEX



**Client:** Judith Adams  
The Old Rectory  
Apton Hall Road  
Canewdon  
Rochford  
Essex SS4 3LJ

**Prepared by:** The Morton Partnership  
Leonardo House  
11 Market Place  
Halesworth  
Suffolk IP19 8BA

**Date:** August 2010

**Ref:** GRST/BEB/12498~DAS01

## INTRODUCTION

### The Property

The property is a late 18<sup>th</sup>/early 19<sup>th</sup> Century, semi-detached cottage, two storey with a pitched plain tile roof, timber framed and weatherboard clad to the front and side elevation.

The outshoot to the roof to the rear is tiled, with a combination of slates and plain tiles.

### Assessment

This Application is to deal with the structural and cosmetic repairs following fire damage to the property, and inclusion of a single storey extension to house a small bathroom.

### Scale

The overall footprint of the extension is 5.5m<sup>2</sup>, and the height of the catslide roof at the junction with the existing roof line has been limited to 4.0m in line with the attached cottage.

### Layout

The rear ground floor room, which currently houses the bathroom, will now become the kitchen, and the extension will lead off this room to form the new bathroom.

### Amount

Alterations will include the construction of a new single storey room with catslide roof over.

### Appearance

The extension will be constructed in thermal concrete blocks and be rendered externally with a lime putty render, to be decorated white to match the existing rear elevation.

New Welsh slates will be provided to the catslide roof.

The works associated with the repairs following the fire damage will include the replacement of the rafters on the rear outshoot roof, reinstating Welsh slate tiles and plain tiles to match existing, allowing for redecoration internally throughout using earth-born breathable paints.

In addition to these works, the existing render on the front and side elevation has deteriorated. The proposal is to remove the existing render and re-apply and NHL 3.5 render with lime-wash finish to provide an appropriate finish to accommodate the level of weathering due to its proximity to the public highway.

### Access

Access will remain unchanged.

### Landscaping

Landscaping will remain unchanged.

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### SPECIFICATION AND SCHEDULE OF WORKS

41 SOUTH STREET  
ROCHFORD  
ESSEX



**Client:** Judith Adams  
The Old Rectory  
Apton Hall Road  
Canewdon  
Rochford  
Essex SS4 3LJ

**Loss Adjuster:** Richard Jones  
Crawford & Company Adjusters (UK) Ltd  
48/56 Pall Mall  
Hanley  
STOKE ON TRENT  
Staffs ST1 1EH

**Prepared by:** The Morton Partnership Ltd  
Leonardo House  
11 Market Place  
Halesworth  
Suffolk IP19 8BA

**Date:** July 2010

**Reference:** GRST\BEB\12498~spec&sched

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- 6.1 Collection for Schedule of Works related to Additional Works

**APPENDICES:**

- A Drawings

<b>Date</b>	<b>Comments</b>	<b>Name</b>
04.08.10	Draft issued to Client for approval	GRST
06.08.10	Issued for Planning & Listed Building Submission	GRST
06.08.10	Issued for Tender	GRST

**1.0 PREAMBLE**

- 1.1 The following Specification and Schedule of Works have been commissioned to repair the damage caused by fire to 41 South Street, Rochford.
- 1.2 The building is a Grade II Listed property of special architectural and historic interest, and the contractor should take due care and attention to ensure that no works, other than specified, are carried out unless agreed with the Local Authority.
- 1.3 The general scope of works is set out in the Schedule of Works and has been split into two for works associated with the fire damage and additional works including for a single storey extension.

**2.0 GENERAL CONDITIONS AND PRELIMINARIES****2.1 General Conditions****2.1.1 Access to Site:**

- a) Access is via South Street. There is access alongside the property to Rochford Police Station and should be kept clear at all times.

**2.1.2 Parking:**

- a) Parking on the public highway is not Permitted. A Local Highway Authority licence must be sought for any skips or containers located on the public highway.

**2.1.3 Power:**

- a) The Contractor will be permitted to use any power supply in the house (the adequacy of the supply has not been checked) on payment of a charge of £50.00 to the Employer. The Contractor to allow for providing all associated temporary works and distribution around the site.
- b) Alternatively the Client will read the metre before the works commence and again once the works are complete to determine the amount of power used during the works this fee will then be payable directly to the Client.

**2.1.4 Water:**

- a) The Contractor will be permitted to use any cold water supply (the adequacy of the supply has not been checked) etc as necessary. The Contractor to allow for providing all associated temporary works and distribution around the site.

**2.1.5 WC Facilities:**

- a) The Contractor is to supply a WC. This should be cleaned regularly.

**2.1.6 Unloading:**

- a) Vehicles loading or off-loading materials etc. must not be positioned in such a way as to stop other vehicles passing and all vehicles must have a driver in attendance at all times.

**2.1.7 Police Regulations:**

- a) Comply with all Police Regulations.

**2.1.8 Notices & Fees:**

- a) Give all notices due to Local Authority and Public undertakings and pay all fees and dues including any fees or licences required.

**2.1.9 Working Area:**

- a) To be confined to the working area as agreed between the Employer and the Contractor.

**2.1.10 Materials Storage:**

- a) Limited storage within the building will be permitted, an agreed area within the rear garden will be provided for the contractor during the period of the works.

**2.1.10 Working Hours:**

- a) To be restricted between Monday and Friday 08.00–17.00 unless otherwise agreed with the Employer.

**2.1.11 Stability:**

- a) Accept responsibility for the structural integrity of the works during the Contract, and support as necessary.

**2.1.12 Rubbish:**

- a) Remove rubbish and debris daily, and keep site and works clean and tidy. Allow for skips and the like throughout the contract to be placed in a position agreed with the Insured.

**2.1.13 Services:**

- a) The Contractor is to ascertain the position of all existing services.  
Note: The underground drainage is within 500mm of the ground surface level and due care should be taken to protect the pipework and limit unloading from vehicles over 2 tonnes.

**2.1.14 Safety, Health & Welfare:**

- a) Allow for providing everything necessary for the safety, health and welfare of the Contractor, sub-contractor and directly employed work people in compliance with all enactment's, regulations, working rules and all legislative Acts and Regulations. The Contractor is to provide appropriate barriers and notices etc. When work is ceased the site is to be left safe and secure

**2.1.15 Workmanship/Materials etc:**

- a) All materials, products and workmanship are to be suitable for the purpose of the work in accordance with good building practice including the relevant provision of the BSI Documents and Codes of Practices.

**2.1.17 Plant, Tools & Vehicles:**

- a) Provide all plant, tools, vehicles, labour etc necessary for the completion of the works.

**2.1.18 Scaffold:**

- a) The Contractor to allow for all scaffold necessary to undertake the works including all hire charges, alterations etc.

**2.1.19 CDM Regulations:**

- a) CDM 2007 Regulations dictates the project is 'non-notifiable. However, all parties involved will endeavour to follow Code of Practice to ensure positive action is taken to avoid hazard, reduce risk, and work with others to minimise, as far as reasonably possible, the risk to those doing (or affected by) construction work.

**2.1.20 Scope of Works:**

- a) The Contractor is to complete all work shown on the drawings and specifications and all work which may be reasonably inferred from the drawings and specifications and which is necessary for the structural stability and durability of the building/structures, or for the proper function of the building/structure or to bring it to an acceptable standard of completeness. The Contractor is to allow, in pricing, for all this work whether shown or inferred.

**2.1.21 Inspecting Site:**

- a) The Contractor shall examine the drawings, inspect the site and be acquainted with the conditions and restrictions likely to affect the execution of the works, the working space, means of access and details of matters concerning the site prior to submitting a tender. No claims arising from failures to do so will be considered.

**2.1.21 Building in Occupation:**

- a) The Employer will not be in occupation of 41 South Street during the course of the works.
- b) The Contractor should ensure that the property remains secure at all times during the project.

**2.2 Contract****2.2.1 BUILDING CONTRACT AND CONSULTANCY AGREEMENT FOR HOME OWNER \ OCCUPIER:**

- a) The form of Contract will be the Joints Contract Tribunal Agreement for Works carried out by a Contractor under the supervision of a Consultant 2005 Edition.
- b) The Contractor shall allow for complying with the Contract and any amendments and supplementary requirements as set forth under. Amendments to the Contract will be written into both copies, prior to formal execution.

Employer: Mrs Judith Adams  
The Old Rectory  
Apton Hall Road  
Canewdon  
Rochford

**2.2.2 CONDITIONS OF CONTRACT:**

- a) The following is a schedule of amendments and additions which are to be incorporated into the Contract.
- b) 1.0 Intentions of the Parties.  
1.1 Contractor's Obligations.

Insert at the end of the clause:

"Should the Contractor consider that additional detailed drawings or information are required, he shall apply in writing for such drawings at least fourteen days before they are required to enable the works concerned to be executed to programme"

"Should the Client need to provide information relating to goods to be installed, the Contractor will apply in writing to the client for such information at least advise 21 days before procurement is required to enable the works concerned to be executed to programme"

"Ascertain from the drawings or otherwise any holes, recesses, plugs etc., which may be required in time for these to be formed as the works proceed as no extra payment will be allowed for cutting or forming these subsequently".

2.0 Commencement and Completion.

2.1 Commencement and Completion.

Commencement Date: To be confirmed but with the earliest start date possible.

Completion Date: To be confirmed but the shortest period practical.

2.3 Damages for non completion.

£50.00 per week or pro rata there to.

2.5 Defects Liability.

Delete "3 months" and insert "6 months".

6.0 Injury, damage and insurance.

6.1 Injury or death of persons.

Insert at the end of the clause

"Insurance cover for any one occurrence or series of occurrences arising out of any one event shall be not less than £5,000,000.00".

6.2 Injury or damage to property.

"Insurance cover for any one occurrence or series of occurrences arising out of any one event shall be not less than £5,000,000.00".

"Proof of valid insurance for the full contract period shall be provided to the client prior to commencement of works."

6.3 Insurance of the Works - fire etc - new works.

To be deleted.

6.3B Insurance of the Works - fire etc - existing structures.

Insert at the end of this clause

"The Contractor shall be responsible for the insurance against theft of all unfixed materials, goods and plant on site. This to include all salvaged materials".

- 7.0 Determination.
- 8.0 Settlement of disputes

### 3.0 SPECIFICATION

SCAFFOLDING (B10)  
REPAIRING / RENOVATING / CONSERVING TIMBER (C51)  
IN SITU CONCRETE CONSTRUCTION GENERALLY (E05)  
MIXING / CASTING / CURING IN SITU CONCRETE (E10)  
REINFORCEMENT FOR IN SITU CONCRETE (E30)  
BRICK / BLOCK WALLING (F10)  
CARPENTRY / TIMBER FRAMING / FIRST FIXING (G20)  
NATURAL SLATING (H62)  
SINGLE LAP ROOF TILING (H65)  
PLASTERBOARD DRY LININGS / PARTITIONS / CEILINGS (K10)  
GENERAL GLAZING (L40)  
INTERNAL LIME RENDER (M20)  
PAINTING (M60)  
SANITARY APPLIANCES (N13)  
HOLES, CHASES, COVERS AND SUPPORT FOR SERVICES (P31)  
RAINWATER DRAINAGE SYSTEMS (R10)  
ABOVE GROUND DRAINAGE SYSTEM (R11)  
BELOW GROUND DRAINAGE SYSTEM (R12)  
FIXINGS AND ADHESIVES (Z20)  
LIME MORTARS (Z21)

**B10 SCAFFOLDING**

- 100 TO BE READ: With general conditions and preliminaries and other Contract Documents, schedule of scaffold, scaffolding design drawings and calculations.
- 110 GENERALLY: Where the Contractor is required by the specification to provide details of subcontractors and suppliers these must be supplied with the tender. Where method statements, drawings, calculations, samples or approvals are required, a minimum of one week should be allowed. These periods should be indicated on the Contractor's programme.

**Materials**

- 120 METAL SCAFFOLDING: To BS 1139; Section 1.1: 1990; Part 2: 1982; Section 2.1:1991; Part3:1983; Part 4;1982: Part 5;1990. All scaffolding and couplings to be hot dip galvanised to BS 729.
- 130 TIMBER SCAFFOLD BOARDS: To BS 2482: 1981 re-issued with amendment 1990, 38 x 225 softwood with metal end caps. Supply stable boards of moisture content to suit situation. Discard twisted or damaged boards.
- 140 LADDERS: To BS 1129: 1982 and BS 2037: 1984. All ladders to be in good repair. Replace any timber ladders that warp or break.
- 150 SHEETING: Side Sheeting to be translucent flame retardant flexible sheeting, or approved.
- 160 NETTING: Nylon woven green debris netting, with neoprene rubber anchor straps.
- 170 ROOFING SHEETS: To be To CP 143 or alternative proprietary system as agreed with the CA in writing and during the tender period.
- 180 PLYWOOD SHEETING: Exterior quality WBP 19mm thick to BS 6566.
- 190 ANCHOR SOCKETS: Will not be permitted except to the theatre building as shown on the drawings.
- 195 BUTTS: Will be permitted providing suitably protected with plywood and polystyrene pads. Single butts must be able to be removed to allow repairs to fabric below.
- 198 TIES: Where windows line up either side of the building it is acceptable to tie through these providing the sashes are suitably protected and the opening made secure with purpose cut plywood with round headed bolts (external face). Great care will be needed with installation of ties to ensure no damage to the fabric occurs.
- 200 WARNING TAPES AND STRIPS: Fluorescent and/or stripped plastic tape and self-adhesive strips.
- 210 KENTLEDGE: Where required the scaffold will be held down with kentledge. The Contractor should provide details for the proposed kentledge for approval. The following will not be acceptable: scaffold tubes, water containers, ground anchors.

**Design**

- 300 SCAFFOLD DRAWINGS BY EMPLOYER: Where design drawings and calculations have been prepared before tender, these are to be fully priced in the tender and complied with when erecting the scaffold. The contractor must undertake a check on the drawings and calculations at the time of tendering and notify the CA of any discrepancies or omissions with his tender. They must also notify the CA with the tender if they wish to vary the design to suit their proposed working method and the cost implication of this. The Contractor will be responsible for the erection and certification of the scaffold once their tender is accepted.  
SUBMISSION OF A TENDER WILL BE DEEMED AN ACCEPTANCE OF THE SCAFFOLD

DESIGN BY THE CONTRACTOR, and that all costs associated with erection, inspection, maintenance, removal and making good are included in this.

If the design for access scaffold and temporary roof differs from that provided with the tender documents in any way, detailed information should be provided with the tender and the cost implication.

- 310 SCAFFOLD DRAWINGS BY CONTRACTOR: Where the Contractor is required to prepare proposals, submit full details in duplicate to the CA based on the parameters set out in this specification. The proposals are to be of an extent and detail commensurate with the complexity of the Contract and with the degree to which they are critical. Indicate loads from the scaffolding onto the existing structure and demonstrate that the existing building is capable of resisting such loads, undertaking opening up works as required. Indicate levels of working platforms in relation to the existing building. Submit drawings of any proposals to vary those approved where required. Indicate with tender the name of the scaffolding designer, who is required to inspect on completion and verify to the CA that the scaffolding has been erected in accordance with his proposals.

Details of the design proposal drawings, loadings to the surrounding ground or building including kentledge and design calculations should be submitted prior to erection and for approval by the CA.

- 320 CERTIFICATION: Allow for independent Consulting Engineer to fully check both calculations and drawings and provide written confirmation of approval of design and calculations. Independent Engineer to confirm scaffold has been erected to agreed designs on completion of erection. The Engineer will be required to demonstrate Professional Indemnity Insurance to a level of £500,000 each and every claim. Renewal certificates should be forwarded to the CA for the duration of the Contract.

330 CONTRACTOR DESIGN:

- The Main Contractor is responsible for ascertaining the requirements of all subcontractors including the use of each platform, the number to be fully boarded, those to be sheeted, location and purpose of hoists, fans, hoardings, loading bays and the length of time the structure will be in position, together with other relevant information, unless stipulated within the Contract Documents.
- The Main Contractor should be responsible for obtaining a documented design with calculations for the erection, use and dismantling of scaffold structures and for the integration of these activities within the overall work programme. It is the duty of the main contractor to check the design. The Main Contractors must submit details of the following, when requested to do so:
  - design
  - full set of drawings
  - calculations
  - number and location of working levels
  - loading bays
  - manufacturer's details for specialist equipment such as ladder beams and cluster props etc.
  - method statements covering erection, use and dismantling.

340 SCAFFOLDING CONTRACTOR:

- The scaffolding contractor should be members of the National Association of Scaffolding Contractors (NASC).
- Contractors would have to demonstrate:
  - A sound Health and Safety Policy
  - Adequate Employers and Public Liability Insurance
  - Scaffolding operatives should be registered under the Construction Industry Training Board (CITB)
  - Scaffolders' Record Scheme to identify the level of competence
  - All operatives are fully trained, registered and competent in activities undertaken
  - All work is adequately supervised by competent trained Supervisors.

- Materials conform to the specified standards and are regularly checked and maintained
  - Work is carried out in accordance with relevant codes of practice
- 351 ACCESS AND WORKING SCAFFOLDING: Access and working scaffolding should be designed, constructed and used in accordance with BS5973:1993, Code of Practice for Access and Working Scaffolds and Special Scaffold Structures in steel. Scaffold structures will normally fall into one of two categories:
- Standard scaffolds.
  - Special scaffolds.
- 360 STANDARD SCAFFOLDS
- **This category includes putlog and independent ties scaffolds. Putlog scaffolds will not be permitted.**
  - Un-sheeted independent scaffolds, where no loading rating is specified, may be constructed up to a height of 50m without calculations providing they are constructed in accordance with BS5973:1993, sections 2 and 3 and that they do not carry greater loads nor have greater bay lengths than those given in the table below.

Table 1. Access and working scaffolds of tube and couplers					
Duty	Use of Platform	Load on Platform kN/m <sup>2</sup>	Max No of Platforms	Commonly used widths 225mm boards using	Max Bay Length (m)
Inspection and very light duty	Inspection, painting, stone cleaning, light cleaning and access	0.75	1 working platform	3 boards	2.7
Light Duty	Plastering, painting, stone cleaning, glazing and pointing.	1.50	2 working platforms	4 boards	2.4
General Purpose	General building work including brickwork, window and mullion fixing, rendering, plastering.	2.00	2 working platforms + 1 at very light duty	5 boards or 4 boards + 1 inside	2.1
Heavy Duty	Blockwork, brickwork, and heavy cladding.	2.50	2 working platforms + 1 at very light duty	5 boards or 5 boards + 1 inside or 4 boards + 1 inside	2.0
Masonry or Special duty	Masonry work, concrete blockwork, and very heavy cladding	3.00	1 working platform + 1 at very light duty	6 to 8 boards	1.8
<b>BS 5973:199</b>					
<b>Note: This table should be read in conjunction with the remainder of the code and 8.4.3 and 8.5.1 in particular.</b>					

- 370 SPECIAL SCAFFOLDS
- These will include all access and working scaffolds other than those identified under standard scaffold limitations. All special scaffolds should be designed by a competent person.
  - These will generally cover:
    - Cantilever scaffolds
    - Protection fans
    - Cantilever loadings bays
    - Truss out scaffolds
    - Freestanding towers
    - Power line crossings
    - Guys and struts
    - Access birdcages
    - Hoist towers

- Ladder towers
- Stair towers
- Stair towers
- Slung scaffolds
- Pedestrian bridges and walkways
- Temporary ramps and elevated roadways
- Masts
- Lighting towers Transmission towers
- Lifting gantries
- Temporary buildings
- Temporary roofs
- Spectator terraces and seating stands
- Temporary storage on site
- Sheeted scaffolds including open mesh sheeting
- Scaffolds deriving lateral support from buttressing
- Scaffolds including a standard bearing on a bridging beam or bracing

375 **FIXINGS/TIES:** Ties and anchorages to external walls will need the careful consideration of the Designers, and is to be agreed with the Architect prior to the tender submission.

380 **WIND LOADING:** To be in accordance with CP3, Chapter V, Part 2, 1972 and as modified by BRE Digest 119 Edition 1984. It is anticipated that the scaffold shall be in position for no longer than three months.

385 **SNOW LOADS:** A snow load of 0.32 kN/m<sup>2</sup> is to be used

390 **PLATFORM LOADS:** Shall be appropriate to the designation of the scaffold but not less than 2.5kN/m<sup>2</sup>. Any 2 levels may be fully loaded at any one time. The scaffolding contractor should allow for the worst condition. Co-ordinate with sub-contractors at design and tender stages the loadings required for working platforms and storage of materials on the scaffold. Tiles will be required to stored on the eaves lift or on appropriate loading platforms.

400 **ROOF LOADS:** To be in accordance with BS 6399, Part 3, 1988.

420 **LOADING ON EXISTING STRUCTURES:** The scaffolding may not take bearing from nor gain restraint from the building at any position. i.e. the scaffold is to be a completely independent structure (except where stated otherwise in this specification or shown on the drawings).

Foot ties and butts will be permitted subject to details of how the fabric will be protected (i.e., foam cushions, plywood and polystyrene packs) and provided all ties through window openings are made secure.

It is anticipated that there will some 20mm lateral movement of the scaffold. The contractor is to make his own assessment of this movement and maintain sufficient clearance between the scaffold structure and the Guildhall to accommodate the expected movement.

430 **SUPPORT STRUCTURE OF SCAFFOLD:** The support structure of the scaffold should be concentrated as necessary to leave the area adjacent to the building as free as possible for use by the stone masons and other parties wishing access to the Guildhall.

440 **SHEETING ENVELOPE:** (see clauses B11 140 and 150) the roof cladding is to be securely fixed down to the scaffold structure in accordance with the manufacturer's recommendations. Ensure fixings and joints are watertight, taking special care at any hips, ridges etc.

The sides are to be enclosed in fire and water retardant sheeting to prevent wind blow rain onto the roofs. At times the entire enveloping may be enclosed to allow heating to ensure ambient temperatures do not fall below those critical for the brick, stone or mortar works.

450 **RAINWATER:** 150 x 150mm metal or UPVC gutters to be fitted to the eaves of the temporary roof. Gutters to collect rain water which will be conducted away by upvc downpipes to suitable

drainage points. Liaise with the CA and install downpipes in agreed positions and drainage points.

- 460 PLATFORMS: Standards to be designed and erected to allow a minimum of two clear scaffold boards width between them and the building elevation or elevational details such as window heads, cornices etc.

The scaffold is to be completely boarded out at each lift level. Around the exterior envelope hand rails and toe boards will be required.

Set out lifts to suit principal features of elevations and avoid cutting across windows. Ensure that boards are fully supported and lie flush, to prevent traps, particularly at ladder holes. Allow boards immediately adjacent to walls to lift out.

- 470 LADDERS: Provide ladder access for full height of scaffold in two positions set as far apart as practicable and not so located to interfere with access to the face of the building. Position to be agreed with the CA. Ladders to extend a single lift at one time.

- 480 LIGHTNING PROTECTION: Bond scaffold to suitable lightning conductor terminal(s) driven into the ground or in pits in positions agreed with the CA to comply with the requirements of BS 6651. Test connection(s) and continuity through scaffold on completion of the contract. Provide details of lightning protection proposed with the tender and to the approval of the CA.

- 490 CLEARANCES: Clear access is to be provided to all doorways at all times unless otherwise agreed with the CA in writing. The lifts immediately above all openings and also over the South Street gantry are to have hardboard sheeting and polythene sheeting placed below the scaffold boards to prevent any debris falling. The scaffold temporary roofs will have a minimum of 600mm clearance over the existing roofs.

- 500 FIXINGS/TIES: All scaffold to be fully independent with no physical fixings into the fabric except to the north east corner where anchors into the modern theatre wall are shown on the drawings. Butts and ties through windows will be accepted (see clause 420).

- 510 CONTROL OF WORK ON SITE:

- Notwithstanding the overall responsibilities of the Main Contractor for site activities and health and safety, adequate supervision must be provided by the Scaffolding Contractor at all times during erection and dismantling of scaffolding and temporary structures.
- Designers of special scaffolds should, under the terms of contract, be required to attend site on the first day of erection to liaise, and brief the Scaffolding Supervisor on the requirements of the design.
- Designers should be required to emphasize that any variations to the design will not be permitted, without the designer's written authority. Any agreed variations must be clearly documented and must go through the Main Contractor and Planning Supervisor to be checked by a competent person.
- Designers should also be required to visit the site at least weekly during erection. On completion the Designer should certify (on F91 part 1 section A) to the Main Contractors that the scaffold has been erected full in accordance with the design and any approved variations. Copies of the certification should be passed to the Planning Supervisor.
- All scaffolds and structures should be inspected at least every seven days (and after weather conditions likely to have affected their strength or stability) by a competent person.
- Records of such inspections together with necessary action must be made in register F91 and signed by the person making the inspection.
- No alterations must be made at any time without written authority from the Designer and the Main Contractor.
- At all times during erection, dismantling or alteration to scaffold structures, access to the working areas needs to be clearly defined by suitable barriers and notices. Notices warning "incomplete scaffold" should be secured as necessary in an appropriate place.
- It is a wise precaution to stop all work on external scaffolding during a thunderstorm.

- 520 PROTECTION:
- Tubes bearing on masonry should be provided with suitable timber bearers. Against leadwork, felt or other suitable packing should be used between the timber and leadwork.
  - All scaffold tube ends which are near or likely to come into contact with the fabric of the building during erection, dismantling or as a consequence of lateral movement should be provided with plastic end caps.
  - All scaffolding and temporary structures must be adequately earthed against lightning strikes, or bonded into the existing installation and is to be carried out by an approved lightning conductors specialist.
- 530 PUBLIC ACCESS:
- During erection, modification or dismantling, care must be taken to exclude the public and staff from a clearly defined area around the work.
  - Authorised access thoroughfares must have effective protection in the form of fans, netting, sheeting, brick guards, etc., to protect persons from falling objects.
  - Ladders must not be left unattended when accessible to the public.
  - Ladders at ground floor level and other risk areas should be removed and securely locked away at the end of each working day.
- 540 MOBILE SCAFFOLD TOWERS:
- Mobile scaffold towers should be designed and used in accordance with HSE Guidance Note GS42.
  - If a static tower is to be free standing (that is not tied to a building), the maximum height to base ratio, is 4:1 for use inside a building and 3:5:1 for use outside buildings.
  - If a mobile tower is to be free standing, the maximum height to base ratio, is 3:5:1 for use inside a building and 3:0:1 for use outside the building.
  - The minimum base dimensions can be increased, and stability improved, by the use of outriggers or stabilisers.
  - The recommended maximum height for a free standing tower is 9.6m when mobile and 12m when static.
- 550 PROVIDE, MAINTAIN AND ADAPT: All platforms, ladders, hoists, scaffolding, sheeting, hoarding, temporary roofs and protection as necessary for the proper execution of the works including that required for sub-contractors. Inspect regularly in accordance with the regulations and maintain records of these inspections on site. Co-ordinate the design and erection of scaffolding with general and sub-contractors programme and working requirements.
- 560 TAKE CARE: To prevent damage to the existing buildings, its fittings and furniture. Any damage caused to the building is to be made good to the approval of the CA at the Contractor's expense. Listed Buildings are of national historical and CAural importance and the historic fabric is vulnerable to damage and much of it irreplaceable. All personnel should be made aware of this and treat the building with great care. When erecting high level scaffolding internally, valuable fittings below the working area (e.g. organs, monuments, decorative plaster features) must be temporarily protected from damage and dirt during the erection and striking of scaffold, and this must be included in any proposal.
- 570 PERMISSIBLE BEARING PRESSURE: Ensure that the permissible bearing pressure of the ground or of the building below the structure is not exceeded. Set standards on scaffold boards to spread the load, taking care not to block access to drains, rainwater channels, outlets etc. Where founded on soil, set out on appropriate spreaders as sole plates. Provide protection to any underlying stone, leadwork, asphalt etc. with 50mm polystyrene and 19mm plywood as base for scaffold supports.
- 580 SCAFFOLD TUBE ENDS: All to be covered with plastic caps where within 50mm of the building. All ends to be kept a minimum of 100mm back from any glazing. Where butting is permitted provide detail of padding to butt to avoid damage to fabric. Assume minimum of 50mm polystyrene and 19mm plywood. Wrap any vulnerable carvings or fittings with bubble wrap and cover glass or decorations in rigid sheeting where adjacent to scaffolding.

- 590 FIRE ESCAPE: Do not obstruct means of escape routes from the site or adjoining buildings unless alternative routes are provided, signed and agreed in writing with the CA.
- 600 *UNAUTHORISED ACCESS: Take all reasonable precautions to ensure that unauthorised persons cannot gain access to scaffolds. Remove and lock up all ladders from the bottom lift of scaffolding and secure all gates each night*

### LEGISLATION

1. **THE HEALTH AND SAFETY AT WORK ETC. ACT 1974 :-**
  - Asbestos (Licensing) Regulations 1983
  - Control of Asbestos at Work Regulations 1987
  - Control of Asbestos in the Air Regulations 1990
  - Reporting of Injuries, Diseases and Dangerous Occurrence Regulations 1995
  - Management of Health and Safety at Work Regulations 1992
  - Workplace (Health, safety and Welfare) Regulations 1992
  - Personal Protective Equipment at Work Regulations 1992
  - Provision and Use of Work Equipment Regulations 1992
  - Construction (Design and Management) Regulations 1994
  - Carriage of Dangerous Goods by Road or Rail (Classification, Packaging and Labeling) Regulations 1994
  - Road Traffic (Carriage of Dangerous Substances in Packages etc) Regulations 1992
  - Road Traffic (Carriage of Dangerous Substances in Tankers and Tank Containers) Regulations 1992
  - Road Traffic (Training of Drivers of Vehicles Carrying Dangerous Goods) Regulations 1992
  - Asbestos (Prohibitions) Regulations 1985
  - The Health and Safety (Emissions into the Atmosphere) Regulations 1983
  - The Health and Safety (Fees) Regulations 1989
  - Chemicals (Hazard Information and Packaging) Regulations 1993
  - Control of substances Hazardous to Health Regulations 1994.
2. **CONTROL OF POLLUTION ACT 1974 :-**
  - Control of Pollution (Special Waste) Regulations 1987
  - Special Waste Regulations 1996
  - Collection and Disposal of Waste Regulations 1988
3. **ENVIRONMENTAL PROTECTION ACT 1990 :-**
  - Environmental Protection (Duty of Care) Regulations 1991
  - Waste Management Licensing Regulations 1994
  - Controlled Waste Regulations 1992
  - Controlled Waste (Regulations of Carriers and Seizure of Vehicles) Regulations 1991
  - Environmental Protection (Prescribed Processes and Substances) Regulations 1991.
4. **DEREGULATION AND CONTRACTING OUT ACT 1994 :-**
  - Section 33.
5. **CONSUMER SAFETY ACT 1978 :-**
  - Asbestos products (Safety) Regulations 1985.
6. **WATER ACT 1989, WATER INDUSTRY ACT 1991, WATER RESOURCES ACT 1991, LAND DRAINAGE ACT 1991, STATUTORY WATER COMPANIES ACT 1991 & WATER CONSOLIDATION (CONSEQUENTIAL PROVISIONS) ACT 1991 :-**
  - Trade Effluents (Prescribed Processes and Substances) Regulations 1989.

**APPROVED CODES OF PRACTICE:-**

- The Control of Asbestos at Work (Second Edition) 1993
- Work with asbestos insulation, asbestos coating and asbestos insulating board (Second Edition) 1993
- A Guide to the Asbestos (Licensing) Regulations 1983 (1989)
- Waste Management. The Duty of Care. A code of practice (1991)
- Respiratory Protective Equipment, a practical guide for users (1990)
- Respiratory Protective Equipment, Legislative requirements and lists of HSE approved standards and type approved equipment, Fourth Edition (1995)
- Selecting respiratory protective equipment for work with asbestos, INDG264.

**HEALTH AND SAFETY EXECUTIVE GUIDANCE NOTES****1. ENVIRONMENTAL HYGIENE SERIES:-**

- EH 10 ASBESTOS: exposure limits and measurement of airborne dust concentrations (revised 1995)
- EH 47 The provision, use and maintenance of hygiene facilities for work with asbestos insulation and coatings (revised September 1990)
- EH 50 Training operatives and supervisors for work with asbestos insulation and coatings (March 1988)
- EH 51 Enclosures provided for work with asbestos insulation, coatings and insulating board (January 1989)
- EH 52 Removal techniques and associated waste handling for asbestos insulation, coatings and insulating board (December 1989)
- EH 57 The problems of asbestos removal at high temperatures (December 1992)
- EH 71 Working with asbestos cement and asbestos insulating board (1996)

**2. MEDICAL SERIES:-**

- MS 5 Lung Function (July 1977)
- MS 6 Chest x-rays in dust diseases (September 1980)
- MS 13 Asbestos (revised, April 1988).

**3. METHODS FOR THE DETERMINATION OF HAZARDOUS SUBSTANCES SERIES**

- :-
- MDHS 39/4 Asbestos fibres in air, sampling and evaluation by Phase Contrast Microscopy (PCM) under the Control of Asbestos at Work Regulations (November 1995) ; (2nd Impression)
- MDHS 77 Asbestos in bulk materials, sampling and identification by polarised light microscopy (PLM) (June 1994) .

710 UNKNOWN HAZARDS: Inform the CA of any unrecorded voids, tanks, chemicals, etc. discovered during demolition work. Agree with the CA, methods for safe removal, filling, etc.

740 COMPLETION: Clear away all debris and leave the site in a tidy condition on completion.

**MATERIALS ARISING**

810 OWNERSHIP: Components and materials arising from the demolition are to become the property of the Contractor except where otherwise provided. Remove from site as work proceeds.

**C51 REPAIRING/ RENOVATING/ CONSERVING TIMBER****GENERAL****150 TIMBER PROCUREMENT**

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

**160 TIMBER SUPPLIER**

Supplier: Contractor's choice.

**STRUCTURAL REPAIRS/ ALTERATIONS****PRODUCTS****340 STRUCTURAL SOFTWOOD OUTBUILDNG REPAIRS**

- Species and origin: C16..
- Grading standard: To BS4978, BSEN14081-1
- Surface finish: Sawn.
- Treatment: Fire Retardant impregnation to NBS section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification FR2.
- Moisture content (maximum) at time of installation: 20%.

**341 STRUCTURAL HARDWOOD REPAIRS**

- Species and origin: oak
- Grading standard: to BE5756 and so marked
  - Grade THB
- Surface finish: sawn
- Treatment: fire retardant to NBS Section Z12 and British Wood Preserving and Damp Proofing Association Commodity specification FR2.
- Moisture content (maximum) at time of insulation: 20%

**EXECUTION****600 WORKMANSHIP**

- Skill and experience of site operatives: Appropriate for types of work on which they are employed.
- Documentary evidence: Submit on request.

**610 TEMPORARY SUPPORTS/ PROPPING**

- General: Provide adequate temporary support at each stage of repair work to prevent damage, overstressing or uncontrolled collapse of any part of the structure.
- Bearings for temporary supports/ propping: Suitable to carry loads throughout repair operations.

**620 PROTECTION OF TIMBER AND WOOD COMPONENTS BEFORE AND DURING INSTALLATION**

- Storage: Keep dry, under cover, clear of the ground and with good ventilation. Support sections/ components on regularly spaced, level bearers on a dry, firm base.
- Handling: Do not overstress, distort or disfigure sections or components during transit,

storage, lifting, erection or fixing.

#### 650 DIMENSIONS GENERALLY

- Site dimensions: Take as necessary before starting fabrication.
  - Discrepancies with drawings: Report without delay and obtain instructions before proceeding.

#### 660 CROSS SECTION DIMENSIONS OF STRUCTURAL SOFTWOOD AND HARDWOOD

- General: Dimensions given on drawings and in schedules of work are finished sizes.
- Maximum permitted deviations from finished sizes:
  - Sawn surfaces:
    - Thickness and widths < 100 mm: -1, +3 mm.
    - Thickness and widths > 100 mm: -2, +4 mm.
  - Further processed surfaces:
    - Thickness and widths < 100 mm: -1, +1 mm.
    - Thickness and widths > 100 mm: -1.5, +1.5 mm.

#### 680 WARPING OF TIMBER

- Bow, spring, twist and cup: Not greater than the limits set down in BS 4978, BS EN 519 or BS EN 14081-1 for softwood, or BS 5756 for hardwood.

#### 710 REUSE OF TIMBER SECTIONS/ WOOD COMPONENTS

- Sections/ components scheduled to be removed but not reused in existing locations: Agree extent of retention for reuse elsewhere in the works.
  - Treatment following removal: To be agreed.
  - Storage: Protect against damage, and store until required.
    - Storage location: On site.
- Reuse: Adapt sections/ components, as necessary, and install in agreed locations.

#### 750 CLEANING DIRTY OR STAINED WOOD

- Generally: Scrub with neutral pH soap and clean, warm water.
- Old varnish: Remove using mixture of turpentine (not turpentine substitute) and acetone in proportions determined by experiment, followed by washing down.

#### 790 PEGS FOR MORTISE AND TENON JOINTS IN STRUCTURAL TIMBER

- Wood species: Oak.
- Condition: Dry, preferably oven 'baked' before use.
- Shape: Round and tapered.
- Second hand pegs: Do not use.
- Peg holes: Slightly offset such that when pegs are driven home, sections being joined are pulled together.

#### 820 MAKING CONNECTED JOINTS

- Connector location: Where not shown otherwise, spacings, end and edge distances to be not less than Standard values to BS 5268-2, Section 6.
- Bolt hole: As close as practical to nominal diameter of bolt, and not more than 2 mm greater.
- Centres of bolt holes: Not more than 2 mm from positions shown on drawings.
  - Assembly: Do not crush timber, deform washers or overstress bolts.

#### 870 MOISTURE CONTENT TESTING

- Procedure: When instructed, test timber sections with an electrical moisture meter with deep probes, that has been carefully calibrated against oven drying tests or otherwise guaranteed by an independent testing authority.
- Test sample: Test 5% but not less than 10 lengths of each cross-section in the centre of the length.
- Test results: 90% of values obtained to be within the specified range. Provide records of all tests.

**COMPLETION**

910 MECHANICALLY FASTENED JOINTS

- General: Inspect accessible bolted, coach screwed and timber pegged joints and tighten fasteners if necessary.

Timing: On Completion and at end of Defects Liability Period or Rectification Period.

**E05 IN SITU CONCRETE CONSTRUCTION GENERALLY****235 OPENINGS, INSERTS AND FIXINGS**

- Requirement: Collate all information.
- Submit: Details where openings, inserts and fixings can only be accommodated by adjustments to reinforcement.
- Locate reinforcement: To ensure specified minimum cover at openings and inserts and to be clear of fixing positions.

**290 ACCURACY OF CONSTRUCTION**

- Reference system: To BS 5964-1
- Element shape and position: To Section 7 of the 'National Structural Concrete Specification for Building Construction'.  
Substitution of alternative requirements: None.

**300 LEVELS OF STRUCTURAL CONCRETE FLOORS**

- Tolerances (maximum):
  - Level of floor: As Preliminaries section A33.
  - Steps in floor level: Not applicable.

**310 SURFACE REGULARITY OF CONCRETE FLOORS TO BS 8204 - GENERAL**

- Standard: To BS 8204-1 or -2.
- Measurement: From underside of a 2m straightedge (between points of contact) placed anywhere on surface and using a slip gauge.

**E10 MIXING/CASTING/CURING IN SITU CONCRETE****CONCRETE**

- 101 SPECIFICATION
- Concrete generally: To BS 8500-2.
  - Exchange of information: Provide concrete producer with information required by BS 8500-1, clauses 4 and 5.
- 106 DESIGNATED CONCRETE FOR RAFT FOUNDATIONS, GROUND BEARING SLAB
- Designation: RC28/35.
  - Fibres: Not required.
  - Aggregates:
    - Size (maximum): 20 mm.
    - Coarse recycled aggregates: Not permitted.
    - Additional aggregate requirements: None.
  - Special requirements for cement/ combinations: None.
  - Consistence class: Normal.
  - Chloride class: Cl 1.0.
  - Admixtures: Concrete producer's choice.  
Additional mix requirements: None.
- 125 SUBSTITUTION OF STANDARDIZED PRESCRIBED CONCRETE FOR DESIGNATED CONCRETE
- General: Conform to BS 8500-2, clause 9.
  - Substitution: In accordance with BS 8500-1, table A. 13.
    - Proposals: Submit for each substitution, stating reasons.
  - Site mixing: Permitted as clause 218.
- MATERIALS, BATCHING AND MIXING**
- 215 READY-MIXED CONCRETE
- Production plant: Currently certified by a body accredited by UKAS to BS EN 45011 for product conformity certification of ready-mixed concrete .
  - Source of ready-mixed concrete: Obtain from one source if possible . Otherwise, submit proposals .
    - Name and address of depot: Submit before any concrete is delivered .
    - Delivery notes: Retain for inspection .
  - Declarations of nonconformity from concrete producer: Notify immediately .
- 218 SITE MIXED CONCRETE
- Batching by mass:
    - Restrictions: None.
    - Accuracy of measuring devices: To BS EN 206-1, clause 9.6.2.2.  
Tolerances for quantity of constituent material: To BS EN 206-1, table 21.
  - Batching by volume:
    - Restrictions: None.
    - Mixing: To BS 8000-2.1, subsections 2, 3 and 4.
- 221 INFORMATION ABOUT PROPOSED CONCRETES
- Submit when requested:
    - Details listed in BS 8500-1, clause 5.2.
  - Additional information: None.
- 225 CHANGES TO SPECIFICATION
- Changes to specification of fresh concrete (outside concrete producer's responsibility): Prohibited.

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

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

#### PROJECT TESTING/ CERTIFICATION

- 505 PROJECT TESTING OF CONCRETE - GENERAL
- Testing: To achieve strength gain at 7 and 28 days.
    - Nonconformity: Obtain instructions immediately.
  - Recording: Maintain complete correlated records including:
    - Concrete designation.
    - Sampling, site tests, and identification numbers of specimens tested in the laboratory.
    - Location of the parts of the structure represented by each sample.
      - Location in the structure of the batch from which each sample is taken.
- 508 REGULAR PROJECT TESTING OF CONCRETE
- Tests: Compressive strength testing at 7 and 28 days.
  - Sampling:
    - Point: At point of placing.
    - Rate: 1 sample from each days concreting.Other requirements: None.
- 520 TESTING LABORATORY
- Laboratory: Accredited by UKAS or other national equivalent.
    - Name and UKAS reference number: Submit well in advance of making trial mixes or concrete for use in the works.
- 530 TESTS RESULTS
- Submission of reports: Within one day of completion of each test.
    - Number of copies: One.Reports on site: A complete set, available for inspection.
- 550 BROKEN CUBES FROM FAILED STRENGTH TESTS
- Nonconformity: Keep separately the pieces of each cube which fail to meet the conformity requirements for individual results.
    - Period for keeping cubes: Obtain instructions.

**PLACING/ COMPACTING/ CURING AND PROTECTING**

- 630 **PREMATURE WATER LOSS**
- Requirement: Prevent water loss from concrete laid on absorbent substrates .
    - Underlay: Select from:
      - Polyethylene sheet: 250 micrometres thick .
      - Building paper: To BS 1521, grade B1F .
      - Installation: Lap edges 150 mm .
- 648 **ADVERSE TEMPERATURE CONDITIONS**
- Requirement: Submit proposals for protecting concrete when predicted ambient temperatures indicate risk of concrete freezing or overheating.
- 650 **SURFACES TO RECEIVE CONCRETE**
- Cleanliness of surfaces immediately before placing concrete: Clean with no debris, tying wire clippings, fastenings or free water .
- 680 **PLACING**
- Records: Maintain for time, date and location of all pours.
  - Timing: Place as soon as practicable after mixing and while sufficiently plastic for full compaction.
  - Temperature limitations for concrete: 30 °C (maximum) and 5 °C (minimum), unless otherwise specified. Do not place against frozen or frost covered surfaces.
  - Continuity of pours: Place in final position in one continuous operation up to construction joints. Avoid formation of cold joints.
  - Discharging concrete: Prevent uneven dispersal, segregation or loss of ingredients or any adverse effect on the formwork or formed finishes.
  - Thickness of layers: To suit methods of compaction and achieve efficient amalgamation during compaction.
  - Poker vibrators: Do not use to make concrete flow horizontally into position, except where necessary to achieve full compaction under void formers and cast-in accessories and at vertical joints.
- 690 **COMPACTING**
- General: Fully compact concrete to full depth to remove entrapped air. Continue until air bubbles cease to appear on the top surface.
    - Areas for particular attention: Around reinforcement, under void formers, cast-in accessories, into corners of formwork and at joints.
  - Consecutive batches of concrete: Amalgamate without damaging adjacent partly hardened concrete.
    - Methods of compaction: To suit consistence class and use of concrete.
- 720 **VIBRATORS**
- General: Maintain sufficient numbers and types of vibrator to suit pouring rate, consistency and location of concrete .
    - External vibrators: Obtain approval for use .
- 730 **PLASTIC SETTLEMENT**
- Settlement cracking: Inspect fresh concrete closely and continuously wherever cracking is likely to occur, including the top of deep sections and at significant changes in the depth of concrete sections .
    - Timing: During the first few hours after placing and whilst concrete is still capable of being fluidized by the vibrator .
    - Removal of cracks: Revibrate concrete .
- 810 **CURING GENERALLY**
- Requirement: Keep surface layers of concrete moist throughout curing period, including perimeters and abutments, by either restricting evaporation or continuously wetting surfaces of concrete.

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

#### 811 COVERINGS FOR CURING

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

#### 818 CURING PERIODS GENERALLY

Minimum periods: When not otherwise indicated to BS 8110-1, table 6.1.

#### 840 PROTECTION

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

**E30 REINFORCEMENT FOR IN SITU CONCRETE**

To be read with Preliminaries/General conditions.

**REINFORCEMENT**

110 **QUALITY ASSURANCE:** All steel reinforcement specified to comply with BS 4449 or BS 4483 and cut and bent to BS 4466 is to be obtained from firm(s) holding a valid certificate of approval issued under a product certificate scheme operated by a third party certification body with appropriate Category 2 accreditation from the United Kingdom Accreditation Service (UKAS).

140 **PLAIN BAR REINFORCEMENT:** To BS 4449, Grade H500.

150 **DEFORMED BAR REINFORCEMENT:** To BS 4449, Grade H500.

210 **FABRIC REINFORCEMENT:** To BS 4483.

**WORKMANSHIP**

310 **CUT AND BEND** reinforcement to schedules and to BS 4466. Do not bend when below 5 degrees without approval. Steel may be warmed to not more than 100 degrees. Do not rebend bars without approval. Tag bundles of reinforcement with labels to BS 4466

317 **MECHANICAL DAMAGE:** Reinforcement must not be roughly handled, dropped from a height, or subjected to shock loading or mechanical damage.

325 **CLEANLINESS:** At time of placing concrete, reinforcement to be clean and free of corrosive pitting, loose millscale, loose rust, ice, oil and other substances which may adversely affect the reinforcement, concrete, or bond between the two.

330 **ADJUSTMENTS:** Provide on site facilities for hand bending to deal with approved minor adjustments.

360 **PROJECTING REINFORCEMENT:** Grade 250 bars may be bent to radii not less than BS 4466, Table 3. Grade 460 bars must not be bent or straightened without approval

421 **LAPS** in fabric reinforcement, where not detailed, to be not less than 250 mm. Where necessary seek instructions to avoid a four layer build-up at corners.

434 **STRUCTURAL WELDED JOINTS** will not be permitted.

445 **MECHANICAL JOINTS** may be substituted for lapped joints subject to approval. Submit full details, including joint type(s) and location(s). Accept responsibility for cost of checking by the CA and for any supervision and testing.

**451 FIXING GENERALLY:**

- Unless otherwise permitted fix reinforcement in position before placing concrete. In addition to any spacers and chairs shown on drawings or schedules, provide adequate support, tie securely and maintain the specified cover. Comply generally with Concrete Society Report CS 101 'Spacers for reinforced concrete' 1989.
- Unless otherwise specified tie using 16 swg annealed tying wire. Ensure that tying wire does not intrude into the concrete cover. Do not tack weld unless authorised by the CA and recommended by the reinforcement manufacturer.
- Do not fix or place reinforcement in contact with nonferrous metals.

455 **FIX STAINLESS STEEL REINFORCEMENT** as clause 451 using 16 swg annealed stainless steel wire.

- 465 FIX EPOXY COATED REINFORCEMENT as clause 451 and BS 7295:Part 1, Appendix E.
- 470 COVER:
- Not less than the nominal cover minus 5 mm.
  - Where reinforcement is located in a particular direction in relation to only one face of a member, not more than the nominal cover plus:  
5 mm on bars up to and including 12 mm size.  
10 mm on bars over 12 mm up to and including 25 mm size.  
15 mm on bars over 25 mm size.
  - Before concreting check thoroughly that the specified cover dimensions have been obtained.
- 481 GROUND BEARING SLABS: Where these are reinforced with a single layer of fabric in the upper part of the slab, the fabric may be placed in position on top of the first compacted layer of concrete, followed by the top layer of concrete, placed within two hours of the first layer.
- 491 SPACERS to formed concrete finishes, if permitted (see section E20) to be approved type(s).
- 500 DAMAGE: Prevent damage to and disfigurement of forms, form linings and adjacent work.
- 510 RUST STAINING: Prevent rust staining of surfaces of concrete which will be exposed to view in the finished work, caused by, e.g. rust stained formwork or unprotected projecting reinforcement.
- 520 CHECKING COVER: Check the position of the reinforcement in the hardened concrete as soon as practicable after casting using a magnetic induction digital display type cover meter in accordance with manufacturer's recommendations and BS 1881:Part 204. Pay particular attention to columns, beams, cantilevers, soffits of slabs and all faces which will be exposed to the weather in the finished building. Inform CA when such checking is to be carried out, confirm that it has been carried out and that the results were satisfactory.

**F10 BRICK/ BLOCK WALLING****TYPES OF WALLING****350 CONCRETE COMMON BLOCKWORK FOR NEW EXTENSION**

Blocks: to BS6073 Part 1

Manufacturer and reference: Contractor to source

Minimum average compressive strength: 3.5N/sqmm

Thermal resistance: Not less than 0.49sqm deg c/w at 3% moisture content

Mortar: as section Z21

Mix: 1:1:5.5 Cement:Lime:Sand

**351 CONCRETE COMMON BLOCKWORK FOR BELOW GROUND LEVEL DPL ON NEW EXTENSION**

Blocks: to BS6073 Part 1

Manufacturer and reference: Contractor to source

Minimum average compressive strength: 7.5N/sqmm

Thermal resistance: Not less than 0.49sqm deg c/w at 3% moisture content

Mortar: as section Z21

Mix: 1:0.5:4.5 Cement:Lime:Sand

**WORKMANSHIP GENERALLY****420 SITE STORAGE:**

- Store bricks/blocks in stable stacks clear of the ground and clearly identified by type, strength, grade, etc. Protect from adverse weather and keep clean and dry.

**430 CONDITIONING OF CLAY AND CALCIUM SILICATE BRICKS**

- Bricks delivered warm from manufacturing process: Do not use until cold.

Absorbent bricks in warm weather: Wet to reduce suction. Do not soak.

**440 CONDITIONING OF CONCRETE BRICKS/BLOCKS:**

- Do not use autoclaved concrete bricks/blocks when still warm from the manufacturing process.
- Do not use nonautoclaved concrete bricks/blocks until at least four weeks after casting.
- Do not wet concrete bricks or blocks before laying; use an approved water retaining admixture in the mortar to counteract suction.

**460 MORTAR GROUPS:** Where mortar is specified by group number, select any mortar in that group as set out below. Mix proportions are by volume. Use the same mortar throughout any one type of facing work.

Mortar group	1	2	3	4
Cement:lime: sand	1:0-0.25:3	1:0.5:4-4.5	1:1:5-6	1:2:8-9
Cement:premixed lime & sand (proportion of lime to sand given in brackets)	1:3 (1:12)	1:4-4.5 (1:9)	1:5-6 (1:6)	1:8-9 (1:4.5)
Cement:sand & air entrainer	-	1:3-4	1:5-6	1:7-8
Masonry cement: sand	-	1:2.5-3.5	1:4-5	1:5.5-6.5

- 500 LAYING GENERALLY
- Mortar joints: Fill vertical joints. Lay bricks, solid and cellular blocks on a full bed.
  - Bond where not specified: Half lap stretcher.
  - Vertical joints in facework: Even widths. Plumb at every fifth cross joint.
- 511 OVERHAND LAYING will be permitted subject to compliance with this specification and approval of samples and methods of carrying out the work.
- 520 ACCURACY
- Courses: Level and true to line.
  - Faces, angles and features: Plumb.
  - Permissible deviations:
    - Position in plan of any point in relation to the specified building reference line and/ or point at the same level  $\pm 10$  mm.
    - Straightness in any 5 m length  $\pm 5$  mm.
    - Verticality up to 3 m height  $\pm 10$  mm.
    - Verticality up to 7 m height  $\pm 14$  mm.
    - Overall thickness of walls  $\pm 10$  mm.
    - Level of bed joints up to 5 m (brick masonry)  $\pm 11$  mm.
    - Level of bed joints up to 5 m  $\pm 13$  mm.
- 535 HEIGHT OF LIFTS IN WALLING USING CEMENT GAUGED OR HYDRAULIC LIME MORTAR
- Quoins and advance work: Rack back.
  - Lift height (maximum): 1.2 m above any other part of work at any time.
  - Daily lift height (maximum): 1.5 m for any one leaf.
- 545 LEVELLING OF SEPARATE LEAVES: Bring both leaves of cavity walls to the same level at:
- 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.
- 561 COURSING BRICKWORK WITH EXISTING
- Gauge: Line up with existing brick courses.
- 595 LINTEL BEARINGS: Carefully predetermine setting out to ensure that full length masonry units occur below lintel ends.
- 610 SUPPORT OF EXISTING WORK
- Joint above inserted lintel or masonry: Fully consolidated with semidry mortar to support existing structure.
- 615 BRICKWORK TO RECEIVE ASPHALT DPC
- Substrate: Mortar bed finished flush, smooth and level.
- 635 JOINTING
- Profile: Consistent in appearance.
- 645 ACCESSIBLE JOINTS NOT EXPOSED TO VIEW
- Jointing: Struck flush as work proceeds.

- 665 POINTING TO BRICKWORK ABOVE DPC
- Joint preparation: Remove debris. Dampen surface.
  - Mortar: As section Z21.
    - Standard: Not applicable.
    - Mix: 1:3 natural hydraulic lime:sand.
    - Additional requirements: Sand to be selected for mortar to match existing, check with supplier regarding suitability of lime, with regard to site conditions and seasonal climatic conditions of installation.
- Profile: To be approved externally.
- 671 FIRE STOPPING
- Avoidance of fire and smoke penetration: Fit tightly between cavity barriers and masonry. Leave no gaps.
- 690 ADVERSE WEATHER
- General: Do not use frozen materials or lay on frozen surfaces.
  - Air temperature requirements: Do not lay bricks/ blocks:
    - In cement gauged mortars when at or below 3°C and falling or unless it is at least 1°C and rising.
    - In hydraulic lime:sand mortars when at or below 5°C and falling or below 3°C and rising.
    - In thin joint mortar glue when outside the limits set by the mortar manufacturer.
  - Temperature of walling during curing: Above freezing until hardened.
  - Newly erected walling: Protect at all times from:
    - Rain and snow.
- Drying out too rapidly in hot conditions and in drying winds.

#### ADDITIONAL REQUIREMENTS FOR FACEWORK

- 710 THE TERM FACEWORK
- Definition: Applicable in this specification to brick/ block walling finished fair.  
Painted facework: The only requirement to be waived is that relating to colour.
- 730 BRICK/ CONCRETE BLOCK SAMPLES
- General: Before placing orders with suppliers submit for approval of appearance labelled samples of the following: Bricks as in clause F10/110,111,230 .  
Selection of samples: Representative of the range in variation of appearance.
- 745A MASONRY SAMPLE PANELS
- The first 1m<sup>2</sup> of brick plinth constructed will be used as a sample panel and approved by the client prior to continuation of the work.
- 750 COLOUR CONSISTENCY OF MASONRY UNITS
- Colour range: Submit proposals of methods taken to ensure that units are of consistent and even appearance within deliveries.
  - Conformity: Check each delivery for consistency of appearance with previous deliveries and with approved reference panels; do not use if variation is excessive.  
Finished work: Free from patches, horizontal stripes and racking back marks.
- 760 APPEARANCE
- Brick/ block selection: Do not use units with damaged faces or arrises.
  - Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.
  - Quality control: Lay masonry units to match relevant reference panels.
    - Setting out: To produce satisfactory junctions and joints with built-in elements and components.
    - Coursing: Evenly spaced using gauge rods.
  - Lifts: Complete in one operation.  
Methods of protecting facework: Submit proposals.
- 780 GROUND LEVEL

- Commencement of facework: Not less than 150 mm below finished level of adjoining ground or external works level.
- 790 PUTLOG SCAFFOLDING  
Use: Not permitted in facework.
- 800 TOOTHED BOND
- New and existing facework in same plane: Bond together at every course to achieve continuity.
- 830 CLEANLINESS
- Facework: Keep clean.
  - Mortar on facework: Allow to dry before removing with stiff bristled brush.  
Removal of marks and stains: Rubbing not permitted.

**G20 CARPENTRY/ TIMBER FRAMING/ FIRST FIXING****GENERAL****105 TIMBER PROCUREMENT**

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

**150 STRENGTH GRADING OF TIMBER**

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

**160 GRADING AND MARKING OF SOFTWOOD**

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

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

- Grading standard: To BS 4978, BS EN 14081-1, or other national equivalent and so marked.
- Strength class to BS EN 338: C16 or C24 if noted on drawings.
- Treatment: Waterbased micro emulsion impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C8, Service life: 40 years.

**230 GRADED SOFTWOOD FOR TIMBER REPAIRS/ NEW ROOF MEMBRANE**

- Strength graded to be the appropriate standard or rules for the specified grade and so marked
- Grade: C24
- Preservative treatment: As section 212 and British Wood Preserving and damp-proofing Association Commodity Specification C8.
- Desired service life: 50 years
- Moisture content at time of erection: As Clause 450.

**250 GRADED HARDWOOD FOR TIMBER REPAIRS**

- Strength graded to BS5756 and so marked.
- Strength class to BSEN338:D30.
- Preservative treatment as section Z12 and British Wood Preserving Commodity Specification C8.
- Desired service life: 50 years.
- Moisture content at time of erection: As clause 450.

**270 UNGRADED SOFTWOODFOR INTERNAL NONSTRUCTURAL USE**

- Quality of timber: Free from decay, insect attack (except pinhole borers) and with no knots wider than half the width of the section.

- Surface finish: Sawn.  
Treatment: None required.
- 275 WOOD TRIMFOR EAVES FASCIA, BARGEBOARDS ETC
- Species: Contractor's choice.
  - Standard: To BS 1186-3.
    - Class: 1.
  - Treatment: Organic solvent impregnation to NBS section Z12 and Wood protection Association Commodity Specification C5, Service life: 40 years.
  - Fixing: Two 50 mm lost head nails to each support.  
Other requirements: Undercut bottom edge of boards to form drip.
- WORKMANSHIP GENERALLY**
- 401 CROSS SECTION DIMENSIONS OF STRUCTURAL SOFTWOOD AND HARDWOOD
- Dimensions: Dimensions in this specification and shown on drawings are target sizes as defined in BS EN 336.
  - Tolerances: The tolerance indicators (T1) and (T2) specify the maximum permitted deviations from target sizes as stated in BS EN 336, clause 4.3:
    - Tolerance class 1 (T1) for sawn surfaces.
    - Tolerance class 2 (T2) for further processed surfaces.
- 402 CROSS SECTION DIMENSIONS OF NONSTRUCTURAL SOFTWOOD
- Dimensions: Dimensions in this specification and shown on drawings are finished sizes.
  - Maximum permitted deviations from finished sizes: As stated in BS EN 1313-1:
    - Clause 6 for sawn sections.
    - Clause NA.2 for further processed sections.
- 420 WARPING OF TIMBER
- Bow, spring, twist and cup: Not greater than the limits set down in BS 4978 or BS EN 14081-1 for softwood, or BS 5756 for hardwood.
- 430 SELECTION AND USE OF TIMBER
- Timber members damaged, crushed or split beyond the limits permitted by their grading: Do not use.
  - Notches and holes: Position in relation to knots or other defects such that the strength of members will not be reduced.  
Scarf joints, finger joints and splice plates: Do not use without approval.
- 440 PROCESSING TREATED TIMBER
- Cutting and machining: Carry out as much as possible before treatment.
  - Extensively processed timber: Retreat timber sawn lengthways, thickened, planed, ploughed, etc.
  - Surfaces exposed by minor cutting/ drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.
- 450 MOISTURE CONTENT
- Moisture content of wood and wood based products at time of installation: Not more than:
    - Covered in generally unheated spaces: 24%.
    - Covered in generally heated spaces: 20%.
- 510 PROTECTION
- Generally: Keep timber dry and do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing.
  - Timber and components: Store under cover, clear of the ground and with good ventilation. Support on regularly spaced, level bearers on a dry, firm base. Open pile to ensure free movement of air through the stack.  
Trussed rafters: Keep vertical during handling and storage.

- 520 EXPOSED END GRAIN
- Components: Seal exposed end grain of the following before delivery to site:  
Sealer: Clear end grain sealer.
- 530 PAINTED FINISHES
- Structural timber to be painted: Primed as specified before delivery to site.
- 540 CLEAR FINISHES
- Structural timber to be clear finished: Keep clean and apply first coat of specified finish before delivery to site.
- 550 EXPOSED TIMBER
- Planed structural timber exposed to view in completed work: Prevent damage to and marking of surfaces and arrises.

#### JOINTING TIMBER

- 570 JOINTING/FIXING GENERALLY
- Generally: Where not specified precisely, select methods of jointing and fixing and types, sizes and spacings of fasteners in compliance with section Z20.
- 615 BOLT/ SCREW ASSEMBLIES FOR SOFTWOOD CONNECTIONS
- Designation: Black bolts to BS 4190, grade 4.6.
  - Size: M12 or as noted on drawings.
  - Coating applied by manufacturer: Sherardized.
  - Nuts and washers: Material grade and finish to suit bolts.
  - Washer dimensions: Diameter/ side length of washers in contact with timber faces to be minimum 3 times bolt diameter, with a thickness not less than 0.25 times bolt diameter.
- 630 BOLTED JOINTS
- Bolt spacings (minimum): To BS 5268-2, table 81.
  - Holes for bolts: Located accurately and drilled to diameters as close as practical to the nominal bolt diameter and not more than 2 mm larger.
  - Washers: Placed under bolt heads and nuts that would otherwise bear directly on timber. Use spring washers in locations which will be hidden or inaccessible in the completed building.
  - Bolt tightening: So that washers just bite the surface of the timber. Ensure that at least one complete thread protrudes from the nut.  
Checking: At agreed regular intervals up to Completion. Tighten as necessary.
- 660 PURPOSE MADE ANGLE CLEATS.
- Drawing references: Various.
  - Material: Steel grade S275.
  - Finish: Primed and painted black, visual quality.  
Quality of materials and workmanship: As section Z11.
- 670 ANTICORROSION FINISHES FOR FASTENERS
- Galvanizing: To BS 7371-6, with internal threads tapped and lightly oiled following treatment.
  - Sherardizing: To BS 7371-8, Class 1.  
Zinc plating: To BS EN ISO 4042 and passivated.

#### ERECTION AND INSTALLATION

- 740 PRE-ERECTION CHECKING
- Timing: Not less than 10 days before proposed erection start date.
  - Checklist:
    - Foundations and other structures to which timber structure will be attached: Check for accuracy of setting out.

- Holding down bolts: Check for position, protruding length, condition and slackness.
  - Inaccuracies and defects: Report without delay.
    - Erection: Obtain permission to commence.
- 750    MODIFICATIONS/REPAIRS
- Defects due to detailing or fabrication errors: Report without delay.
  - Methods of rectification: Obtain approval of proposals before starting modification or remedial work.
  - Defective/damaged components: Timber members/ components may be rejected if the nature and/or number of defects would result in an excessive amount of site repair.
- 760    TEMPORARY BRACING
- Provision: As necessary to maintain structural timber components in position and to ensure complete stability during construction.
- 770    ADDITIONAL SUPPORTS
- Provision: Position and fix additional studs, noggings and/ or battens to support edges of sheets materials, and wall/ floor/ ceiling mounted appliances, fixtures, etc. shown on drawings
  - Material properties: Additional studs, noggings and battens to be of adequate size and have the same treatment, if any, as adjacent timber supports.
- 775    BEARINGS
- Timber surfaces which are to transmit loads: Finished to ensure close contact over the whole of the designed bearing area.
  - Packings: Where provided, to cover the whole of the designed bearing area.
    - Crushing strength: Not less than timber being supported.
    - In external locations: Rot and corrosion proof.
- 780    WALL PLATES
- Position and alignment: To give the correct span and level for trusses, joists, etc.
  - Bedding: Fully in fresh mortar.
  - Joints: At corners and elsewhere where joints are unavoidable use nailed half lap joints. Do not use short lengths of timber.
- 784    JOISTS GENERALLY
- Centres: Equal, and not exceeding designed spacing.
  - Bowed joists: Installed with positive camber.
    - End joists: Positioned approximately 50 mm from masonry walls.
- 795    TRIMMING OPENINGS
- Trimmers and trimming joists: When not specified otherwise, not less than 25 mm wider than general joists.
- 840    STRUTTING TO FLOOR JOISTS
- Type: One of the following:
    - Herringbone strutting: At least 38 x 38 mm softwood.
    - Solid strutting: At least 38 mm thick softwood and at least three quarters of joist depth.
    - Proprietary metal strutting: contractor's choice.
  - Fixing: Between joists as follows:
    - Joist spans of 2.5 to 4.5 m: One row at centre span.
    - Joist spans over 4.5 m: Two rows equally spaced.
    - Strutting must not project beyond top and bottom edges of joists.
  - Outer joists: Blocked solidly to perimeter walls.
- 850    INSPECTION GENERALLY
- Structural timber-work: Give reasonable notice before covering up.
- 860    BOLTED JOINTS INSPECTION
- Timing: Inspect all accessible bolts at the end of the Defects Liability Period and tighten if

necessary.

910 EAVES SOFFIT VENTILATION

- Soffit boards: Fixed to leave a continuous ventilation opening not less than 10 mm wide for full length of eaves.  
Insect mesh: A 3-4 mm mesh screen fixed across the opening to prevent large insect

**H62 NATURAL SLATING**

To be read with Preliminaries/General conditions.

**TYPE(S) OF SLATING**

- 110 ROOF SLATING FOR LOWER SECTION OF LEAN TO
- Base: existing rafters  
Pitch: varies
  - Underlay: recycled content none permitted, direction parallel to eaves. Head lap (minimum) manufacturers requirements  
Lay as clause 240, directly over
  - Battens: As clause 245, size 50 x 25 mm.  
Fixing: As clause 265, using 3.35mm diameter nails 15mm penetration into battens
  - Slates: To BS 680:Part 2.  
Supplier and reference: Contractor to Source. Contract Administrator to approve.  
Type: new welsh slate  
Size: to match existing  
Fixing: As clause 275.  
Minimum headlap: in accordance with manufacturers requirements
  - Other requirements: sample to be approved by L.A Conservation Officer prior to procurement.

**SLATING GENERALLY**

- 210 BASIC WORKMANSHIP: Keep slates clean and dry until laid. Set out to give true lines and regular appearance, fitting neatly at all edges, junctions and features. Fix slate roofing to make the whole sound and weathertight at the earliest opportunity. Repair any defects as quickly as practicable to minimise damage and nuisance. Keep gutters and pipes free of debris and clean out at completion.
- 220 EXISTING NATURAL SLATING: Carefully remove slates, battens, underlay, etc., the minimum necessary to carry out alterations, ensuring minimum disturbance of adjacent slates.
- 225 SUITABILITY OF STRUCTURE/BASE: Before commencement of slating, survey supporting structure/ base, checking line, level and fixing points. Report immediately to the CA if the structure/base is unsuitable to receive slating.
- 230 FIBRE INSULATION ON STRUCTURAL METAL LINER TRAYS:
- Manufacturer and reference:  
Thickness: mm.
  - Fix securely with closely butted joints, leaving no gaps. Use fasteners where necessary to prevent slumping.
  - Ensure that insulation does not obstruct any roof ventilation.
- 240 UNDERLAY:
- Handle carefully to prevent tears and punctures, repair any which do occur with adhesive tape and cover with underlay patch tucked under the horizontal lap above.
  - Lay parallel to eaves, maintaining consistent tautness to minimise gaps.
  - Vertical laps must be not less than 100 mm wide, coinciding with supports. Fix with galvanized steel, copper or aluminium extra large head felt nails.
  - Where pipes and other components penetrate the underlay, use proprietary underlay seals or cut accurately and turn flanges up to give a tight, watershedding fit.
  - Ensure that underlay does not obstruct roof ventilation.
- 245 BATTENS/COUNTERBATTENS:
- Sawn softwood, species type A or B to BS 5534:Part 1, clause 2.12.1.  
Permissible characteristics and defects must not exceed the limits given in BS 5534:Part 1, annex E.

- Moisture content: Not more than 22% at time of fixing.
  - Preservative treatment: CCA vacuum pressure or organic solvent double vacuum as section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C8.
- 255 COUNTERBATTENS ON RIGID SARKING:
- Fix at centres coinciding with rafters/trusses marking positions of latter at top edges and eaves before laying underlay.
  - Fix through rigid sarking into rafters/trusses at not more than 300 mm centres.
- 257 COUNTERBATTENS ON STRUCTURAL METAL LINER TRAYS: Fix to each tray upstand at not more than 600 mm centres.
- 265 BATTEN FIXING:
- In straight horizontal lines, aligned on adjacent areas, with no batten less than 1200 mm long.
  - Joints to be square cut, butted centrally on supports and must not occur more than once in any group of four battens on any one support.
  - Provide an additional batten where an unsupported lap in the underlay occurs between battens.
  - Fix each batten to each support, with splay fixings at joints.
- 270 BATTENS FIXED TO MASONRY:
- To be in straight horizontal lines with no batten less than 3 m long.
  - Fix at not more than 400 mm centres.
- 272 TIMBER FOR SLATING BASE WORK:
- Sawn softwood, free from wane, pitch pockets, decay and insect attack (except pinhole borers).
  - Moisture content: Not more than 22% at time of covering.
  - Preservative treatment: CCA vacuum pressure or organic solvent double vacuum as section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C8.
- 275 SLATE FIXING:
- Lay with an even overall appearance, with slightly open butt joints and tails of slates aligned.
  - Use slates of consistent thickness in any one coarse laid with thicker end as tail.
  - Use extra wide slates generally at ends of coarses to maintain bond and ensure that cut slates are as large as possible. Do not use slates or cut slates less than 150 mm wide.
  - Centre fix each slate through countersunk holes 20-25 mm from side edges, with two copper nails to BS 1202: Part 2, of 3.35 mm shank diameter and length to provide adequate withdrawal resistance and not less than 15 mm penetration into batten.
- 290 MORTAR BEDDING/POINTING:
- Mortar: As section Z21, 1:3 cement:sand, with plasticizing admixtures permitted. Bond strength to provide resistance to uplift must be to BS 5534:Part 1.
  - Do not use in wet or frosty weather or when imminent.
  - Concrete and clay tile accessories to be bedded must be wetted and surface water allowed to drain before fixing.
  - Finish neatly as work proceeds and remove any residue.
- ROOF SLATING EDGES/JUNCTIONS/FEATURES**
- 305 GENERALLY:
- Form details using the specified fittings and accessories; do not improvise without approval.
  - Cut slates only where necessary, with an appropriate tool, to give neat, close fitting joints and straight, clean edges.
  - Fix edge slates and fittings securely to neat, true lines.
  - Ensure that all flashings (specified in another section) are fixed with or immediately after the

slating, and are neatly dressed down.

**325 FIRE SEPARATING WALLS:**

- Ensure that separating wall is cut on the rake 25 mm to 50 mm below top of adjacent rafters.
- Fill space over the top of the wall with mineral fibre quilt so that, when overlaid, it is lightly compressed. Tuck edges of quilt between edges of wall and adjoining rafters.
- Lay 300 mm wide pads of mineral fibre quilt thick enough to seal all gaps and cut to fit snugly between battens. Fix in position with continuous self-adhesive tape from ridge to eaves before slating.
- At boxed eaves completely seal air paths in the plane of the separating wall with wire reinforced mineral fibre, 50 mm thick, nailed to rafter and carefully cut to shape.

**345 VENTILATED EAVES:**

- Eaves fascia grilles/ventilator trays to support underlay:  
Lay mineral fibre insulation over wallplate. Fix grilles/trays between each support to form drip into gutter and to provide free passage of air over insulation.
- Fix slates with tails projecting 50 mm over gutter or to centre line of gutter, whichever dimension is the lesser.

**355 VENTILATED EAVES:**

- Fascia grilles:
- Ventilator trays:  
Lay mineral fibre insulation over wallplate. Fix trays between each support to provide free passage of air over insulation.
- Continuous support for underlay at eaves to prevent water retaining troughs:
- Fix a strip of BS 747, type 5U felt, or comparable durable underlay, to underlap first full course of underlay.
- Dress underlay or underlay carrier down into gutter.
- Fix slates with tails projecting 50 mm over gutter or to centre line or gutter, whichever dimension is the lesser.

**365 EAVES:**

- Ensure that thermal insulation is laid continuous out to eaves.
- Continuous support for underlay at eaves to prevent water retaining troughs:
- Fix a strip of BS 747, type 5U felt, or comparable durable underlay, to underlap first full course of underlay.
- Dress underlay or underlay carrier down into gutter.
- Fix slates with tails projecting 50 mm over gutter or to centre line of gutter, whichever dimension is the lesser.

**445 MORTAR BEDDED VERGE WITH BEDDED UNDERCLOAK:**

- Carry underlay 50 mm onto outer leaf of gable wall and bed in mortar.
- Bed undercloak of slates sloping away from and projecting \_\_\_\_\_ mm beyond face of wall on mortar identical to that used in gable walling. Undercloak to be level with underside of slating battens.
- Carry slating battens over undercloak and finish 100 mm from verge edge.
- Bed edge of verge slates flush with undercloak on 75 mm wide bed of mortar as clause 290, ensuring that mortar is not displaced or cracked by mechanical fixing of slates.

**455 MORTAR BEDDED VERGE WITH NAILED UNDERCLOAK:**

- Carry underlay over full width of verge.
- Nail undercloak of slates on top of underlay sloping away from roof and projecting \_\_\_\_\_ mm beyond face of \_\_\_\_\_
- Carry slating battens over undercloak and finish 100 mm from verge edge.
- Bed edge of verge slates flush with undercloak on 75 mm wide bed of mortar as clause 290, ensuring that mortar is not displaced or cracked by mechanical fixing of slates.

**525 MITRED HIP:**

- Lay courses of underlay over hip with overlaps of not less than 150 mm.



- Lay general underlay and slating battens into valley.
  - Valley boarding: Timber as clause 272. Fix 25 mm thick, not less than 250 mm wide board central to valley, with 100 mm wide feather edge boards butted to each side.
  - Cover valley boarding with a strip of underlay, not less than 600 mm wide, overlapping general underlay.
  - Form intersections of slate courses by laying square slates on centre of valley boarding. Sweep courses neatly upwards to meet the square slates at right angles, maintaining the specified laps. Fix to battens or direct to valley boarding.
- 650 SWEPT VALLEY:
- Lay general underlay and slating battens into valley.
  - Valley boarding: Timber as clause 272. Fix 25 mm thick, not less than 250 mm wide board central to valley, with 100 mm wide feather edge boards butted to each side.
  - Cover valley boarding with a strip of underlay, not less than 600 mm wide, overlapping general underlay.
  - Cut slates to an even taper to give a smooth sweep through the valley. Cut down extra wide and/or extra long slates as necessary to maintain bond and specified laps. Fix to battens or direct to valley boarding.
- 660 SIDE ABUTMENT:
- Turn underlay not less than 100 mm up abutment.
  - Cut slates as necessary and interleave with metal soakers (specified in another section). Fix soakers by turning down over the head of each slate.
  - Fix slates close to abutment to enable a weathertight junction to be formed by metal step flashing (specified in another section).
- 670 TOP EDGE ABUTMENT:
- Turn underlay not less than 100 mm up abutment.
  - Finish slating with head-nailed short course to maintain headlap.
  - Fix slates close to abutment to enable a weathertight junction to be formed by metal apron flashing (specified in another section).
- 675 TOP EDGE VENTILATED ABUTMENT:
- Ensure that an air gap is provided at abutment as recommended by ventilator manufacturer.
  - Finish slating with head-nailed short course to maintain headlap.
  - Abutment ventilator:
  - Fix ventilator to enable a weathertight junction to be formed by metal cover flashing (specified in another section).
- 690 ROOF WINDOW:
- Turn underlay not less than 100 mm up against window surround and cover with integral flashing/soakers all round to form a weathertight junction.
  - Cut slates as necessary and fix closely all round.
- 700 DRY VENTILATED TILE RIDGE:
- Lay top courses of underlay to provide an air gap at apex as recommended by ridge tile manufacturer.
  - Dry ridge fixing batten(s):
  - Finish slating with head-nailed short course to maintain headlap and provide an air gap.
  - Dry ridge tiles:
  - Ridge terminals:
- 730 LEAD ROLL RIDGE:
- Lay top course of underlay from one side of ridge over apex to overlap top course of underlay at other side by not less than 150 mm.
  - Ensure that rounded timber roll (specified in section H71) is fixed to ridge board or ridge tree batten.
  - Finish slating with head-nailed short course to maintain headlap.
  - Fix slates close to the roll to enable a weathertight junction to be formed by lead flashing

(specified in section H71).

**740 MORTAR BEDDED TILE RIDGE:**

- Lay top course of underlay from one side of ridge over apex to overlap top course of underlay at other side by not less than 150 mm.
- Finish slating with head-nailed short course to maintain headlap.
- Ridge tiles:  
Make weathertight with edges continuously bedded and joints solidly bedded in mortar as clause 290.
- Where rigid masonry walls support or abut ridge, all ridge tiles within 900 mm of such walls must be mechanically secured. Fix to supplementary ridge tile fixing batten with nails/wire ties or screws recommended by tile manufacturer.
- Ridge terminals:  
Fill ends of ridges at gables with mortar and slips of tile finished flush.

**750 MORTAR BEDDED AND MECHANICALLY FIXED TILE RIDGE:**

- Lay top course of underlay from one side of ridge over apex to overlap top course of underlay at other side by not less than 150 mm.
- Ridge tile fixing batten:  
Finish slating with head-nailed short course to maintain headlap.
- Ridge tiles:  
Make weathertight with edges continuously bedded and joints solidly bedded in mortar as clause 290. Fix to ridge tile fixing batten with nails/wire ties or screws as recommended by ridge tile manufacturer
- Ridge terminals:  
Fill ends of ridges at gables with mortar and slips of tile finished flush.

**770 DRY VENTILATED TILE MONO-RIDGE:**

- Lay top course of underlay to provide an air gap at apex as recommended mono-ridge tile manufacturer.
- Finish slating with a head-nailed short course to maintain headlap.
- Dry mono-ridge tiles:

**780 MORTAR BEDDED TILE MONO-RIDGE:**

- Carry underlay over apex not less than 150 mm.
- Finish slating with a head-nailed short course to maintain headlap.
- Mono-ridge tiles:  
Make weathertight with sloping edge continuously bedded and joints solidly bedded in mortar as clause 290. Fix vertical face to ridge fixing batten with screws/nails as recommended by ridge tile manufacturer.
- Fill ends of ridges at gables with mortar finished flush.

**800 CHANGE OF ROOF PITCH:**

- Fix timber tilting fillet to support flashing and courses of slates above change of pitch.
- Finish slating with head-nailed short course below change of pitch, and eaves courses above change of pitch.
- Fix courses of slates above and below change of pitch to form a weathertight junction in combination with metal flashing (specified in another section).

**810 JUNCTIONS:** Cut slates and fix closely to enable a weathertight junction to be formed by metal flashing (specified in another section) between:**841 ROOF SLOPE VENTILATORS**

- Ventilator slates:  
Position in place of standard slates, without cutting, in each rafter space. Fix with underlay seal (if any), to ventilate above insulation between rafters, with spigot (if any) clear of insulation, as follows:

## 850 ROOF SLOPE TERMINALS:

- Ventilator slates:
- Position in place of standard slates, without cutting. Fix with underlay seal (if any) and connect to

## 860 SNOWGUARDS:

- Fix suitable stainless steel brackets to rafters with stainless steel screws on a line 100-150 mm above the roof edge to receive 150 mm timber snowboard (specified in section G20) with 50 mm clearance over surface of roof.
- Cut slates as necessary, fit metal flashing (specified in another section) and dress over roof finish.

## 870 SUNDRY ACCESSORIES:

**VERTICAL SLATING EDGES/JUNCTIONS**

## 910 BOTTOM EDGE:

- Fix timber fillet to base to tilt eaves course slates into correct vertical plane.
- Dress underlay over fillet.
- Dress metal flashing (specified in another section) over fillet, underlapping underlay and secure behind the bottom slating batten.
- Fix slates with tails neatly aligned.

## 920 TOP EDGE:

- Finish slating with a head-nailed short course under abutment to maintain headlap.
- Secure metal flashing (specified in another section) under abutment and dress down over top course of slates not less than 150 mm.

## 930 SIDE ABUTMENT:

- Chase abutment wall and insert metal stepped flashing (specified in another section). Return flashing not less than 75 mm behind slating, overlapping underlay and battens, and turn back to form a vertical welt.
- Cut slates (never less than 150 mm wide) and fix neatly to abutment.

950 ANGLE WITH SOAKERS: Cut slates (never less than 150 mm wide), interleave with metal soakers (specified in another section) and fix to form a straight, weathertight, close mitred junction. Fix soakers by nailing to battens at top edge.

## 960 JUNCTION WITH ROOF VERGE:

- Fix additional slating batten parallel to and below verge.
- Splay cut extra wide slates at ends of courses to angle of verge rake. Fix to batten with cut edge parallel to and below verge.
- Cut adjacent slates to fit neatly.

**H65 SINGLE LAP ROOF TILING**

To be read with Preliminaries/General conditions.

**TYPE(S) OF TILING**

- 110 CLAY ROOF PLAIN TILES FOR MAIN ROOF AND CENTRAL SECTION OF LEAN-TO
- Base: existing rafters  
Pitch: varies
  - Underlay: recycled content none permitted, direction parallel to eaves, Head Lap (minimum) manufacturers requirements.
  - Battens: As clause 245, size 50x25mm.  
Fixing: As clause 265, using 65x3.5mm stainless steel annular ring shank nails
  - Tiles: to BSEN 1304, interlocking  
Manufacturer and reference: Contractor to source to match existing  
Type: plain tiles  
Colour: to match existing  
Size: to match existing  
Minimum headlap: in accordance with manufacturers requirements  
Fixing of general areas: in accordance with manufacturers requirements  
Fixing of local areas: In accordance with manufacturers requirements.
  - Other requirements: sample to be approved by L.A Conservation Officer prior to procurement

**TILING GENERALLY**

- 200 EQUIVALENT PRODUCTS: Where the specification permits use of an equivalent roof tile of different manufacture to that specified, Preliminaries clause A31/200 applies. Any proposal for use of an alternative type of tile must also include fixing calculations, proposals for substitution of compatible accessory products and variation of details as necessary, with evidence of equivalent durability, fitness for purpose and appearance of the roof as a whole. If such substitution is approved, and before ordering products, provide revised drawings, specification and manufacturer's guarantees as required by CA.
- 210 BASIC WORKMANSHIP: Set out to give true lines and regular appearance, fitting neatly at all edges, junctions and features. Fix tile roofing to make the whole sound and weathertight at the earliest opportunity. Repair any defects as quickly as practicable to minimise damage and nuisance. Keep gutters and pipes free of debris and clean out at completion.
- 240 UNDERLAY:
- Handle carefully to prevent tears and punctures, repair any which do occur with adhesive tape and cover with underlay patch tucked under the horizontal lap above.
  - Lay parallel to eaves, maintaining consistent tautness to minimise gaps.
  - Vertical laps must be not less than 100 mm wide, coinciding with supports. Fix with galvanized steel, copper or aluminium extra large head felt nails.
  - Where pipes and other components penetrate the underlay, use proprietary underlay seals or cut accurately and turn flanges up to give a tight, watershedding fit.
  - Ensure that underlay does not obstruct roof ventilation.
- 245 BATTENS/COUNTERBATTENS:
- Sawn softwood, species type A or B to BS 5534:Part 1, clause 2.12.1.  
Permissible characteristics and defects must not exceed the limits given in BS 5534:Part 1, annex E.  
Moisture content: Not more than 22% at time of fixing.
  - Preservative treatment: CCA vacuum pressure or organic solvent double vacuum as section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C8.
- 265 BATTEN FIXING:
- In straight horizontal lines, aligned on adjacent areas, with no batten less than 1200 mm

- long.
  - Joints to be square cut, butted centrally on supports and must not occur more than once in any group of four battens on any one support.
  - Provide an additional batten where an unsupported lap in the underlay occurs between battens.
  - Fix each batten to each support, with splay fixings at joints.
- 275 TILE FIXING:
- Lay each course with tails aligned.
  - Use special tiles as necessary at ends of courses to maintain bond and ensure that cut tiles are as large as possible.
  - Fix tiles as specified in the 'Type(s) of Tiling clause(s)'. In all cases fix perimeter tiles; these are tiles in the eaves and top courses, at verges, adjacent to hips, valleys and abutments, and around obstructions such as dormers, rooflights and chimneys.
  - Nail tiles where specified through every hole, using tile manufacturer's recommended nails or, if none, aluminium nails to BS 1202:Part 3, size as recommended by tile manufacturer.
  - Clip tiles where specified using clips and clip nails as recommended by tile manufacturer.
- 280 LOCAL AND GENERAL FIXING AREAS, as referred to in the Type(s) of Tiling clause(s), are defined as follows:
- Local areas: The bands of tiling around all edges or obstructions of each plane of the roof. The dimension of each such band is to be calculated in accordance with BS 5534:Part 1, Section 3.
  - General areas: The remaining areas of roof tiling.
- 290 MORTAR BEDDING/POINTING:
- Mortar: As section Z21, 1:3 cement:sand, with plasticizing admixtures permitted. Bond strength providing resistance to uplift must be to BS 5534:Part 1.
  - Do not use in wet or frosty weather or when imminent.
  - Tiles to be bedded must be wetted and surface water allowed to drain before fixing.
  - Finish neatly as work proceeds and remove any residue.
- EDGES/JUNCTIONS/FEATURES**
- 305 GENERALLY:
- Form details using the specified and manufacturer's recommended fittings and accessories; do not improvise without approval.
  - Exposed fittings and accessories must match tile colour and finish unless specified otherwise.
  - Cut tiles only where necessary, with an appropriate tool, to give straight, clean edges.
  - Fix edge tiles and fittings securely to neat, true lines.
  - Ensure that all flashings (specified in another section) are fixed with or immediately after the tiling, and are neatly dressed down.
- 325 FIRE SEPARATING WALLS:
- Ensure that separating wall is cut on the rake 25 mm to 50 mm below top of adjacent rafters.
  - Fill space over top of wall with mineral fibre quilt so that, when overlaid, it is lightly compressed. Tuck edges of quilt between edges of wall and adjoining rafters.
  - Lay 300 mm wide pads of mineral fibre quilt thick enough to seal all gaps and cut to fit snugly between battens. Fix in position with continuous self-adhesive tape from ridge to eaves before tiling.
  - At boxed eaves completely seal air paths in the plane of the separating wall with wire reinforced mineral fibre, 50 mm thick, nailed to rafter and carefully cut to shape.
- 355 VENTILATED EAVES:
- Fascia grilles: [ ]
  - Ventilator trays: [ ]
- Lay mineral fibre insulation over wallplate. Fix trays between each support to provide free passage of air over insulation.

- Continuous support for underlay at eaves to prevent water retaining troughs:
  - Fix a strip of BS 747, type 5U felt, or comparable durable underlay, to underlap first full course of underlay.
  - Dress underlay or underlay carrier down into gutter.
  - Fix eaves fillers to suit profiled tiles.
  - Fix eaves tiles with clips recommended by tile manufacturer with tails projecting 50 mm over gutter or to centre of gutter, whichever dimension is the lesser.
- 365 EAVES:
- Ensure that thermal insulation is laid continuous out to eaves.
  - Continuous support for underlay at eaves to prevent water retaining troughs
  - Fix a strip of BS 747, type 5U felt, or comparable durable underlay, to underlap first full course of underlay.
  - Dress underlay or underlay carrier down into gutter.
  - Fix eaves fillers to suit profiled tiles.
  - Fix eaves tiles with clips recommended by tile manufacturer with tails projecting 50 mm over gutter or to centre of gutter, whichever dimension is the lesser.
- 660 SIDE ABUTMENT:
- Turn underlay not less than 100 mm up abutment.
  - Fix tiles close to abutment to enable a weathertight junction to be formed by metal step flashing (specified in another section).
- 670 TOP EDGE ABUTMENT:
- Turn underlay not less than 100 mm up abutment.
  - Fix tiles close to abutment to enable a weathertight junction to be formed by metal apron flashing (specified in another section).
- 690 ROOF WINDOW:
- Turn underlay not less than 100 mm up against window surround and cover with integral flashing all round to form a weathertight junction.
  - Fix tiles closely all round.
- 760 SMALL SCALE MORTAR BEDDED RIDGE:
- Lay top course of underlay from one side of ridge over apex overlapping top course of underlay at other side by not less than 150 mm.
  - Fix tiles closely at apex.
  - Ridge tiles: to match existing and compatible with pantiles  
Make weathertight with edges continuously bedded and joints solidly bedded in mortar as clause 290.
  - Where rigid masonry walls support or abut ridge, all ridge tiles within 900 mm of such walls must be mechanically secured. Fix to supplementary ridge tile fixing batten with nails/wire ties or screws recommended by tile manufacturer.
  - Fill ends of ridges at gables with mortar and slips of tile finished flush.
  - Bed tile slips of constant size in each roof tile pan to form dentil course projecting a consistent approved dimension..
- 800 CHANGE OF ROOF PITCH:
- Fix timber tilting fillet to support flashing and course of tiles above change of pitch.
  - Fix courses of tiles above and below change of pitch to form a weathertight junction in combination with metal flashing (specified in another section).
- 810 JUNCTIONS: Cut tiles and fix closely to enable a weathertight junction to be formed by metal flashing (specified in another section) between: [\_\_\_\_\_]

**K10 PLASTERBOARD DRY LININGS/ PARTITIONS/ CEILINGS****TYPES OF DRY LINING****205 LINING ON TIMBER WALLS AND PARTITIONS**

- Background: Studs at 450 mm centres.
  - Metal resilient (acoustic) bars: Not required.
  - Linings: 12.5 mm Acoustic plasterboard
    - Fixing: Contractor's choice.
  - Finishing: Skim coat plaster.
    - Primer/ Sealer: Primer to painted areas.
    - Accessories: Metal beads/ stops recommended by board manufacturer .
- Other requirements: Fire stopping around service penetrations as section P12.

**245 CEILING LINING ON TIMBER**

- Background: Joists at 450 mm centres.
  - Metal resilient (acoustic) bars: Not required.
  - Linings: 12.5 mm plasterboard.
    - Fixings: Contractor's choice.
  - Finishing: Skim coat plaster.
    - Primer/ Sealer: Primer to painted areas.
    - Accessories: Metal beads/ stops recommended by board manufacturer .
- Other requirements: Fire stopping around service penetrations as section P12.

**GENERAL/ PREPARATION****335 ADDITIONAL SUPPORTS**

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

**COMPONENTS****401 GYPSUM PLASTERBOARD**

- Type: To BS 1230-1, type 1.
    - Core density (minimum): 650 kg/m<sup>3</sup>.
- Exposed surface and edge profiles: Suitable to receive specified finish.

**402 GYPSUM PLASTERBOARD (VAPOUR CONTROL)**

- Type: To BS 1230-1, type 1.
    - Core density (minimum): 650 kg/m<sup>3</sup>.
    - Moisture vapour resistance of backing layer (minimum): 60 MNs/g.
- Exposed surface and edge profiles: Suitable to receive specified finish.

**403 GYPSUM PLASTERBOARD (MOISTURE RESISTANT)**

- Type: To BS 1230-1, type 3 and 4.
    - Core density (minimum): 710 kg/m<sup>3</sup>.
    - Core: Moisture resistant.
    - Paper facings: Moisture resistant.
- Exposed surface and edge profiles: Suitable to receive specified finish.

**404 GYPSUM PLASTERBOARD (IMPROVED FIRE PROTECTION)**

- Type: To BS 1230-1, type 5.
  - Core density (minimum): 800 kg/m<sup>3</sup>.
  - Core: Including fibres for improved cohesion.

Exposed surface and edge profiles: Suitable to receive specified finish.

406 GYPSUM PLASTERBOARD (IMPROVED FIRE PROTECTION AND MOISTURE RESISTANT)

- Type: To BS 1230-1, type 3 and 5.
  - Core density (minimum): 800 kg/m<sup>3</sup>.
  - Core: Moisture resistant and including fibres for improved cohesion.
  - Paper facings: Moisture resistant.

Exposed surface and edge profiles: Suitable to receive specified finish.

407 GYPSUM PLASTERBOARD (IMPROVED FIRE PROTECTION AND VAPOUR CONTROL)

- Type: To BS 1230-1, type 5.
  - Core density (minimum): 800 kg/m<sup>3</sup>.
  - Moisture vapour resistance of backing layer (minimum): 60 MNs/g.

Exposed surface and edge profiles: Suitable to receive specified finish.

408 GYPSUM PLASTERBOARD (IMPACT RESISTANT)

- Type: To BS 1230-1, type 5.
  - Core density (minimum): 900 kg/m<sup>3</sup>.
  - Paper facings: Heavy duty.

Exposed surface and edge profiles: Suitable to receive specified finish.

### INSTALLATION

435 DRY LININGS GENERALLY

- General: Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
- Cutting plasterboards: Neatly and accurately without damaging core or tearing paper facing.
  - Cut edges: Minimize and position at internal angles wherever possible. Mask with bound edges of adjacent boards at external corners.
- Fixings boards: Securely and firmly to suitably prepared and accurately levelled backgrounds.
- Finishing: Neatly to give flush, smooth, flat surfaces free from bowing and abrupt changes of level.

445 CEILINGS

- Sequence: Fix boards to ceilings before installing dry lined walls and partitions.
- Orientation of boards: Fix with bound edges at right angles to supports and with ends staggered in adjacent rows.
  - Two layer boarding: Stagger joints between layers.

465 STAGGERED STUD PARTITIONS

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

510 SEALING GAPS AND AIR PATHS

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

fill

with jointing compound.

560 JOINTS BETWEEN BOARDS

- Tapered edged plasterboards:
  - Bound edges: Lightly butted.
  - Cut/ unbound edges: 3 mm gap.

- Square edged plasterboards: 3 mm gap.  
Square edged fibre reinforced gypsum boards: 5 mm gap.
- 565 VERTICAL JOINTS
- Joints: Centre on studs.
    - Partitions: Stagger joints on opposite sides of studs.
    - Two layer boarding: Stagger joints between layers.
- 570 HORIZONTAL JOINTS
- Surfaces exposed to view: Horizontal joints not permitted. Seek instructions where height of partition/ lining exceeds maximum available length of board.
  - Two layer boarding: Stagger joints between layers by at least 600 mm.
  - Edges of boards: Support using additional framing.
    - Two layer boarding: Support edges of outer layer.
- 610 FIXING PLASTERBOARD TO TIMBER
- Fixing to timber: Securely at the following centres (maximum):
    - Nails: 150 mm.
    - Screws to partitions/ wall linings: 300 mm. Reduce to 200 mm at external angles.
    - Screws to ceilings: 230 mm.
  - Position of nails/ screws from edges of boards (minimum):
    - Bound edges: 10 mm.
    - Cut/ unbound edges: 13 mm.
  - Position of nails/ screws from edges of timber supports (minimum): 6 mm.
- FINISHING**
- 650 LEVEL OF DRY LINING ACROSS JOINTS
- Sudden irregularities: Not permitted.
  - Joint deviations: Measure from faces of adjacent boards using methods and straightedges (450 mm long with feet/ pads) to BS 8212, clause 3.3.5.
    - Tapered edge joints:
      - Permissible deviation (maximum) across joints when measured with feet resting on boards: 3 mm.
    - External angles:
      - Permissible deviation (maximum) for both faces: 4 mm.
    - Internal angles:
      - Permissible deviation (maximum) for both faces: 5 mm.
- 680 SKIM COAT PLASTER FINISH
- Plaster type As recommended by board manufacturer..
    - Thickness: 2-3 mm.
  - Joints: Fill and tape except where coincident with metal beads.
  - Finish: Tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks.
- 692 RIGID BEADS/STOPS
- Internal: To BS EN 13658-1.  
External: To BS EN 13658-2.
- 695 INSTALLING BEADS/ STOPS
- Cutting: Neatly using mitres at return angles.
  - Fixing: Securely using longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with substrate.
  - Finishing: After joint compounds/ plasters have been applied, remove surplus material while still wet from surfaces of beads exposed to view.
- 725 REPAIRS TO EXISTING PLASTERBOARD
- Filling small areas with broken cores: Cut away paper facing, remove loose core material and fill with jointing compound.

- Finish: Flush, smooth surface suitable for redecoration.
- Large patch repairs: Cut out damaged area and form neat hole with rectangular sides. Replace with matching plasterboard.
  - Fixing: Use methods to suit type of dry lining, ensuring full support to all edges of existing and new plasterboard.
  - Finishing: Fill joints, tape and apply jointing compound to give a flush, smooth surface suitable for redecoration.

**L40 GENERAL GLAZING****GENERAL REQUIREMENTS****111 PREGLAZING**

- Preglazing of components: Permitted.
- Prevention of displacement: Submit details of precautions to be taken to protect glazing and compound/ seals during delivery and installation.  
Defective/ displaced glazing/ compound/ seals: Reglaze components in situ.

**150 WORKMANSHIP GENERALLY**

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

**152 PREPARATION**

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

**155 GLASS GENERALLY**

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

**180 BEAD FIXING WITH PINS**

- Pin spacing: Regular at maximum 150 mm centres, and within 50 mm of each corner.  
Exposed pin heads: Punched just below wood surface.

**181 BEAD FIXING WITH SCREWS**

Screw spacing: Regular at maximum 225 mm centres, and within 75 mm of each corner.

**TYPES OF GLAZING****380 BEAD FIXED INSULATING GLASS UNITS**

- Pane material: Insulating glass units to BS EN 1279 and Kitemark certified overall thickness to manufacturer's recommendations .
  - Inner pane: Thickness to manufacturer's recommendations to comply with building regulations .
  - Outer pane: Thickness to manufacturer's recommendations to comply with building regulations .
  - Spacer: Thickness to manufacturer's recommendations anodized aluminium, colour: Black

- Perimeter taping: Do not use.
  - Surround/ bead: Hardwood .
    - Preparation: Clear primer .
    - Bead location: Outside .
    - Bead fixing: Manufacturer's recommendations .
  - Glazing system:
    - Inner sealant: Low permeability sealant .
    - Outer sealant: Moisture vapour permeable sealant .
  - Glazing installation:
    - Insulating unit: Located centrally in surround using setting and location blocks and distance pieces.
    - Inner sealant: Applied to full height of rebate.
    - Outer sealant: Applied to fill edge clearance void and space between unit and beads up to sight line.
    - Finished thickness of back and front bedding after inserting glazing (minimum): 3 mm.
    - Beads: Bedded on outer sealant and fixed securely.
- Excess sealant: Trimmed to a smooth chamfer.

**M20 LIME RENDER**

## 110 EXTERNAL RENDER TO EXISTING SURFACES

FIRST COAT  
10-20MM  
Well-keyed background  
Control suction  
Leaved key cure 4-7 days

1:2 NHL 3.5 sharp course sand 3.35mm down to 0.075

SECOND COAT  
12mm  
Control suction  
Straightening coat  
Leave keyed cure 7-10 days.

1:2.5 NHL 3.5 sharp course/sharp medium 3.35mm down to 0.075

FINISH COAT  
5-8MM  
Control suction finish as required  
Cure minimum 3-10 days

1:2.5 NHL 3.5 sharp medium sand  
2.36 down to 0.075

## 110 EXTERNAL RENDER TO CONCRETE BLOCKWORK

STIPPLE COAT  
5mm  
Used on poor suction, dense/smooth surfaces leave as cast.  
Cure 2-4 days

1:1.5 NHL 3.5 sharp gritty sand 5mm down to 0.075mm

FIRST COAT  
10-20mm  
Well-keyed background  
Control suction  
Leaved key cure 4-7 days

1:2 NHL sharp coarse sand down to 0.075mm

SECOND COAT  
8-12mm  
Control suction  
Straightening coat  
Leave keyed cure 7-10 days.

1:2.5 NHL 3.5 sharp coarse/sharp medium sand  
3.35mm down to 0.075/2.36mm down to 0.075

FINISH  
5mm  
Control suction finish as required  
Cure minimum 3-10 days

1:2.5 NHL 2 sharp fine sand 1.18mm down to 0.075

## 120 INTERNAL RENDER

First coat  
8mm over laps

1:3 Lime Putty:Sand with yuk hair 2 ½ kg:tone  
2" long strips  
(or 3No bundles in burrow full of putty mix)

SECOND FLOATING COAT  
10mm

1:3 Lime Putty:Sand  
(use half amount of hair than previous coat)

THIRD/FOURTH COAT  
2mm

2:3 Lime Putty:Sand  
(can be single coat or two very thin coats)

- 498 SPECIAL PROTECTION OF HISTORIC PLASTERWORK  
- Generally: minimise damage and disturbance to retained plasterwork  
- Protection methods: submit proposals

#### PREPARING BACKGROUNDS

- 510 SUITABILITY OF BACKGROUNDS  
- General: suitable to receive coating/backings soundness, free from loose areas and significant cracks and gaps. Cutting, chasing, making good, fixing of conduits and service outlets and the like completed. Tolerance permitted specified flatness/regularity of finished coatings. Cleanliness: remove dirt, dust efflorescence and mould and other contaminants incompatible with coating.
- 527 RAKING OUT FOR KEY  
- Soft joints in existing masonry: rake out to a depth of 13mm minimum. Dust and debris remove from joints
- 566 REMOVING DEFECTIVE EXISTING PLASTER  
- Plaster for removal: loose, soft, friable, badly cracked, effected by efflorescence or otherwise damaged. Hollow detached areas, seek instructions from CA.  
- Stained plasters: seek instructions from CA  
- Removing defective plaster: cut back to a square, sound edge  
- Faults in background (structural deficiencies, damp etc): seek instructions from CA.  
- Dust and loose material: remove from exposed backgrounds and edges
- 568 EXISTING DAMP AFFECTED PLASTER/RENDER  
- Plaster affected by rising damp: remove to a height of 300mm above highest point reached by damp, or 1.0m above dpc, whichever is greatest  
- Perished and salt contaminated masonry: mortar joints rake out, masonry units seek instruction from CA.  
- Faults on background (structural deficiencies, additional sources of damp etc): seek instructions from CA.  
- Drying out of backgrounds: establish drying conditions, leaves wall to dry for as long as possible before plastering  
- Dust and loose material: remove from exposed backgrounds and edges
- 584 RECORDING CASTINGS  
- Generally, make castings before commencing repair work to enable accurate reproductions to be made  
- Method: as Clause 695  
- Identification: mark clearly to identify original location
- 587 REPLACING TIMBER LATHS  
- Generally: remove defective plaster and lath, prevent disturbance to adjacent sound plaster. Defective laths: cut back to supporting timber, cavities keep clear of debris  
- Support for laths: sound and firmly fixed. Provide additional supports where necessary  
- New lathing: timber as Clause 626
- 589 REFIXING SOUND TIMBER LATHS THROUGH EXISTING PLASTER  
- Application of repair to loose, but otherwise sound laths on sound framework  
- Cut out plaster to a sound undercut edge, screw laths and plaster back to framework using screw and washer. Screws: stainless steel with countersunk heads; washers: metal to match screw. Inner washer 25mm diameter, outer washer 38mm diameter. Mesh size: 1.5mm. Fixing centres: 400mm. Replastering: one part lime putty: one part Gypsum. Finish: flush with existing
- 592 CONSOLIDATING EXISTING TIMBER LATHS AND PLASTER CEILINGS  
- Generally: achieve effective consolidation of plasterwork to supporting structure  
- Methods: fully support area of plasterwork to be repaired. Repair areas not to be more than 1.0m long by the width of the trough between the joists. Ensure that each repair is dry and effective before commencing repairs to immediately adjacent areas.

- Cut through defective laths carefully along the sides of joists, or where laths are sound cut through alternate laths. Remove cut laths, carefully vacuum surface of plaster to remove debris and dust. Apply diluted PVAC sealer to control suction
- Install metal lath in reinforcement angles, as Clause 593, in pairs opposite each other at 400mm centres
- Bed horizontal leg of angles in Plaster of Paris on top of existing plaster with ends touching\overlapping those opposite. Screw vertical legs of angles securely to sides of joists with stainless screws and washers
- Apply length of canvas wads, soaked in Plaster of Paris over metal lathing and existing plaster to provide continuous and thorough bonding over the entire area. Cover the repair area with a coat of Plaster of Paris sufficient to just cover the wadding.

593 METAL LATH REINFORCEMENT TO REPAIRS OF TIMBER LATH AND PLASTER CEILINGS

- Lathing type: stainless steel chicken wire
- Formed into equal angles, vertical leg not less than 75mm; horizontal leg half the spacing between the sides of the joists, plus 25mm. Length to be draped over ceiling joist and between main beams, touching the top of the existing plaster ceiling and screw fixed to sides with stainless steel screws and washers

596 REPAIRING HOLES AND CRACKS IN PLAIN PLASTER ON TIMBER LATHS

- Repair area with missing or unsound laths, as specified
- Carefully cut away any loose plaster from around edges of holes, or along lines of cracks. Do not disturb adjacent sound plaster
- Remove all loose plaster and dust by brushing and vacuuming. Dampen laths and edges of plaster to control suction before applying

598 REPAIRING MINOR CRACKS IN PLASTERWORK

- Thoroughly brush cracks clean, where necessary carefully cut back edges of plaster either side of crack to produce a firm edge. Lightly dampen cracks to control suction. Fill with approved plaster and finish flush with surrounding plaster. For decorative plasterwork, ensure that the surface profile\patterns are continued accurately.

599 REPAIRING FINAL COAT PLASTERS ON SOUND UNDERCOAT

- Carefully remove area of loose or flaking final coat plaster. Brush clean background plaster to repair area and apply PVAC sealer to control suction. Final coat to plaster to Clause 350.

**BACKING\BEADS\JOINTS**

600 ADDITIONAL FRAMING SUPPORTS FOR BRACKETS

- Fixture, fittings and surface outlet to suit fixings
- Board edges and perimeters, as recommended by board manufacturer to suit type and performance of board

605 GYPSUM PLASTERBOARD BACKINGS

- Type to BNS 1230 Type 1. Core density: minimum of 650kg\cu.m
- Exposed surface and edge profiles suitable to receive specified plaster finish.

607 PROPRIETARY GYPSUM PLASTERBOARD BACKINGS

- Manufacturer: British Gypsum. Product reference: 12.5mm Gyprok wallboarding, Gyprok Gypwall Moisture Resistant board for WC compartments with grey paper face exposed
- Expose surface and edge profiles suitable to receive specified plaster finish

607A PROPRIETARY PLASTERBOARD LININGS

- Manufacturer: British Gypsum. Product reference: 10mm Gyprok multiboard
- To be used to provide fire separations between floors and partitions. Double thickness board staggered joint fixed with Gyprok nails at 150mm centres with a skim finish.

610 FIXING PLASTERBOARD BACKINGS TO TIMBER BACKGROUNDS

- Fixings, accessories and installation method: as recommended by board manufacturer, fixing at following centres maximum. Nail fixing: 150mm centres; screw fixing to partitions/walls: 300mm reduced to 200mm at external angles. Screw fixing to ceilings: 230mm.
  - Position of nail\screws from edges of board: minimum bound edges - 10mm; cut unbound edges - 13mm
  - Position of nails\screws from edges of support: minimum 6mm
  - Nail\screw heads: set in a depression. Do not break paper or Gypsum core.
- 612 JOINTS AND PLASTERBOARD BACKINGS
- Ceilings: bound edges are right angles to support and with ends staggered in adjacent rows. Two layer boarding staggered joints between layers
  - Partition walls: vertical joints centres on stud; staggered joints on opposite sides of studs. Two layer boarding staggered joints between layers. Horizontal joints: two layer boarding, staggered joints between layers at least 600mm. Support edges of outer layer. Joint widths maximum 3mm.
- 626 TIMBER LATHING
- Type\Section size: given quality of timber free from decay, insect attack, except pin-hole bores, splits, shakes, no knots wider than half the width of the section
  - Preservative treatment: not to be organic solvent, and must be checked for possible staining to plaster, eg Glycol Boron Formation - submit details
  - Moisture content at time of installation: maximum 16%
  - Installation: spacing of laths 8-10mm apart and in straight lines. Butt joints 3mm wide centred over supports. Stagger at not more than every 8<sup>th</sup> lath. Nails at every support. Type: 25mm minimum, galvanised clout nails. Counter laths to faces, or sides of timber supports, wider\deeper than 75mm
- 634 BEAD\STOPS WHERE REQUIRED TO PREVENT DAMAGE TO CORNERS AND REVEALS
- Material: timber dowel
- 646 CRACK CONTROL AT JUNCTIONS BETWEEN DISSIMILAR SOLID BACKGROUNDS
- Where defined movement joints are not required, where dissimilar solid background material are in the same plane, and rigidly bonded or tied together
  - Crack control material isolating layer building paper to BS1521. Metal lathing: stainless steel only
  - Installation: fix lathing over isolated area layer at staggered centres along both edges
  - Width of installation over single junctions, isolating layer 150mm, lathing 300mm
  - Width of installation across face of dissimilar background material, with face not greater than 450mm. Isolating layer not less than 25mm beyond junction with adjacent background. Lathing not less than 100mm beyond edges of isolating layer.
- 659 PLASTERBOARD JOINTS
- Joint reinforcement: apply to joints and angles except where consistent with metal beads
  - installation: continuous length of taped, pressed well into filled joints flat and smooth
- 673 PLASTERING OVER CONDUITS\SERVICE CHASERS
- General: prevent cracking over conduits and other services
  - Services chased into background. Isolate from coating by covering with galvanised metal lathing fixed at staggered centres along both edges.
- 689 MOULDING\DECORATIVE PLASTERWORK
- In situ run plaster moulding
  - Template profile: give notice before commencing setting out
  - Core mix: core stuff 1:3 lime putty: sand.  
Keying: key surface of core and undercoats
  - Mitres: form as running out work proceeds
  - Final coat: run to a consistent profile with sharp arrises. Mix 1:2 Gypsum:lime putty keying for enrichments. Lightly score contact areas of final coat. Clean off droppings and clean out mitres.

- 695 REPRODUCTION OF EXISTING PLASTER MOULDING
- Moulds and casts generally: prepare moulds from original plaster face. Reproduce profiles and details accurately. Quantity of moulds: sufficient to complete the required number of casts and maintaining a consistent appearance.
  - Casting material: Plaster of Paris
  - Inserts: as necessary to give strength and rigidity to the mouldings and provide secure fixing
- 697 REPAIRING CRACKS\STEPS IN PLASTER MOULDINGS
- Preparation: remove any applied ornament and keep for reuse. Cut back plasterwork each side of crack, replace any defective timber laths. Remove dust. Suction control: dampen or apply suitable sealer
  - Plaster: follow the finish flush with existing mould profile. Backing coat to be compatible with existing. Key to receive final coat. Final coat: 1:2 Gypsum: lime putty. Apply ornament. Fix accurately using Gypsum base adhesive.
- PLASTERING**
- 710 APPLICATION GENERALLY
- General: apply coating firmly and in one continuous operation between angles and joints. Achieve good adhesion.
  - Appearance of finish surface: even and consistent, free from rippling, hollows, ridges, cracks and crazing. Accuracy: finish to a true plane to correct line and level with angles and corners to a right angle, unless specified otherwise and with walls and reveals plumb and square
  - Drying out: prevent excessive, rapid or localised drying out
- 715 FLATNESS\SURFACE REGULARITY
- Sudden irregularities not permitted
- 718 JUNCTION OF NEW PLASTERWORK WITH EXISTING
- General: finish new plasterwork flush with original face of existing plasterwork to form a seamless junction.
- 720 DUBBING OUT
- General: to correct background inaccuracies, smooth dents concrete and similar surfaces. Dubbing out prohibited unless total plaster thickness is within range recommended by plaster manufacturer
  - Thickness of any one coat maximum 10mm
  - Mix as undercoat
  - Application: achieve firm bond. Allow each coat to set sufficiently before the next is applied. Cross scratch surface of each coat.
- 725 UNDERCOATS GENERALLY
- Cross scratch to provide key for next coat
  - Undercoats on metal lathing: work well into sides to attain maximum key
  - Undercoats gauge with Portland cement. Do not apply next coat until drying shrinkage is substantially complete
- 777 SMOOTH FINISH
- Appearance: a tight matt smooth surface with no hollows, abrupt changes of level or trowel marks. Avoid water, brush, excessive trowelling, and over polishing
- 778 WOOD FLOAT FINISH
- Appearance: an even overall texture. Finish with a dry wood float as soon as wet sheen has disappeared
- 786 PLASTERING ON TIMBER LATHING
- General: apply undercoat with sufficient pressure to force it between the laths and form continuous key

788 NON HYDRAULIC LIME PLASTER UNDERCOATS

- Suction control: dampen background
- Application: firmly and trowel to an even surface, consolidate\scour as necessary to control shrinkage. Cross scratch to provide an undercut key for next coat. Do not penetrate through the coat. Key for final coats: lightly scratch using a wood devil float.
- Curing coatings: keep damp by lightly spraying with water until coating is sufficiently firm

789 3 LAYER NON HYDRAULIC LIME PLASTER FINAL COAT

- Suction control: dampen undercoat
- Application: first layer use steel trowel, second layer use wood float in the opposite direction to first layer, third layer use a steel trowel in the same direction as the second layer
- Consolidation\scouring: as necessary to control shrinkage use wood cross frame float
- Finishing: dampen with a stock brush. Polish with a steel trowel. Finish with a dampened stock brush
- Drying: keep damp by lightly spraying with water until coat is sufficiently firm

**M60 PAINTING/CLEAR FINISHING**

To be read with Preliminaries/General conditions.

**COATING SYSTEMS****110 OAK FLOORBOARD AND DOORS.**

- Manufacturer: Liberoin
  - Product reference: pure tung oil
- Surfaces: bare wood
  - Preparation: sanded
- Initial coats:
  - Type: 50:50 White Spirit: Pure Tung Oil.
  - Number of coats: 3
- Finishing coats: .
  - Type: pure tung oil
  - Number of coats: 1

**130 WINDOWS INTERNALLY AND EXTERNALLY**

- Manufacturer: EARTHBOEN PAINTS
  - Product reference: Pro Aqua Eggshell
- Surfaces: bare
  - Preparation: sanded, loose flaking material removed
- Initial coats:
  - Type: 9 parts, eggshell mixed with 1 part water
  - Number of coats: 1
- Finishing coats:
  - Type: Eggshell (undiluted)
  - Number of coats: 2

**150 EXTERNAL RENDER NEW SURFACES**

- Manufacturer: Contractor to source
  - Product reference: lime wash
- Surfaces: brush and wash free of an loose dust dirt, lichen etc
  - Preparation:
- Initial coats:
  - Type: First coat, work well into cracks and joints
  - Number of coats: 1 .
- Finishing coats:
  - Type: Lime wash – leave 24 hours between coats .
  - Number of coats: 4 (5 for white)

**155 EXISTING EXTERNAL RENDER SURFACES**

- Manufacturer: Contractor to source
  - Product reference: lime wash
- Surfaces: brush and wash free of an loose dust dirt, lichen etc
  - Preparation: spray area with water until well wetted. This may involve 2/3 sprayings some 0.5-1 hour prior to lime washing
- Initial coats:
  - Type: 50:50 Lime Wash: water
  - Number of coats: 1 .
- Finishing coats:
  - Type: Lime wash – leave 24 hours between coats .
  - Number of coats: 4 (5 for white)

**160 INTERNAL WALLS AND CEILINGS**

- Manufacturer: Earthborn
  - Product reference: Earthborn emulsion

- Surfaces: dry, grease free surfaces
  - Preparation: surfaces must be sand, absorbent, dry, clean and free of dust and grease. Remove all loose plaster and make good uneven areas with filler. All unsuitable/flaking or peeling paint surfaces should be removed with brush or scraper. Oil paint surfaces must be lightly sanded.
- Initial coats:
  - Type: Four parts paint mixed with one part water
  - Number of coats: 1
- Finishing coats:
  - Type: Earthborn Emulsion
  - Number of coats: 2

#### 165 EXTERNAL WEATHERBOARD

- Manufacturer: EARTHBORN PAINTS
  - Product reference: Pro Aqua Eggshell
- Surfaces: bare
  - Preparation: sanded, loose flaking material removed
- Initial coats:
  - Type: 9 parts, eggshell mixed with 1 part water
  - Number of coats: 1
- Finishing coats:
  - Type: Eggshell (undiluted)
  - Number of coats: 2

### GENERALLY

#### 210 COATING MATERIALS

- Manufacturer: Obtain coatings from one of the following:
- Selected manufacturer: Submit name before commencement of coating work.

#### 215 HANDLING AND STORAGE

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

#### 220 COMPATIBILITY

- Coating materials selected by contractor:
  - Recommended by their manufacturers for the particular surface and conditions of exposure.
  - Compatible with each other.
  - Compatible with and not inhibiting performance of preservative/fire retardant pretreatments.

#### 280 PROTECTION

- 'Wet paint' signs and barriers: Provide where necessary to protect other operatives and general public, and to prevent damage to freshly applied coatings.

#### 300 CONTROL SAMPLES

- General: Carry out sample areas of finished work, including preparation, as follows:
  - Types of coating: External render
  - Nature of sample: 1m<sup>2</sup>
  - M60/ 150.00
- Approval of appearance: Obtain before commencement of general coating work.

#### 300 CONTROL SAMPLES

- General: Carry out sample areas of finished work, including preparation, as follows:  
Types of coating: external render  
Nature of sample: 1m<sup>2</sup>  
M60/ 150
- Approval of appearance: Obtain before commencement of general coating work.
  
- General: Carry out sample areas of finished work, including preparation, as follows:  
Types of coating: internal partition wall G1/G2  
Nature of sample: 1m<sup>2</sup>  
M60/ 160
- Approval of appearance: Obtain before commencement of general coating work.

#### 321 INSPECTION OF WORK STAGES

- General: Submit a programme for inspections as follows:  
Types of coating : All Inspection at completion of one surface  
M60/ 110-160
- Give notice: When each stage is ready for inspection.

#### PREPARATION

#### 400 PREPARATION GENERALLY

- Standard: To BS 6150, Section 4.
- Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
- Substrates: Sufficiently dry in depth to suit coating.
- Efflorescence salts: Remove.
- Dirt, grease and oil: Remove.
  - Give notice if contamination of surfaces/ substrates has occurred.
- Joints, cracks, holes and other depressions:
  - Fill with stoppers/ fillers. Work well in and finish off flush with surface.
  - Abrade to a smooth finish.
- Water based stoppers and fillers:
  - Apply before priming unless recommended otherwise by manufacturer.
  - If applied after priming: Patch prime.
- Oil based stoppers and fillers: Apply after priming.
- Surface irregularities: Abrade to a smooth finish.
- Dust, particles and residues from abrasion: Remove.
- Doors, opening windows and other moving parts:
  - Ease before coating.
  - Prime resulting bare areas.

#### 420 FIXTURES AND FITTINGS

- Before commencing work: Remove the following:
  
- On completion of coating work: Refix.

#### 425 IRONMONGERY

- Before commencing work: Remove ironmongery from surfaces to be coated.
- Hinges: Do not remove.
- On completion of coating work: Refix.

#### 430 EXISTING IRONMONGERY

- General: Remove old coating marks. Clean and polish.

#### 440 PREVIOUSLY COATED SURFACES GENERALLY

- Preparation standard: To BS 6150, Section 6.
- 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.
  - Discovery: Give notice of:
    - Coatings suspected of containing lead.
    - Substrates suspected of containing asbestos.
    - Significant rot, corrosion or other degradation of substrates.
  - Retained coatings:
    - Thoroughly clean to remove dirt, grease and contaminants.
    - Gloss coated surfaces: Abrade provide a key.
  - Partly removed coatings:
    - Additional preparatory coats: Apply to restore original coating thicknesses.
    - Junctions: Abrade to give a flush surface.
  - Completely stripped surfaces: Prepare as for uncoated surfaces.
- 451 PREVIOUSLY COATED SURFACES - BLAST CLEANING
- Operatives:
    - Trained/ experienced in blast cleaning.
    - Submit evidence of training/ experience on request.
  - Dust and nuisance: Minimize.
- 461 PREVIOUSLY COATED TIMBER
- Degraded or weathered surface timber: Abrade to remove.
  - Degraded substrate timber: Repair with sound timber of same species.
  - Exposed resinous areas and knots: Apply two coats of knotting.
- 471 PREPRIMED TIMBER
- Defective primer: Abrade back to bare timber.
  - Bare areas: Reprime.
- 481 UNCOATED TIMBER
- General: Abrade to a smooth, even finish with arrises and moulding edges lightly rounded or eased.
  - Heads of fasteners: Countersink sufficient to hold stoppers/fillers.
  - Resinous areas and knots: Apply two coats of knotting.
- 490 PREVIOUSLY COATED STEEL
- Defective paintwork: Remove to leave a firm edge and clean bright metal.
  - Sound paintwork: Abrade to provide key for subsequent coats.
  - Corrosion and loose scale: Abrade back to bare metal.
  - Residual rust: Treat with a proprietary removal solution.
  - Bare metal: Apply primer as soon as possible.
  - Remaining areas: Degrease.
- 500 PREPRIMED STEEL
- Defective primer, corrosion and loose scale: Abrade back to bare metal.
  - Bare areas: Reprime as soon as possible.
- 511 GALVANIZED, SHERARDIZED AND ELECTROPLATED STEEL
- White rust: Remove.
  - Pretreatment: Apply one of the following:
    - 'T wash'/ mordant solution to blacken whole surface.
    - Etching primer recommended by coating system manufacturer.
- 521 UNCOATED STEEL - MANUAL CLEANING
- Oil and grease: Remove.
  - Corrosion, loose scale, welding slag and spatter: Abrade to remove.
  - Residual rust: Treat with a proprietary removal solution.
  - Primer: Apply as soon as possible.

- 531 UNCOATED STEEL - BLAST CLEANING
- Oil and grease: Remove.
  - Blast cleaning:
    - Atmospheric conditions: Dry.
    - Abrasive: Suitable type and size, free from fines, moisture and oil.
    - Surface finish: To BS EN ISO 8501-1, preparation grade
  - Primer: Apply as soon as possible and within four hours of blast cleaning.
- 541 UNCOATED ALUMINIUM/COPPER/LEAD
- Surface corrosion: Remove and lightly abrade.
  - Pretreatment: Etching primer if recommended by coating system manufacturer.
- 552 UNCOATED PVC-U
- Dirt and grease: Remove. Do not abrade.
- 560 UNCOATED CONCRETE
- Release agents: Remove.
- 570 UNCOATED MASONRY/RENDERING
- Loose and flaking material: Remove.
- 580 UNCOATED PLASTER
- Nibs, trowel marks and plaster splashes: Scrape off.
  - Overtrowelled 'polished' areas: Abrade lightly.
- 590 UNCOATED PLASTERBOARD
- Depressions around fixings: Fill with stoppers/fillers
- 601 UNCOATED PLASTERBOARD - TO RECEIVE TEXTURED COATING
- Joints: Fill, tape and feather out with materials recommended by textured coating manufacturer.
- 611 WALLCOVERINGS
- Retained wallcoverings: Check that they are in good condition and well adhered to substrate.
  - Previously covered walls: Wash down to remove paper residues, adhesive and size.
- 622 ORGANIC GROWTHS
- Loose growths and infected coatings: Scrape off and remove.
  - Treatment biocide: Apply appropriate solution to growth areas and surrounding surfaces.
  - Dead growth: Scrape off and remove.
  - Residual effect biocide: Apply appropriate solution to inhibit re-establishment of growths.
- 631 PREVIOUSLY PAINTED WINDOWS 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 and allow to set.
    - Seal and coat as soon as sufficiently hard.
- 640 EXTERNAL POINTING TO EXISTING FRAMES
- Defective sealant pointing: Remove.
  - Joint depth: Approximately half joint width; adjust with backing strip if necessary.
  - Preparation and application : As section Z22.
  - Sealant:
    - Manufacturer:
    - Product reference:

- 645 POINTING TO INTERNAL MOVEMENT JOINTS
- General: Apply to junctions of walls and ceilings with architraves, skirtings and other trims.
  - Preparation and application : As section Z22.
  - Sealant: Water based acrylic.
    - Manufacturer:
    - Product reference:
- 651 EXISTING GUTTERS
- Dirt and debris: Clean from inside of gutters.
  - Defective joints: Clean and seal with suitable jointing material.
- APPLICATION**
- 711 COATING GENERALLY
- Application standard: To BS 6150, Section 5.
  - Conditions: Maintain suitable temperature, humidity and air quality during application and drying.
  - Surfaces: Clean and dry at time of application.
  - Thinning and intermixing of coatings: Not permitted unless recommended by manufacturer.
  - Overpainting: Do not paint over intumescent strips or silicone mastics.
  - Priming coats:
    - Thickness: To suit surface porosity.
    - Application: As soon as possible on same day as preparation is completed.
  - Finish:
    - Even, smooth and of uniform colour.
    - Free from brush marks, sags, runs and other defects.
    - Cut in neatly.
- 720 PRIMING JOINERY
- Preservative treated timber: Retreat cut surfaces before priming.
  - End grain: Liberally coat, allow to soak in and then recoat.
- 730 WORKSHOP COATING OF CONCEALED JOINERY SURFACES
- General: Apply coatings to all surfaces of components.
- 731 SITE COATING OF CONCEALED JOINERY SURFACES
- General: After priming, apply additional coatings to surfaces that will be concealed when fixed in place.
    - Additional coatings:
    - Components:
- 740 CONCEALED METAL SURFACES
- General: Apply additional coatings to surfaces that will be concealed when fixed in place.
    - Additional coatings:
    - Components:
- 751 STAINING TIMBER
- Primer: Apply if recommended by stain manufacturer.
  - Stain:
    - Apply in flowing coats.
    - Brush out excess stain before set.
    - Produce uniform depth of colour.
- 760 VARNISHING TIMBER
- First coat:
    - Thin with white spirit.
    - Brush well in and lay off avoiding aeration.
  - Subsequent coats: Rub down lightly between coats along the grain.

- 770      EXTERNAL DOORS
- Bottom edges: Prime and coat before hanging doors.
- 780      BEAD GLAZING TO COATED TIMBER
- Before glazing: Apply first two coats to rebates and beads.
- 790      PUTTY GLAZING
- Setting: Allow putty to set for seven days.
  - Sealing:
    - Within a further 14 days, seal with an oil based primer.
    - Fully protect putty with coating system as soon as it is sufficiently hard.
    - Extend finishing coats on to glass up to sight line.
- 800      GLAZING
- Etched, sand blasted and ground glass: Treat or mask edges before coating to protect from contamination by oily constituents of coating materials.
- 810      WATER REPELLENT
- Application: Liberally flood surface, giving complete and even coverage.

**N13 SANITARY APPLIANCES AND FITTINGS****PRODUCTS**

- 300A WC AND CISTERN: TO BE SOURCED BY CONTRACTOR & APPROVED BY CLIENT -  
Twyford Option
- Allow for flushing valves and other appropriate accessories.
- 332 SHOWER TRAY SCREEN AND 9.5kw ELECTRIC SHOWER:  
Contractor to source Client to approve  
Tritan  
Allow for all associated fixtures and fittings.
- 335A WASH BASINS: TO BE SOURCED BY CONTRACTOR & APPROVED BY CLIENT - Twyford  
Option
- Taps to be sourced by Contractor
  - Allow for waste, trap and other appropriate accessories

**EXECUTION**

- 610 INSTALLATION GENERALLY
- Assembly and fixing: Surfaces designed to falls to drain as intended.
  - Fasteners: Nonferrous or stainless steel.
  - Supply and discharge pipework: Fix before appliances.
  - Fixing: Fix appliances securely to structure. Do not support on pipework.
  - Jointing and bedding compounds: Recommended by manufacturers of appliances, accessories and pipes being jointed or bedded.
  - Appliances: Do not use. Do not stand on appliances.
  - On completion: Components and accessories working correctly with no leaks.  
Labels and stickers: Remove.
- 613 COMPATIBILITY OF COMPONENTS
- General: Each sanitary assembly must consist of functionally compatible components, preferably obtained from a single manufacturer.  
Exceptions: None.
- 620 NOGGINGS AND BEARERS
- Noggings, bearers, etc. to support sanitary appliances and fittings: Position accurately. Fix securely.
- 630 TILED BACKGROUNDS OTHER THAN SPLASHBACKS
- Timing: Complete before fixing appliances.  
Fixing appliances: Do not overstress tiles.
- 650 INSTALLING WC PANS
- Floor mounted pans: Screw fix and fit cover caps over screw heads. Do not use mortar or other beddings.  
Seat and cover: Stable when raised.
- 670 INSTALLING CISTERNS
- Cistern operating components: Obtain from cistern manufacturer.
    - Float operated valve: Matched to pressure of water supply.
  - Overflow pipe: Fixed to falls and located to give visible warning of discharge.  
Location: Agreed, where not shown on drawings.
- 710 INSTALLING TAPS
- Fixing: Secure against twisting.
  - Seal with appliance: Watertight.

Positioning: Hot tap to left of cold tap as viewed by user of appliance.

720 INSTALLING WASTES AND OVERFLOWS

- Bedding: Waterproof jointing compound.  
Fixing: With resilient washer between appliance and backnut.

755 SEALANT BEDDING AND POINTING

- Bedding: Bed sinks to top of worktops. .  
Pointing: Joints between appliances and splashbacks. .

**P31 HOLES, CHASES, COVERS AND SUPPORTS FOR SERVICES****PRODUCTS****EXECUTION**

- 610 COORDINATION  
Locations and dimensions of holes and chases for services: Submit details
- 620 HOLES AND CHASES IN IN SITU CONCRETE
- Cast in: Holes larger than 10 mm diameter and chases.
  - Cutting and drilling:
    - Permitted for holes not larger than 10 mm diameter.
    - Not permitted for holes larger than 10 mm diameter except as indicated on drawings.
- 650 HOLES, RECESSES AND CHASES IN MASONRY
- Locations: To maintain integrity of strength, stability and sound resistance of construction.
  - Sizes: Minimum needed to accommodate services.
    - Holes (maximum): 300 x 300 mm.
  - Walls of hollow or cellular blocks: Do not chase.
  - Walls of other materials:
    - Vertical chases: No deeper than one third of single leaf thickness, excluding finishes.
    - Horizontal or raking chases: No longer than 1 m. No deeper than one sixth of the single leaf thickness, excluding finishes.
  - Chases and recesses: Do not set back to back. Offset by a clear distance at least equal to the wall thickness.
  - Cutting: Do not cut until mortar is fully set. Cut carefully and neatly. Avoid spalling, cracking and other damage to surrounding structure.
- 660 PREFORMED HOLES IN MASONRY
- Width of holes without bridging over (maximum): one brick.
  - Holes requiring bridging: Submit proposals.
- 670 NOTCHES AND HOLES IN STRUCTURAL TIMBER
- General: Avoid if possible.
  - Sizes: Minimum needed to accommodate services.
  - Position: Do not locate near knots or other defects.
  - Notches and holes in same joist: Minimum 100 mm apart horizontally.
  - Notches in joists: Locate at top. Form by sawing down to a drilled hole.
    - Depth (maximum): 0.125 x joist depth.
    - Distance from supports: Between 0.07 and 0.25 x span.
  - Holes in joists: Locate on neutral axis.
    - Diameter (maximum): 0.25 x joist depth.
    - Centres (minimum): 3 x diameter of largest hole.
    - Distance from supports: Between 0.25 and 0.4 of span.
  - Notches in roof rafters, struts and truss members: Not permitted.
  - Holes in struts and columns: Locate on neutral axis.
    - Diameter (maximum): 0.25 x minimum width of member.
    - Centres (minimum): 3 x diameter of largest hole.
    - Distance from ends: Between 0.25 and 0.4 of span

**R10 RAINWATER DRAINAGE SYSTEMS****GENERAL****110 GRAVITY RAINWATER DRAINAGE SYSTEM**

- Rainwater outlets: None.
- Gutters: CAST IRON FINISH BLACK
- Pipework: CAST IRON EXTERNAL FINISH BLACK
- Below ground drainage: As section R12.
- Disposal: To soakaway as section R12.
- Controls: Not applicable.
- Accessories: None.

**SYSTEM PERFORMANCE****210 DESIGN**

- Design: Complete the design of the rainwater drainage system.
- Standard: To BS EN 12056-3, clauses 3-7 and National Annexes.
- Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

**221 COLLECTION AND DISTRIBUTION OF RAINWATER**

General: Complete, and without leakage or noise nuisance.

**230 DESIGN PARAMETERS - GENERAL**

- Roof and gutter construction and finish: Pantiled roof to square PVC gutters and downpipes.
- Design rate of rainfall: As BS EN 12056-3, National Annex NB.2.
  - Category: 1.
- Design life of building: 60 years.
- Available capacity of existing below ground drainage (maximum): New soakaway as section R12.

**PRODUCTS****350 PVC-U GUTTERS**

- Standard: To the relevant parts of BS 4576-1, BS EN 607 and BS EN 1462, Kitemark certified.
- Manufacturer: Submit proposals.
  - Product reference: Submit proposals.
- Profile: Box.
- Nominal size: 100 mm.
- Colour: Black.
- Brackets: PVC-U clips, black.
  - Fixings: Stainless steel screws.
  - Size: 40 x 5 mm.
- Accessories: Gutter stop ends and Leaf guards.

**420 PVC-U PIPEWORK - EXTERNAL**

- Standard: To the relevant parts of BS 4576-1 and BS EN 12200-1, Kitemark certified.
- Manufacturer: Submit proposals.
  - Product reference: Submit proposals.
- Section: Square.
- Nominal size: DN75.
- Colour: Black.
- Brackets: PVC-U clips, black.
  - Fixings: Stainless steel screws.
  - Size: 40 x 5 mm.
- Accessories: To be agreed.

**EXECUTION****600 PREPARATION**

- Work to be completed before commencing work specified in this section:
  - Below ground drainage. Alternatively, make temporary arrangements for dispersal of rainwater without damage or disfigurement of the building fabric and surroundings.
- Painting of surfaces which will be concealed or inaccessible.

**605 INSTALLATION GENERALLY**

- Electrolytic corrosion: Avoid contact between dissimilar metals where corrosion may occur.
- Plastics and galvanized steel pipes: Do not bend.
- Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
- Protection:
  - Fit purpose made temporary caps to prevent ingress of debris.
  - Fit access covers, cleaning eyes and blanking plates as the work proceeds.

**610 FIXING AND JOINTING GUTTERS**

- Joints: Watertight.
- Brackets: Securely fixed.
  - Fixings: Screwed to rafter feet.
  - Fixing centres: To every rafter.
  - Additional brackets: Where necessary to maintain support and stability, provide at joints in gutters and near angles and outlets.
- Roofing underlay: Dressed into gutter.

**615 SETTING OUT EAVES GUTTERS - TO FALLS**

- 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.
- Outlets: Align with connections to below ground drainage.

**630 INSTALLING RAINWATER OUTLETS**

- Fixing: Secure. Fix before connecting pipework.
  - Method: Grout into preformed holes.
- Junctions between outlets and pipework: Accommodate movement in structure and pipework.

**635 FIXING PIPEWORK**

- Pipework: Fix securely, plumb and/ or true to line.
- Branches and low gradient sections: Fix with uniform and adequate falls to drain efficiently.
- Externally socketed pipes and fittings: Fix with sockets facing upstream.
- Additional supports: Provide as necessary to support junctions and changes in direction.
- Vertical pipes:
  - Provide a loadbearing support at least at every storey level.
  - Tighten fixings as work proceeds so that every storey is self supporting.
  - Wedge joints in unsealed metal pipes to prevent rattling.
- Wall and floor penetrations: Isolate pipework from structure.
  - Pipe sleeves: As section P31.
  - Masking plates: Fix at penetrations if visible in the finished work.
- Expansion joint pipe sockets: Fix rigidly to buildings. Elsewhere, provide brackets and

**640 FIXING VERTICAL PIPEWORK**

- Bracket fixings: Screwed into weatherboard.
- Distance between bracket fixing centres (maximum): 1200 mm.

**650 JOINTING PIPEWORK AND GUTTERS**

- General: Joint with materials and fittings that will make effective and durable connections.

- Jointing differing pipework and gutter systems: Use adaptors intended for the purpose.
- Cut ends of pipes and gutters: Clean and square. Remove burrs and swarf. Chamfer pipe ends before inserting into ring seal sockets.
- Jointing or mating surfaces: Clean and, where necessary, lubricate immediately before assembly.
- Junctions: Form with fittings intended for the purpose.
- Jointing material: Strike off flush. Do not allow it to project into bore of pipes and fittings.  
Surplus flux, solvent jointing materials and cement: Remove.

#### 700 ACCESS FOR TESTING AND MAINTENANCE

- General: Install pipework and gutters with adequate clearance to permit testing, cleaning and maintenance, including painting where necessary.  
Access fittings and rodding eyes: Position so that they are not obstructed.

#### COMPLETION

#### 900 TESTING GENERALLY

- Dates for testing: Give notice.
    - Period of notice (minimum): 3 days.
  - Preparation:
    - Pipework: Complete, securely fixed, free from defects, obstruction and debris before testing.
  - Testing:
    - Supply clean water, assistance and apparatus.
    - Do not use smoke to trace leaks.
- Records: Submit a record of tests.

#### 910 GUTTER TEST

- Preparation: Temporarily block all outlets.  
Testing: Fill gutters to overflow level and after 5 minutes closely inspect for leakage.

#### 915 MAINTENANCE INSTRUCTIONS

- General: At completion, submit printed instructions recommending procedures for maintenance of the rainwater installation, including full details of recommended inspection, cleaning and repair procedures.

#### 920 IMMEDIATELY BEFORE HANDOVER

- Construction rubbish, debris, swarf, temporary caps and fine dust which may enter the rainwater system: Remove. Do not sweep or flush into the rainwater system.  
Access covers, rodding eyes, outlet gratings and the like: Secure complete with fixings.

**R11 ABOVE GROUND FOUL DRAINAGE SYSTEMS****GENERAL****115 ABOVE GROUND FOUL DRAINAGE SYSTEM**

- Sanitary and floor drainage outlets: Bathroom and kitchen fittings as drawing
- Waste pipework: Plastics.
- Discharge stack and branch pipework: PVC-U.
- Separate ventilating pipework: None required, Durgo ventilation.
- Accessories: Grease traps and converters and rodding eyes.  
Disposal: To below ground drainage as section R12.

**SYSTEM PERFORMANCE****210 DESIGN**

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

**220 COLLECTION AND DISTRIBUTION OF FOUL WATER**

- General: Quick, quiet and complete, self-cleansing in normal use, without blockage, crossflow, backfall, leakage, odours, noise nuisance or risk to health.
- Pressure fluctuations in pipework (maximum):  $\pm 38$  mm water gauge.  
Water seal retained in traps (minimum): 25 mm.

**PRODUCTS****365 PVC-U PIPEWORK- FOR DISCHARGE STACKS AND BRANCHES**

- Standard: To BS EN 1329-1, Kitemark certified.
  - Weather resistance, connectors to WC pans, opening dimensions of access fittings, design of swept fittings, stand off dimensions of pipe and fitting brackets and requirements for adaptors and plugs: To BS 4514.
- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.
- Nominal size: As drawing 35.
- Colour: Submit proposal.
- Brackets: Plastics pipe clips, colour to match pipes.
  - Fixings: Sherardized steel screws.  
Size: 40 x 5 mm.
- Accessories: Air admittance valves and other accessories as required to complete design.

**375 AIR ADMITTANCE VALVES**

- Standard: To BS EN 12380 or Agrément certified.
- Minimum air flow rate: To BS EN 12056-2.
- Manufacturer: Contractor's choice.  
Product reference: Contractor's choice.

**380 GREASE TRAPS AND CONVERTERS**

- Standards: In accordance with BS EN 1825-1 and to BS EN 1825-2 and Kitemark or Agrément certified.
- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.
- Accessories: As required to complete design.

**385 MASKING PLATES**

- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.

- Material and finish: Plastics, self finish.  
Fixing: Raised head screws.
- 390 RODDING EYES INTERNALLY
- Manufacturer: Contractor's choice.
    - Product reference: Contractor's choice.
  - Body material: PVC-U.
  - Cover type: Flush.  
Cover material: PVC-U.
- FABRICATION**
- EXECUTION**
- 601 INSTALLATION GENERALLY
- Standard: To BS EN 12056-5.
  - Components: From the same manufacturer for each type of pipework.
  - Electrolytic corrosion: Avoid contact between dissimilar metals where corrosion may occur.
  - Plastics and galvanized steel pipes: Do not bend.
  - Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
  - Concealed or inaccessible surfaces: Decorate before starting work specified in this section.
  - Protection:
    - Purpose made temporary caps: Fit to prevent ingress of debris.
- 605 PIPE ROUTES
- General: The shortest practical, with as few bends as possible.
    - Bends in wet portion of soil stacks: Not permitted.
  - Routes not shown on drawings: Submit proposals before commencing work.
- 610 FIXING PIPEWORK
- Pipework: Fix securely plumb and/ or true to line. Fix discharge stack pipes at or close below socket collar or coupling.
  - Branches and low gradient sections: Fix with uniform and adequate falls to drain efficiently.
  - Externally socketed pipes and fittings: Fix with sockets facing upstream.
  - Additional supports: Provide as necessary to support junctions and changes in direction.
  - Vertical pipes: Provide a load bearing support not less than every storey level. Tighten fixings as work proceeds so that every storey is self supporting.
  - Wall and floor penetrations: Isolate pipework from structure, e.g. with pipe sleeves.
    - Masking plates: Fix at penetrations if visible in the finished work.
  - Expansion joint sockets: Fix rigidly to the building.
- 615 FIXING VERTICAL PIPEWORK- PVC-U
- Bracket fixings: Screwed into studs or floor joists.  
Distance between bracket fixing centres (maximum): As manufacturer's requirements.
- 620 FIXING LOW GRADIENT PIPEWORK- PVC-U
- Bracket fixings: Screwed into studs or floor joists.  
Distance between bracket fixing centres (maximum): As manufacturer's requirements.
- 630 JOINTING PIPEWORK - GENERALLY
- General: Joint with materials, fittings and techniques that will make effective and durable connections.
  - Jointing differing pipework systems: With adaptors intended for the purpose.
  - Cut ends of pipes: Clean and square. Remove burrs and swarf. Chamfer pipe ends before inserting into ring seal sockets.
  - Jointing or mating surfaces: Clean and, where necessary, lubricate immediately before assembly.

- Junctions: Form with fittings intended for the purpose.
- Jointing material: Do not allow it to project into bore of pipes and fittings.  
Surplus flux, solvent jointing materials and cement: Remove from joints.

660 JOINTING PIPEWORK - ABS, MUPVC, PVC-C AND PVC-U  
Jointing: Proprietary Jointing System.

695 DISCHARGE AND VENTILATING STACKS

- Terminations: Perforated cover or cage that does not restrict airflow.  
Material: Plastics, as discharge stack.

700 INSTALLING AIR ADMITTANCE VALVES

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

705 ACCESS FOR TESTING AND MAINTENANCE

- General: Install pipework with adequate clearance to permit testing, cleaning and maintenance, including painting where necessary.  
Access fittings and rodding eyes: Position to avoid obstruction.

### COMPLETION

900 TESTING GENERALLY

- Dates for testing: Give notice.
    - Period of notice (minimum): 2 working days.
  - Preparation:
    - Pipework: Securely fixed and free from obstruction and debris.
    - Traps: Filled with clean water.
  - Testing:
    - Supply clean water, assistance and apparatus.
    - Do not use smoke to trace leaks.
- Records: Submit a record of tests.

905 PIPEWORK AIRTIGHTNESS TEST

- Preparation:
  - Open ends of pipework: Temporarily seal using plugs.
  - Test apparatus: Connect a 'U' tube water gauge and air pump to pipework via a plug

or

through trap of an appliance.

- Testing: Pump air into pipework until gauge registers 38 mm.
- Required performance: Pressure of 38 mm is to be maintained without loss for at least three minutes.

910 SIPHONAGE AND BACK PRESSURE TESTS

- Method:
    - WC pans: Test by flushing.
    - Other appliances: Test by filling to overflow level, then removing the plug.
  - Number of tests: Test each appliance three times. Recharge traps before each test.
  - Self siphonage testing: Test each appliance individually.
  - Induced siphonage and back pressure testing: Test by discharging the following numbers of appliances simultaneously on each stack:
    - WCs: All.
    - Washbasins: All.
    - Sinks: All.
- Selection of appliances: Submit proposals.

915 PREHANDOVER CHECKS

- Temporary caps: Remove.
- Permanent blanking caps, access covers, rodding eyes, floor gratings and the like: Secure complete with fixings.

920 SUBMITTALS

Manufacturer's instructions for grease traps: Handover at completion.

**R12 BELOW GROUND DRAINAGE SYSTEMS****GENERAL****110 BELOW GROUND DRAINAGE SYSTEMS**

- Surface water and rainwater drainage sources: Submit proposals.
- Foul drainage sources: Submit proposals.
- Land drainage sources: None .
- Pressure relief drainage sources: None .
- Pipes, bends and junctions: PVC-U - plain wall.
  - Accessories: Rodding points and Warning marker tapes.
- Manholes, inspection chambers, traps, and separators: Submit proposals .
  - Accessories: Submit proposals .
- Disposal: To septic tank units, as section R17 and To soakaways, as section R17.
  - Accessories – general: Submit proposals .

**120 SOAKAWAY SYSTEMS – PRECAST CONCRETE RAINWATER DRAINAGE**

- Rainwater drainage sources: Below ground rainwater pipelines.
- Foul drainage sources: None.
- Soakaway units: As section R17.
  - Accessories: Access covers and frames .

**SYSTEM PERFORMANCE****211 DESIGN – BELOW GROUND DRAINAGE SYSTEMS**

- Design: Complete the design of the below ground drainage system in accordance with BS EN 752-1, -2, -3 and -4, BS EN 1295-1 and BS EN 1610.
- Ground conditions: Clay, sandy clay - stiff.
- Performance criteria: .
- Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

**221 DESIGN - SOAKAWAY SYSTEMS**

- Design: Complete the design of the soakaway system in accordance with BRE Digest 365b.
- Ground conditions: Clay, sandy clay - stiff.
- Required percolation rate: 50 L/s.
- Design life of system: 60 years.
- Proposals: Submit drawings, technical information, calculations and manufacturers' literature.
  - Maintenance requirements: Submit details.

**PRODUCTS****311 CONNECTORS - WASTE PIPES TO PLASTICS DRAINAGE**

- Material and standard: Plastics to BS 4660 and Kitemark certified.
- Type: To suit above ground drainage sizes.
- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.

**329 PIPES, BENDS AND JUNCTIONS - SUPPLY**

Pipes and fittings: From same manufacturer for each pipeline.

**346 PIPES, BENDS AND JUNCTIONS - PVC-U - PLAIN WALL - FOUL AND SURFACE WATER DRAINAGE**

- Standard: BS EN 1401-1, class SN4, with flexible joints, Kitemark certified.
- Manufacturer: Submit proposals.
  - Product reference: Submit proposals.
- Recycled content: None permitted.
- Sizes: DN 100.

Application area code: UD.

- 483 CONCRETE (GENERAL)
- Standard: To BS 8500-2.
  - Concrete: Designated, GEN1.

- 485 CONCRETE (STRUCTURAL)
- Standard: To BS 8500-2.
  - Concrete: Designated, FND2.

### EXECUTION

- 611 EXISTING DRAINS
- Setting out: Before starting work, check invert levels and positions of existing drains, sewers, inspection chambers and manholes against drawings. Report discrepancies.
  - Protection: Protect existing drains to be retained and maintain normal operation if in use.
- 613 EXCAVATED MATERIAL
- Turf, topsoil, hardcore, etc: Set aside for use in reinstatement.
- 616 SELECTED FILL FOR BACKFILLING
- Selected fill: As-dug material, free from vegetable matter, rubbish, frozen soil and material retained on a 40 mm sieve.
  - Compaction: By hand in 100 mm layers.
- 623 LOWER PART OF TRENCH – GENERAL
- Trench up to 300 mm above crown of pipe: Vertical sides, width as small as practicable.
  - Width (minimum): External diameter of pipe plus 300 mm.
- 625 LOWER PART OF TRENCH - TRANSITION DEPTH
- Trench widths up to 300 mm above crown of pipe (maximum):
    - DN 100 pipelines more than 6.0 m deep: 600 mm.
    - DN 150 pipelines more than 5.4 m deep: 700 mm.
    - DN 225 pipelines more than 4.0 m deep: 800 mm.
    - DN 300 pipelines more than 2.9 m deep: 900 mm.
- 631 TYPE OF SUBSOIL
- General: Where type of subsoil at level of crown of pipe differs from that stated for the type of bedding, surround or support, give notice.
- 635 FORMATION FOR BEDDINGS
- Timing: Excavate to formation immediately before laying beddings or pipes.
  - Mud, rock projections, boulders and hard spots: Remove. Replace with consolidated bedding material.
  - Local soft spots: Harden by tamping in bedding material.
  - Inspection of excavated formations: Give notice.
- 641 PIPES AT DIFFERENT LEVELS IN COMMON TRENCH
- Subtrench: Permissible provided soil of step is stable and unlikely to break away.
    - Subtrench not permissible: Trench depth as required for lower pipe. Increase thickness of bedding to upper pipe as necessary.
  - Lower pipe: Backfill with compacted granular material to at least half way up higher pipe.
  - Clear horizontal distance between pipes (minimum):
    - Pipes up to DN 700: 350 mm.
    - Pipes exceeding DN 700: 500 mm.
- 661 CLASS O SUPPORT
- Type of subsoil: Clay, sandy clay - stiff.
  - Granular material:

- Pipe sizes DN 100 and DN 150: Size 4/10.
- Pipe sizes DN 225 and DN 300: Size 4/10 or 10/20.
- Bedding:
  - Material: Granular, compacted over full width of trench.
  - Thickness (minimum): 100 mm.
- Pipes: Dig slightly into bedding, rest uniformly on barrels and adjust to line and gradient.
- Initial testing before placing support: Required.
- Support:
  - Material: Granular.
  - Depth: To slightly above crown of pipe.
  - Compaction: By hand.
- Backfilling:
  - Material and depth:  
Protective cushion of selected fill to 300 mm above crown of pipe; or  
Additional granular material, to 100 mm above crown of pipe.  
Compaction: By hand in 100 mm layers.

**663 CLASS P SUPPORT**

- Type of subsoil: Clay, sandy clay - stiff.
- Granular material:
  - Pipe sizes DN 100 and DN 150: Size 4/10.
  - Pipe sizes DN 225 and DN 300: Size 4/10, 10/20 or 4/20.
- Bedding:
  - Material: Granular, compacted over full width of trench.
  - Thickness (minimum): 100 mm.
- Pipes: Dig slightly into bedding, rest uniformly on barrels and adjust to line and gradient.
- Initial testing before placing support: Required.
- Support:
  - Material: Granular.
  - Depth: To slightly above crown of pipe.
  - Compaction: By hand.
- Backfilling:
  - Material and depth:  
Protective cushion of selected fill to 300 mm above crown of pipe; or  
Additional granular material, to 100 mm above crown of pipe.  
Compaction: By hand in 100 mm layers.

**665 CLASS Q SURROUND**

- Type of subsoil: Clay, sandy clay - stiff.
- Granular material:
  - Pipe sizes DN 100 and DN 150: Size 4/10.
  - Pipe sizes DN 225 and DN 300: Size 4/10, 10/20 or 4/20.
- Bedding:
  - Material: Granular, compacted over full width of trench.
  - Thickness (minimum): 100 mm.
- Pipes: Dig slightly into bedding, rest uniformly on barrels and adjust to line and gradient.
- Initial testing before placing support: Required.
- Surround:
  - Material: Granular.
  - Depth (minimum): To 75 mm above crown of pipe.
  - Compaction: By hand.
- Flexible filler:
  - Material: As building regulations.
  - Laying: Continuously over completed surround before laying protection slabs.
- Protection slabs:
  - Material: Concrete (general).  
Type: Reinforced.
  - Thickness: 75 mm.
  - Reinforcement: A193.
  - Minimum bearing: 300 mm.

Backfilling: Soil or topsoil, as appropriate.

669 CLASS T SURROUND

- Type of subsoil: Clay, sandy clay - stiff.
- Granular material:
  - Pipe sizes DN 100 and DN 150: Size 4/10.
  - Pipe sizes DN 225 and DN 300: Size 4/10, 10/20 or 4/20.
- Bedding:
  - Material: Granular, compacted over full width of trench.
  - Thickness (minimum): 100 mm.
- Pipes: Dig slightly into bedding, rest uniformly on barrels and adjust to line and gradient.
- Initial testing before placing surround: Required.
- Surround:
  - Material: Granular.
  - Depth: To 100 mm above crown of pipe.Compaction: By hand.

671 CLASS V SURROUND

- Type of subsoil: Clay, sandy clay - stiff.
- Granular material:
  - Pipe sizes DN 100 and DN 150: Size 4/10.
  - Pipe sizes DN 225 and DN 300: Size 4/10, 10/20 or 4/20.
- Width of trench (minimum): External diameter of pipe plus 600 mm.
- Bedding:
  - Material: Granular, compacted over full width of trench.
  - Thickness (minimum): 200 mm.
- Pipes: Dig slightly into bedding, rest uniformly on barrels and adjust to line and gradient.
- Initial testing before placing surround: Required.
- Surround:
  - Material: Granular.
  - Depth: To 150 mm above crown of pipe.Compaction: By hand.

673 CLASS W SURROUND

- Type of subsoil: Clay, sandy clay - stiff.
- Timing: Excavate trench after hardcore has been laid and compacted.
- Granular material:
  - Pipe sizes DN 100 and DN 150: Size 4/10.
  - Pipe sizes DN 225 and DN 300: Size 4/10 or 10/20.
- Bedding:
  - Material: Granular, compacted over full width of trench.
  - Thickness (minimum): 100 mm.
- Pipes: Dig slightly into bedding, rest uniformly on barrels and adjust to line and gradient.
- Initial testing before placing surround: Required.
- Surround:
  - Material: Granular.
  - Depth: To 100 mm above crown of pipe.
  - Compaction: By hand.
- Backfilling:
  - Material: Hardcore as section D20, or granular.
  - Depth: Up to slab formation.Compaction: In 300 mm (maximum) thick layers.

676 CLASS Y SURROUND

- Type of subsoil: Clay, sandy clay - stiff.
- Timing: Excavate trench after hardcore has been laid and compacted.
- Blinding:
  - Material: Concrete (general).
  - Thickness (minimum): 25 mm.

- Width: Full width of trench.
- Allow to set before proceeding.
- Pipes:
  - Temporary support: Folding wedges of compressible board. Prevent flotation.
  - Clearance under pipes (minimum): 100 mm.
  - Adjust pipes to line and gradient.
- Initial testing before placing surround: Required.
- Surround, cast integrally with slab:
  - Material: Concrete of same mix as slab.
  - Width (minimum): External diameter of pipe plus 200 mm.
 Extent of surround: To within 150 mm of nearest flexible joint.

#### 678 CLASS Z SURROUND

- Type of subsoil: Clay, sandy clay - stiff.
- Blinding:
  - Material: Concrete (general).
  - Thickness (minimum): 25 mm.
  - Width: Full width of trench.
  - Allow to set before proceeding.
- Pipes:
  - Temporary support: Folding wedges of compressible board. Prevent flotation.
  - Clearance under pipes (minimum): 100 mm.
  - Adjust pipes to line and gradient.
- Initial testing before placing surround: Required.
- Surround:
  - Material: Concrete (structural).
  - Depth: To 150 mm above crown of pipe.
  - Width: Full width of trench.
- Vertical construction joints:
  - Location: At face of flexible pipe joints.
  - Material: 18 mm thick compressible board precut to profile of pipe.
  - Socketed pipes: Fill gaps between spigots and sockets with resilient material to prevent entry of concrete.

#### 680 CONCRETE SURROUND FOR PIPE RUNS NEAR FOUNDATIONS

- Class Z surround: Provide in locations where bottom of trench is lower than bottom of foundation and as follows (horizontal clear distance between nearest edges of foundations and pipe trenches):
  - Trenches less than 1 m from foundations: Top of concrete surround not lower than bottom of foundation.
  - Trenches more than 1 m from foundations: Top of concrete surround not lower than D mm below bottom of foundation, where D mm is horizontal distance of trench from foundation, less 150 mm.

#### 683 LAYING PIPELINES

- Laying pipes: To true line and regular gradient on even bed for full length of barrel with sockets (if any) facing up the gradient.
- Ingress of debris: Seal exposed ends during construction.
  - Timing: Minimize time between laying and testing.

#### 685 JOINTING PIPELINES

- Connections: Durable, effective and free from leakage.
- Junctions, including to differing pipework systems: With adaptors intended for the purpose.
- Cut ends of pipes: Clean and square. Remove burrs and swarf. Chamfer pipe ends before inserting into ring seal sockets.
- Jointing or mating surfaces: Clean and, where necessary, lubricate immediately before assembly.
- Allowance for movement: Provide and maintain appropriate clearance at ends of spigots as fixing and jointing proceeds.

Jointing material: Do not allow to project into bore of pipes and fittings.

#### 689 PIPELINES PASSING THROUGH STRUCTURES

- Pipelines that must be cast in or fixed to structures (including manholes, catchpits and inspection chambers): Provide 600 mm long rocker pipes adjacent to the external face of the structure (or both faces where appropriate, e.g. walls to footings), with flexible joints at both ends.
  - Distance to rocker pipe from structure (maximum): 150 mm.
- Provision for movement for pipelines that need not be cast in or fixed to structures (e.g. walls to footings):
  - Rocker pipes as specified above; or
  - Openings in the structures to give 50 mm minimum clearance around the pipeline. Closely fit a rigid sheet to each side of opening to prevent ingress of fill or vermin.

#### 691 BENDS AT BASE OF SOIL STACKS

- Type: Nominal 90° rest bends.
  - Radius to centreline of pipe (minimum): 200 mm.
- Height of invert of horizontal drain at base of stack below centreline of lowest branch pipe (minimum): 450 mm.
- Bedding: Do not impair flexibility of pipe couplings.  
Material: Concrete (general).

#### 695 BACKDROP PIPES OUTSIDE MANHOLE WALLS

- Excavation beneath backdrop pipe: Backfill.
  - Material: Concrete (general).
- Pipe encasement:
  - Material: Concrete (general).
  - Thickness (minimum): 150 mm.

#### 697 INSTALLING FLEXIBLE COUPLINGS

- Ends of pipes to be joined: Cut cleanly and square.
- Outer surfaces of pipes to be joined: Clean and smooth. Where necessary, e.g. on concrete or iron pipes, smooth out mould lines and/ or apply a cement grout over the sealing area.  
Clamping bands: Tighten carefully to make gastight and watertight seals.

#### 705 INITIAL TESTING OF PIPELINES

- Before testing:
  - Cement mortar jointing: Leave 24 h.
  - Solvent welded pipelines: Leave 1 h.
- Method: Block open ends of pipelines to be tested and pressurise. Air test short lengths to BS EN 1610.

#### 711 TRENCH SUPPORTS

- Removal of trench supports and other obstacles: Sufficient to permit compacted filling of all spaces.

#### 715 BACKFILLING TO PIPELINES

- Backfilling above top of surround or protective cushion: Material excavated from trench, compacted in layers 300 mm (maximum) thick.  
Heavy compactors: Do not use before there is 600 mm (total) of material over pipes.

#### 718 BACKFILLING OVER CONCRETE

- Minimum times from placing concrete:
  - Backfilling generally: 24 h.
  - Heavy compactors and traffic loads: 72 h.

#### 720 BACKFILLING UNDER ROADS AND PAVINGS

- Backfilling from top of surround or protective cushion up to formation level: Granular sub-base material, laid and compacted in 150 mm layers.

- 722 PUBLIC ROADS AND PAVINGS – E&W, SCOT
- Excavating and backfilling of trenches: To Department for Transport 'Specification for the reinstatement of openings in highways'.
- 724 PUBLIC ROADS AND PAVINGS - NI
- Excavating and backfilling of trenches: To Northern Ireland Road Authority and Utilities Committee 'Specification for the reinstatement of openings in highways'.
- 726 FOAMED CONCRETE BACKFILL
- Preparation: Seal off openings in, and ends of, abandoned pipelines and ducts. Seal off cavities in or next to the excavation which are not to be filled.
  - Backfilling: To British Cement Association 'Foamed concrete - specification for use in the reinstatement of openings in highways'.
- 728 LAYING WARNING MARKER TAPES
- Installation: During backfilling, lay continuously over pipelines.
  - Depth: 300-400 mm.
- 732 TEMPORARY BRIDGES
- Trench bridges: As necessary to prevent construction traffic damaging pipes after backfilling.
- 757 LAYING CONVENTIONAL CHANNELS, BRANCHES AND BENCHING
- Main channel: Bed solid in 1:3 cement:sand mortar.
    - Branches: Connect to channel, preferably at half pipe level, so that discharge flows smoothly in direction of main flow.
    - Branches greater than nominal size 150 mm: Connect the branch soffit level with the main drain soffit.
    - Connecting angles more than 45° to direction of flow: Use three-quarter section channel bends.
  - Benching:
    - Material: Concrete (general).
    - Profile: Rise vertically from top of main channel to a level not lower than soffit of outlet pipe, then slope upwards at 10% to walls.
    - Topping:
      - Material: Concrete (structural).
      - Application: Before benching concrete has set, and with dense smooth uniform finish.
- 759 LAYING PREFORMED PLASTICS CHANNELS, BRANCHES AND BENCHING
- Main channel: Bed solid in 1:3 cement:sand mortar.
    - Branches: Connect to channel, preferably at half pipe level, so that discharge flows smoothly in direction of main flow.
    - Connecting angles more than 45° to direction of flow: Use three-quarter section channel bends.
  - Bedding: 1:3 cement:sand mortar. Use clips or ensure adequate mechanical key.
  - Benching:
    - Material: Concrete (general).
    - Profile: Rise vertically from top of main channel to a level not lower than soffit of outlet pipe, then slope upwards at 10% to walls.
    - Topping:
      - Material: Concrete (structural).
      - Application: Before benching concrete has set, and with dense smooth uniform finish.
- 773 INSTALLING ACCESS COVERS AND FRAMES
- Seating: Brickwork as section F10.
  - Bedding and haunching of frames: Continuously.
    - Material: 1:3 cement:sand mortar.

- Top of haunching: 30 mm below surrounding surfaces.
  - Horizontal positioning of frames:
    - Centred over openings.
    - Square with joints in surrounding paving.
  - Vertical positioning of frames:
    - Level; or
    - Marry in with levels of surrounding paving.
- Permissible deviation in level of external covers and frames: +0 to -6 mm.
- 776 EXPOSED OPENINGS IN INSPECTION CHAMBERS, ACCESS POINTS, FITTINGS AND EQUIPMENT  
General: Fit purpose made temporary caps. Protect from site traffic.
- COMPLETION**
- 901 REMOVAL OF DEBRIS AND CLEANING
- Preparation: Lift covers to manholes, inspection chambers and access points. Remove mortar droppings, debris and loose wrappings.
    - Timing: Before cleaning, final testing, CCTV inspection if specified, and immediately before handover.
  - Cleaning: Thoroughly flush pipelines with water to remove silt and check for blockages. Rod pipelines between access points if there is any indication that they may be obstructed.
  - Washings and detritus: Do not discharge into sewers or watercourses.
    - Covers: Securely replace after cleaning and testing.
- 911 TESTING AND INSPECTION
- Dates for testing and inspection: Give notice.
    - Period of notice: 5 working days.
- 921 FINAL TESTING OF PRIVATE GRAVITY DRAINS AND SEWERS UP TO DN 300
- Before testing:
    - Cement mortar jointing: Leave 24 h.
    - Solvent welded pipelines: Leave 1 h.
  - Standard: To Building Regulations.
    - Method: Contractor's choice.
- 941 WATER TESTING OF MANHOLES AND INSPECTION CHAMBERS
- Timing: Before backfilling.
  - Standard:
    - Exfiltration: To BS EN 1610.
    - Method: Testing with water (method W).
      - Infiltration: No identifiable flow of water penetrating the chamber.
- 978 LIFTING KEYS
- Lifting keys: Supply suitable keys for each type of access cover.
    - Timing: At completion.
- 980 INSTRUCTIONS
- Manufacturer's user instructions: submit for grease traps and converters.

**Z20 FIXINGS AND ADHESIVES****PRODUCTS****310 FASTENERS GENERALLY**

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

**320 PACKINGS**

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

**330 NAILED TIMBER FASTENERS**

- Nails:
  - Steel: To BS 1202-1 or BS EN 10230-1.
  - Copper: To BS EN 1202-2.
  - Aluminium: To BS 1202-3.

**340 MASONRY FIXINGS**

- Light duty: Plugs and screws.
- Heavy duty: Expansion anchors or chemical anchors.

**350 PLUGS**

- Type: Proprietary types to suit substrate, loads to be supported and conditions expected in use.

**360 ANCHORS**

- Types:
  - Expansion: For use in substrate strong enough to resist forces generated by expansion of anchor.
  - Adhesive or chemical:
    - For use in substrate where expansion of anchor would fracture substrate.
    - For use in irregular substrate where expansion anchors cannot transfer load on anchor.
  - Cavity: For use where the anchor is retained by toggles of the plug locking onto the inside face of the cavity.

**370 WOOD SCREWS**

- Type:
  - Wood screws (traditional pattern).
    - Standard: To BS 1210.
  - Wood screws.
    - Pattern: Parallel, fully threaded shank or twin thread types.
- Washers and screw cups: Where required are to be of same material as screw.

**380 MISCELLANEOUS SCREWS**

- Type: To suit the fixing requirement of the components and substrate.
  - Pattern: Self-tapping, metallic drive screws, or power driven screws.
- Washers and screw cups: Where required to be of same material as screw.

**390 ADHESIVES GENERALLY**

- Standards:
  - Hot-setting phenolic and aminoplastic: To BS 1203.
  - Thermosetting wood adhesives: To BS EN 12765.
  - Polyvinyl acetate thermoplastic adhesive: To BS 4071.

**410 POWDER ACTUATED FIXING SYSTEMS**

- Types of fastener, accessories and consumables: As recommended by tool manufacturer.

**EXECUTION**

- 610 **FIXING GENERALLY**
- Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support.
  - Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers/sleeves to avoid bimetallic corrosion.  
Appearance: Fixings to be in straight lines at regular centres.
- 620 **FIXING THROUGH FINISHES**
- Penetration of fasteners and plugs into substrate: To achieve a secure fixing.
- 630 **FIXING PACKINGS**
- Function: To take up tolerances and prevent distortion of materials and components.
  - Limits: Do not use packings beyond thicknesses recommended by fixings and fasteners manufacturer.  
Locations: Not within zones to be filled with sealant.
- 640 **FIXING CRAMPS**
- Cramp positions: Maximum 150 mm from each end of frame sections and at 600 mm maximum centres.
  - Fasteners: Fix cramps to frames with screws of same material as cramps.  
Fixings in masonry work: Fully bed in mortar.
- 650 **NAILED TIMBER FIXING**
- Penetration: Drive fully in without splitting or crushing timber.
  - Surfaces visible in completed work: Punch nail heads below wrot surfaces.  
Nailed timber joints: Two nails per joint (minimum), opposed skew driven.
- 660 **SCREW FIXING**
- Finished level of countersunk screw heads:
    - Exposed: Flush with timber surface.
    - Concealed (holes filled or stopped): Sink minimum 2 mm below surface.
- 670 **PELLETED COUNTERSUNK SCREW FIXING**
- Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
  - Pellets: Cut from matching timber, match grain and glue in to full depth of hole.  
Finished level of pellets: Flush with surface.
- 680 **PLUGGED COUNTERSUNK SCREW FIXING**
- Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
  - Plugs: Glue in to full depth of hole.  
Finished level of plugs: Projecting above surface.
- 690 **USING POWDER ACTUATED FIXING SYSTEMS**
- Powder actuated fixing tools: To BS 4078-2 and Kitemark certified.  
Operatives: Trained and certified as competent by tool manufacturer.
- 700 **APPLYING ADHESIVES**
- Surfaces: Clean. Adjust regularity and texture to suit bonding and gap filling characteristics of adhesive.
  - Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.  
Finished adhesive joints: Fully bonded. Free of surplus adhesive.

**Z21 MORTARS****CEMENT GAUGED MORTARS FOR NEW CAVITY WALL BLOCKWORK CONSTRUCTION ONLY**

- 110 MIX PROPORTIONS FOR CEMENT GAUGED MORTARS and other particular requirements are specified elsewhere.
- 120 SAND FOR CEMENT GAUGED MORTARS:
- To BS 1200 unless specified otherwise.
  - Sand for facework mortar to be from one source, different loads to be mixed if necessary to ensure consistency of colour and texture.
  - When a range is specified (e.g. 1:1:5-6) use lower proportion of sand for Grade G sands and higher proportion for Grade S.
- 131 READY-MIXED LIME:SAND FOR CEMENT GAUGED MORTARS:
- Unless specified otherwise, use ready-mixed lime:sand to BS 4721.
  - Coloured mortar, where required, to be made using a proprietary coloured ready-mixed lime:sand, colour to approval where not specified.
- 160 CEMENT FOR MORTAR: When not specified otherwise, to be Portland cement or Portland blastfurnace cement, to class 42.5 or 52.5, manufactured and supplied under the BSI Kitemark scheme for cement. All cements must comply with the appropriate British Standard.
- 180 ADMIXTURES: Do not use in mortar unless specified or approved. Do not use calcium chloride or any admixtures containing calcium chloride. Admixtures, if specified, to be to BS 4887.
- 200 SITE STORAGE OF CEMENT GAUGED MORTAR MATERIALS:
- Store different sands and aggregates in different stockpiles on hard clean bases that allow free drainage.
  - Store factory produced premixed lime:sand for mortars and ready-to-use retarded mortars in covered containers to prevent excessive drying out or wetting.
  - Store bags of cement and hydrated lime in dry conditions, raised off the ground and not touching damp surfaces. Do not use cement or hydrated lime affected by damp.
  - Avoid intermixing and contamination between stored materials and other building materials, debris or other deleterious matter.
- 210 MAKING CEMENT GAUGED MORTAR:
- Keep plant and banker boards clean at all times.
  - Measure materials accurately by volume using clean gauge boxes or clean, undamaged buckets. Proportions of mixes are for dry sand; allow for bulking if sand is damp.
  - Mix ingredients thoroughly to a consistency suitable for the work and free from lumps. Mix mortars containing air entraining admixtures by machine, but do not overmix.
  - Do not mix mortar when the air temperature is at or below 3 degC and falling or below 1 degC and rising.
  - Use mortar within about two hours of mixing at normal temperatures. Use retarded mortar within the time and site temperatures recommended by the manufacturer. Mortar may be retempered to restore workability, but only within these time limits.

**LIME:SAND MORTARS**

- 310 LIME:SAND MORTAR MIXES
- Specification: Proportions and additional requirements for mortar materials are specified elsewhere.
- 320 SAND FOR LIME:SAND MASONRY MORTARS
- Type: Sharp, well graded.
    - Quality, sampling and testing: To BS EN 13139.

Grading/ Source: As specified elsewhere in relevant mortar mix items.

- 320A SAND FOR LIME:SAND MASONRY MORTARS
- Type: Clean washed very sharp, free from loam and other impurities. Colour should be correct for mortar colour matching with adjacent mortar, colour and texture to be matched to approved sample in-situ.
    - Quality, sampling and testing: To BS EN 13139.
    - Grading/ Source: The sand should be sharp sand with no more than 10-15% passing a 300micron sieve.
- Sand for facework mortar to be from one source.
- 330 READY PREPARED LIME PUTTY
- Type: Slaked directly from CL 90 quicklime to BS 890, using an excess of water.
    - Maturation: In pits/ containers that allow excess water to drain away.
    - Density of matured lime putty: 1.3 - 1.4 kg/litre.
- Maturation period before use (minimum): Not less than 3 months after slaking.
- 340A POZZOLANIC ADDITIVES FOR NONHYDRAULIC LIME:SAND MORTARS
- Type: Brick dust
- Proportions: less than 1000 microns. Colour to be suitable for final mortar.  
Mixing: Mix thoroughly into mortar during knocking up.
- 345A ADMIXTURES FOR HYDRAULIC LIME:SAND MORTARS
- Do not use in mortar unless specified or approved.
  - Prohibited admixtures: Calcium chloride (chalk dust), ethylene glycol and any admixture containing calcium chloride.
- 350 STORAGE OF LIME:SAND MORTAR MATERIALS
- Sands and aggregates: Keep different types/ grades in separate stockpiles on hard, clean, free-draining bases.
  - Ready prepared nonhydraulic lime putty: Prevent drying out and protect from frost.
  - Nonhydraulic lime:sand mortar: Store on clean bases or in clean containers that allow free drainage. Prevent drying out or wetting and protect from frost.
- Bagged hydrated hydraulic lime: Store off the ground in dry conditions.
- 360A MAKING LIME:SAND MORTARS GENERALLY
- Use operatives who are skilled and experienced in the making and use of lime:sand mortars.
    - Provide evidence of their experience to the CA on request.
  - Batching: By volume. Use clean and accurate gauge boxes or buckets.
  - Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
  - Contamination: Keep plant and banker boards clean at all times. Avoid contamination of lime:sand mortar by other materials or by any set material (including Portland cement).
  - Do not mix mortar when air temperature is at or below 5°C and falling or below 3°C and rising.
- 390 KNOCKING UP NONHYDRAULIC LIME:SAND MORTARS
- Knocking up before and during use: Achieve and maintain a workable consistency by compressing, beating and chopping. Do not add water.
    - Equipment: Roller pan mixer or submit proposals.
- 400 MAKING HYDRAULIC LIME:SAND MORTARS
- Mixing hydrated hydraulic lime:sand: Follow the lime manufacturer's recommendations for each stage of the mix.
    - Water quantity: Only sufficient to produce a workable mix.
  - Working time: Within limits recommended by the hydraulic lime manufacturer.

#### 4.0 SCHEDULE OF WORKS FOR FIRE DAMAGE

##### 4.1 General Note

4.1.1 The following Schedule of Works has been separated into two separate projects for pricing:

- Section 4.0: Schedule of Works for Fire Damage;
- Section 5.0: Schedule of Works for Fire Damage and Additional Alterations;
- Section 6.0 & 6.1: two Collection Pages are to be completed to enable the Loss Adjusters to differentiate between the works associated with the Fire Damage and those Additional Works requested by the Client.

##### 4.2 Preliminaries

4.2.1 Allow for site set up, including welfare facilities and adequate security to the building and contractor's compound, the location of which is to be agreed with the Client within the footprint of the building and removal on completion of the project.

4.2.2 All dimensions are approximate and must be checked on site to the satisfaction of the contractor prior to pricing, where the contractor actual quantities to exceed those stated herein, the increase quantity must be stated by the contractor and priced.

4.2.3 All items to be read in conjunction with the drawings.

##### 4.3 Scaffolding

4.3.1 Allow for scaffolding and all plant necessary to carry out the works through to completion. This is required to enable the works to the roof and external elevations.

4.3.2 The property's boundary is the south end wall, and the adjacent passageway is vehicle access to the Police Station. This access will need to be retained and kept clear at all times during the works.

4.3.3 The adjacent disabled parking bay in front of the Police Station will also need to be retained as it will be in use during the works.

4.3.4 The height of the first lift of the scaffolding is to provide a minimum of 3.4m to permit vehicle access under.

4.3.5 It will be necessary to liaise with Andy Clarkson, of Rochford Police Station, in order to safely erect the scaffolding to suit the requirements of the contract.

4.3.6 It has been agreed in principle that the 1.2m strip of unused space between the Police Station and the perimeter wall can be utilised for scaffolding, and the contractor will need to provide a proposed scaffold arrangement along with statements, proposed sequence of works, and risk assessments in accordance with CDM Regulations to ensure the safety of the workmen, the Police Officers and general public who will be affected by the scaffolding within this vicinity. The contractor is to submit this information with the Tender submission to enable the scheme to be approved by Rochford Police Station, prior to appointment of contractor.

#### 4.4 Schedule of Works for fire damage

##### Room A1

4.4.1 Allow for locally removing the tiles and reinstating the patch repairs to the roof felt with a minimum lap of 150mm in 2no. locations, holes approximately 1.5m<sup>2</sup>

##### Room F1

4.4.2 To gable window, allow for replacement of glazing. Allow for easement of windows. Allow for preparation and redecoration of window.

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| 4.4.3 |   |   |
| 4.4.4 |   |   |
| 4.4.5 |   |   |
| 4.4.6 |   |   |

**Room F2**

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| 4.4.7  |  |  |
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- 4.4.23 Allow for reinstating the plain tiles to the lower section of the lean-to roof, and providing new Welsh slate tiles to the upper section of the lean-to roof.
- 4.4.24 Allow for sanding down existing floorboards and three coats of 50:50 mix white spirit and tung oil and a forth coat pure tung oil.
- 4.4.25 Allow for reinstating the skirting board along the east elevation to match that of existing, approximately 100mm high

**Stairwell**

- 4.4.26 Allow for reinstating the 5<sup>th</sup> tread and making good the lath and plaster wall to the underside of the tread within the cupboard under the stairs.
- 4.4.27 Allow for sanding down and redecoration of the risers, going and handrail with three coats of 50:50 mix white spirit and tung oil and a forth coat pure tung oil.

**Room G1**

- 4.4.28 To front elevation window, allow for replacing 1No. pane of glass. Allow for easement of window. Allow for preparation ready for redecoration, and redecoration of window.
- 4.4.29 To the side gable window, allow for easement for window. Allow for preparation ready for redecoration, and redecoration of window.
- 4.4.30 To cupboard doors either side of the fireplace, allow for preparation ready for redecoration, and redecoration of doors.
- 4.4.31 To front door, allow for preparation ready for redecoration, and redecoration of door.
- 4.4.32 To internal door, allow for preparation ready for redecoration, and redecoration of door.
- 4.4.33 To gas light over fireplace, allow for disconnecting the gas supply to the light and making safe. Gas light fitment to be retained as ornamental feature.
- 4.4.34 Allow for sanding down the floorboards and redecoration with three coats of 50:50 mix white spirit and tung oil and a forth coat pure tung oil.
- 4.4.35 Allow for carefully removing the plaster to the ceiling, Please note the ceiling is of lath and lime plaster construction, and due care must be taken not to damage the laths. Provide a Provisional Sum for replacing 60% of the timber riven oak laths.
- 4.4.36 Allow for reinstating the lime render to the ceiling.

**Room G2**

- 4.4.38 Allow for reinstating stud partition using 38x75mm studs at 600mm centres with one layer of acoustic plasterboard either side studs infilled with acoustic mineral wool.
- 4.4.39 Allow for reinstating fitted kitchen as per floor layout, on drawing 12498/01B.
- 4.4.40 Allow for disconnecting the gas supply to the gas light over the fireplace. Allow for reinstating the gas light fitment and retaining for ornamental purposes.
- 4.4.41 Allow for sanding down floorboards, and providing three coats of 50:50 mix white spirit and tung oil and a forth coat pure tung oil.
- 4.4.42 Allow for reinstating the lime render to the upper section of the chimney stack.

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| 4.4.43 To the small window on the rear elevation, allow for replacing the glazing panes. Allow for easement of window. Allow to replace the sill and one side of the frame. Allow for preparation ready for redecoration, and redecoration of window.  |   |   |
| 4.4.44 To the rear sash window, allow for preparation ready for redecoration, and redecoration of window.  |   |   |
| 4.4.45 To the side elevation window, allow for preparation ready for redecoration, and redecoration on window.   |   |   |
| 4.4.46 Allow for tiling 600mm splash back above the hand basin and bath. Contractor to source tiles, Client to approve.  |   |   |
| 4.4.47 Allow for providing 600mm tiled splash back above work surfaces. Contractor to source tiles, Client to approve.   |   |   |
| <b>4.5 Externally</b>  |   |   |
| 4.5.1 Allow for replacement of the UPVC rainwater goods and downpipes in cast iron on the rear elevation.  |   |   |
| 4.5.2 Allow for replacement of the fascia boards, inclusive of decoration on the rear elevation.   |   |   |
| 4.5.3 Allow for reinstating the weatherboard above ground floor window to underside of roof line to match existing, providing lead flashing detail at the junction of the weatherboard to the rendered wall on the side elevation.   |   |   |
| <b>4.6 Decoration</b>  |   |   |
| 4.6.1 Windows, doors (where previously decorated), skirting, and all other timber surfaces (excluding floors) to be decorated with three coats of Earthborn Pro Aqua Eggshell  |   |   |
| 4.6.2 Allow for cleaning down all internal wall surfaces and redecoration three coats of Earthborn Emulsion paintwork. Colour to match existing unless noted otherwise.  |   |   |
| 4.6.3 <b>Please note that the internal partition wall between the front and rear rooms, at both and ground first floor is of lath and lime construction. Due care and attention should be given to ensure that there is no damage to the original historic plasterwork.</b>  |   |   |
| 4.6.4 Allow for redecoration of all ceilings with three coats of Earthborn Emulsion paint.   |   |   |
| 4.6.5 Allow for cleaning down and redecoration of the rear east elevation with lime wash 5 coats, (24 hours between coats)   |   |   |
| 4.6.6 Room F1 Colour Specifications<br>Walls – Lime Blossom Earthborn Emulsion<br>Window Frame & Cill – Bandstand Pro Aqua Eggshell<br>Ceiling – White Earthborn Emulsion<br>Windows – White Pro Aqua Eggshell<br>Floors – Tung Oil<br>Skirting – Bandstand Pro Aqua Eggshell<br>Door Stairwell – Tung Oil<br>Door Cupboard – Tung Oil |   |   |
| 4.6.7 Room F2 Colour Specifications<br>Walls – Blue Nigella Earthborn Emulsion<br>Ceiling – White Earthborn Emulsion<br>Floor – Tung Oil<br>Skirting – Forget-me-not Pro Aqua Eggshell   |   |   |

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Door Internal – Tung Oil		
Windows – White Pro Aqua Eggshell		
Window frame & cill – Forget-me-not Pro-Aqua Eggshell		
Coffin Hatch – Tung Oil		
<b>4.6.8 Room G1 Colour Specification</b>		
Walls – Purbeck White Earthborn Emulsion		
Ceiling – Purbeck White Earthborn Emulsion		
Floor – Tung Oil		
Skirting – White Pro Aqua Eggshell		
Door External – White Pro Aqua Eggshell		
Door Stairwell – White Pro Aqua Eggshell		
Door Cupboards – White Pro Aqua Eggshell		
Windows – White Pro Aqua Eggshell		
Windows Surround & Cill – White Pro Aqua Eggshell		
Fire Surround – White Pro Aqua Eggshell		
<b>4.6.9 Room G2 Colour Specification</b>		
Walls – Purbeck White Earthborn Emulsion		
Ceiling – Purbeck White Earthborn Emulsion		
Floor – Tung Oil		
Door Internal – Just White Pro Aqua Eggshell		
Door External – Just White Externally/ Cricket Externally Pro Aqua Eggshell		
Windows – White Pro Aqua Eggshell		
Window Surrounds/Cills – Just White Pro Aqua Eggshell		
<b>4.6.10 Rear Elevation</b>		
Render Wall – White Lime-wash		
Windows – White Pro Aqua Eggshell		
<b>4.6.11 Site Elevation</b>		
Weatherboard – Ebony Pro Aqua Eggshell		
Render – Black Lime-wash		
<b>4.6.12 Stairwell</b>		
Walls – Purbeck White Earthborn Emulsion		
Ceiling – Purbeck White Earthborn Emulsion		
Risers/goings – Tung oil		
Handrail – Tung oil		
<b>4.7 Electrics</b>		
<b>4.7.1</b> Allow for re-wiring the property in its entirety to meet current Building Regulations to include for the provision of two mechanical extractors, one within the kitchen space and one within the bathroom space.		
<b>4.7.2</b> Please note: no chasing out will be permitted to the internal partition wall between the front and rear rooms at ground or first floor level. Provide Client with clear indication of any boxing-out or surface mounted wiring that may be necessary prior to installation of services. All works to be carried out in compliance with Building Regulations. The contractor to liaise directly with Building Control and provide Building Control Officer and Client with Installation/Commissioning Certificates as appropriate.		
<b>4.7.3</b> Allow for necessary provisions for the kitchen layout as per drawing 12498/01B.		
<b>4.8 Plumbing</b>		
<b>4.8.1</b> Allow for providing new boiler and plumbing throughout to meet existing layout on drawing 12498/01B.		

- 4.8.2 Allow for installation of hot water system to suit requirements of the appliances specified. New boiler and appropriate power supply for the boiler in accordance with the requirements of the property, and in accordance with Building Regulations.
- 4.8.3 Allow for installation of all works associated with the bathroom and kitchen. Contractor is to allow for all associated fixtures and fittings and connections to the drainage system.
- 4.8.4 Allow for mechanical extraction to all bathroom and kitchen areas.
- 4.8.5 Allow for providing the Client with clear indication of any boxing out and surface mounted pipes that may be necessary prior to installation of services.
- 4.8.6 All works to be carried out in compliance with Building Regulations, provide Building Control and Client with Installation/Commissioning Certificates, as appropriate.
- 4.9 **Drawings**  
12489/01 B

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**5.0 SCHEDULE OF WORKS FOR ADDITIONAL WORKS****5.1 Preliminaries**

- 5.1.1 Allow for site set up, including welfare facilities and adequate security to the building and contractor's compound, the location of which is to be agreed with the Client within the footprint of the building and removal on completion of the project.
- 5.1.2 All dimensions are approximate and must be checked on site to the satisfaction of the contractor prior to pricing, where the contractor actual quantities to exceed those stated herein, the increase quantity must be stated by the contractor and priced.
- 5.1.3 All items to be read in conjunction with the drawings.

**5.2 Scaffolding**

- 5.2.1 Allow for scaffolding and all plant necessary to carry out the works through to completion. This is required to enable the works to the roof and external elevations.
- 5.2.2 The property's boundary is the south end wall, and the adjacent passageway is vehicle access to the Police Station. This access will need to be retained and kept clear at all times during the works.
- 5.2.3 The adjacent disabled parking bay in front of the Police Station will also need to be retained as it will be in use during the works.
- 5.2.4 The height of the first lift of the scaffolding is to provide a minimum of 3.4m to permit vehicle access under.
- 5.2.5 It will be necessary to liaise with Andy Clarkson, of Rochford Police Station, in order to safely erect the scaffolding to suit the requirements of the contract.
- 5.2.6 It has been agreed in principle that the 1.2m strip of unused space between the Police Station and the perimeter wall can be utilised for scaffolding, and the contractor will need to provide a proposed scaffold arrangement along with statements, proposed sequence of works, and risk assessments in accordance with CDM Regulations to ensure the safety of the workmen, the Police Officers and general public who will be affected by the scaffolding within this vicinity. The contractor is to submit this information with the Tender submission to enable the scheme to be approved by Rochford Police Station, prior to appointment of contractor.

**5.3 Schedule of Works for Fire Damage and Additional Alterations****Room A1**

- 5.3.1 Allow for stripping roof in its entirety, providing new breathable membrane, such as Tyvek and reinstating tiles.
- 5.3.2 Allow a provisional sum for 15% of tile breakages.
- 5.3.3 Allow for providing sheep's wool insulation between rafters.
- 5.3.4 Allow for providing one layer of plasterboard to the underside of the rafters, pinked, skimmed and decorated.
- 5.3.5 Allow for providing sheep's wool between the studs on the south gable. Allow for one layer of plasterboard to the face of the studs, pinked, skimmed and decorated.
- 5.3.6 Allow for providing 2No. layers of plasterboard with staggered joints on the north party wall, pinked, skimmed and decorated.

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**Room F1**

- 5.3.7 To gable window, allow for replacement of glazing. Allow for easement of windows. Allow for preparation and redecoration of window.
- 5.3.8 To front elevation window, allow for easement of sash. Allow for preparation ready for redecoration, and redecoration of window.
- 5.3.9 Allow for providing natural sheep's wool insulation between ceiling joists. Allow for providing new plasterboard ceiling.
- 5.3.10 Allow for sanding down and redecoration with three coats of 50:50 mix white spirit and tung oil and a forth coat pure tung oil of floorboards.
- 5.3.11 Allow for providing new loft hatch to fit existing opening and decoration of.

**Room F2**

- 5.3.12 Allow for providing 2No. new floorboards across the entire width of the room.
- 5.3.13 Allow for providing 7No. partner splice repairs to the floor joists 600mm long, section size 50x200mm.
- 5.3.14 Allow for 2No. partner splice to trimmer joists, section size 100x200mm 600mm long.
- 5.3.15 Allow for replacing the steel plate 160mm wide x 6.5mm thick which the existing joists bear onto.
- 5.3.16 Allow for replacing the wall plate in its entirety.
- 5.3.17 Allow for replacing the existing rafters from plate to purlin, and from purlin to wall plate of duo-pitched roof. Existing rafters 50x150mm at 350mm centres.
- 5.3.18 Allow for new plate above purlin 75x125mm, providing studs off the existing purlin to the underside of the plate at 350mm centres to match that of the rafters. Height varies from 75-150mm.
- 5.3.19 Allow for new ceiling joists from the internal partition wall across to the rafters 50x100mm at 350mm centres over a length of approximately 1.0m.
- 5.3.20 Allow for reinstating plasterboard at eaves level which is offset approximately 250mm from the wall plate, up to the underside of the rafters across the full width of the room and new plasterboard to the underside of the new rafters, and to the underside of the new ceiling joists.
- 5.3.21 The change in pitch of the roof slope is to be finished with a smooth curve in 3No. locations across the roof space. Allow for the plasterboard to be pinked and skimmed. Allow for making good the junctions of the new roof to the external wall and party wall.
- 5.3.22 Allow for reinstatement of the coffin hatch, and necessary easement to ensure snug fit.
- 5.3.23 Allow for sanding down and decoration with three coats 50;50 mix white spirit and tung oil and fourth coat tung oil of the hatch on both faces.
- 5.3.24 Allow for reinstating the glass to the window.
- 5.3.25 Allow for easement of the window. Allow for preparation and redecoration of the window.

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- 5.3.26 Allow for new breathable felt such as Tyvek over the rafters. Allow for new sheep's wool insulation full fill between the rafters.
- 5.3.27 Allow for reinstating the plain tiles to the lower section of the lean-to roof, and providing new Welsh slate tiles to the upper section of the lean-to roof.
- 5.3.28 Allow for sanding down existing floorboards and three coats of 50:50 mix white spirit and tung oil and a forth coat pure tung oil.
- 5.3.29 Allow for reinstating the skirting board along the east elevation to match that of existing, approximately 100mm high

**Stairwell**

- 5.3.30 Allow for reinstating the 5<sup>th</sup> tread and making good the lath and plaster wall to the underside of the tread within the cupboard under the stairs.
- 5.3.31 Allow for sanding down and redecoration of risers, goings and handrail with three coats of 50:50 mix white spirit and tung oil and a forth coat pure tung oil.

**Room G1**

- 5.3.32 To front elevation window, allow for replacing 1No. pane of glass. Allow for easement of window. Allow for preparation ready for redecoration, and redecoration of window.
- 5.3.33 To the side gable window, allow for easement for window. Allow for preparation ready for redecoration, and redecoration of window.
- 5.3.34 To cupboard doors either side of the fireplace, allow for preparation ready for redecoration, and redecoration of doors.
- 5.3.35 To front door, allow for preparation ready for redecoration, and redecoration of door.
- 5.3.36 To internal door, allow for preparation ready for redecoration, and redecoration of door.
- 5.3.37 To gas light over fireplace, allow for disconnecting the gas supply to the light and making safe. Gas light fitment to be retained as ornamental feature.
- 5.3.38 Allow for sanding down the floorboards and redecoration with three coats of 50:50 mix white spirit and tung oil and a forth coat pure tung oil.
- 5.3.39 Allow for repairing the edge board of the timber door on the partition wall between Rooms G1 and G2.
- 5.3.40 Allow for re-pointing the crack within the chimney stack over a height of 15No. courses.
- 5.3.41 Allow for replacing the bottom sill of the front door
- 5.3.42 Allow for carefully removing plaster to the ceiling, please note the ceiling is lath and plaster construction and due care must be taken not to damage laths.
- 5.3.43 Provide a provisional sum for replacing 60% timber riven oak laths.
- 5.3.44 Allow for reinstating the lime render to the ceiling.

**Room G2**

- 5.3.45 Allow for disconnecting the gas supply to the gas light over the fireplace. Allow for reinstating the gas light fitment and retaining for ornamental purposes.

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| 5.3.46 Allow for sanding down floorboards, and providing three coats of 50:50 mix white spirit and tung oil and a forth coat pure tung oil.   |   |   |
| 5.3.47 Allow for reinstating the lime render to the upper section of the chimney stack.   |   |   |
| 5.3.48 To the small window on the rear elevation, allow for replacing the glazing panes. Allow for easement of window. Allow to replace the sill and one side of the frame. Allow for preparation ready for redecoration, and redecoration of window. |   |   |
| 5.3.49 To the rear sash window, allow for preparation ready for redecoration, and redecoration of window and relocation into the rear extension.  |   |   |
| 5.3.50 To the side elevation window, allow for preparation ready for redecoration, and redecoration on window   |   |   |
| 5.3.51 Allow for new kitchen layout in accordance with drawing 12498/02A  |   |   |
| 5.3.52 Allow for splice repair to the lower 150mm section of the window frame. Allow for replacing the sill   |   |   |
| 5.3.53 Allow for replacing the external sill on the rear door   |   |   |
| 5.3.54 Allow for replacing the sill of the side elevation window  |   |   |
| <b>Room G3</b>  |   |   |
| 5.3.55 Allow for construction of new single storey rear extension to house WC, hand basin and corner shower.  |   |   |
| 5.3.56 Allow for removing the existing window and reusing it on the south elevation of the extension.   |   |   |
| 5.3.57 Allow for increasing the opening between Rooms G2 and G3 to accommodate new door. Allow for new oak ledge and brace door.  |   |   |
| 5.3.58 Allow for decoration of door with three coats of 50:50 mix white spirit and tung oil and a forth coat pure tung oil both faces.  |   |   |
| 5.3.59 Allow for tiling the bathroom from floor to ceiling in its entirety. Contractor to source and install  |   |   |
| 5.3.60 Allow for new tiled floor. Contractor to source and install  |   |   |
| 5.3.61 Allow for constructing the extension in accordance with drawing 12498/03 A   |   |   |
| <b>Externally</b>   |   |   |
| 5.3.62 Allow for replacing 1No. weatherboard on the front west elevation at low level.  |   |   |
| 5.3.63 Allow for providing lead flashing detail on the south and west elevation between the weatherboard and top of plinth.   |   |   |
| 5.3.64 Allow for removing the existing render face to the west and south elevation plinth.  |   |   |
| 5.3.65 Allow for providing new render to the plinth along the west and south elevation using NHL 3.5, 3 coats.  |   |   |
| 5.3.66 First coat 1:2 coarse gritty sand, second coat 1:2.5 sharp course sand, finish, 1:2.5 sharp medium sand.   |   |   |
| 5.3.67 Allow for replacement of the UPVC rainwater goods and downpipes in cast iron on the rear elevation.  |   |   |

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5.3.68 Allow for replacement of the fascia boards, inclusive of decoration on the rear elevation.		
5.3.69 Allow for reinstating the weatherboard above ground floor window to underside of roof line to match existing, providing lead flashing detail at the junction of the weatherboard to the rendered.		
5.3.70 Allow for replacing 13No. sections of weatherboard 5.0m in length on the south elevation.		
5.3.71 Allow for reinstating the fixings for the rainwater goods back to the weatherboard on the south elevation.		
5.3.72 Allow for preparation and redecoration of the existing downpipes, finished black. On the south elevation in accordance with paint manufactures recommendation		
<b>5.4 Decoration</b>		
5.4.1 Windows, doors (where previously decorated), skirting, front elevation weatherboard, and all other timber surfaces (excluding floors) to be decorated with two coats of Earthborn Pro Aqua Eggshell		
5.4.2 Allow for cleaning down all internal wall surfaces and redecoration three coats of Earthborn Emulsion paintwork. Colour to match existing unless noted otherwise.		
5.4.3 <b>Please note that the internal partition wall between the front and rear rooms, at both and ground first floor is of lath and lime construction. Due care and attention should be given to ensure that there is no damage to the original historic plasterwork.</b>		
5.4.4 Allow for redecoration of all ceilings with three coats of Earthborn Emulsion paint.		
5.4.5 Allow for cleaning down and redecoration of the rear elevation including extension, the side and front elevation render to be decorated in lime wash 4 coats (five for white).		
5.4.6 Allow for decoration of the weatherboard on the side elevation with three coats of Earthborn Pro Aqua Eggshell Paint. Note preparation of existing boarding in accordance with manufacturers recommendations.		
5.4.7 Allow for preparation ready for redecoration, and redecoration of all windows externally with three coats Earthborn pro Aqua Eggshell Paint.		
5.4.8 Room F1 Colour Specifications Walls – Lime Blossom Earthborn Emulsion Window Frame & Cill – Bandstand Pro Aqua Eggshell Ceiling – White Earthborn Emulsion Windows – White Pro Aqua Eggshell Floors – Tung Oil Skirting – Bandstand Pro Aqua Eggshell Door Stairwell – Tung Oil Door Cupboard – Tung Oil		
5.4.9 Room F2 Colour Specifications Walls – Blue Nigella Earthborn Emulsion Ceiling – White Earthborn Emulsion Floor – Tung Oil Skirting – Forget-me-not Pro Aqua Eggshell Door Internal – Tung Oil		

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Windows – White Pro Aqua Eggshell Window frame & cill – Forget-me-not Pro-Aqua Eggshell		
5.4.10 Room G1 Colour Specification Walls – Purbeck White Earthborn Emulsion Ceiling – Purbeck White Earthborn Emulsion Floor – Tung Oil Skirting – White Pro Aqua Eggshell Door External – White Pro Aqua Eggshell Door Stairwell – White Pro Aqua Eggshell Door Cupboards – White Pro Aqua Eggshell Windows – White Pro Aqua Eggshell Windows Surround & Cill – White Pro Aqua Eggshell Fire Surround – White Pro Aqua Eggshell		
5.4.11 Room G2 Colour Specification Walls – Purbeck White Earthborn Emulsion Ceiling – Purbeck White Earthborn Emulsion Floor – Tung Oil Door Internal – White Pro Aqua Eggshell Pro Aqua Eggshell Door External – White Externally/ Cricket Externally Pro Aqua Eggshell Windows – White Pro Aqua Eggshell Window Surrounds/Cills – White Pro Aqua Eggshell		
5.4.12 Rear Elevation Render Wall – White Lime-wash Windows – White Pro Aqua		
5.4.13 Site Elevation Weatherboard – Ebony Pro Aqua Eggshell Render – Black Lime-wash (to match existing)		
5.4.14 Stairwell Walls – Purbeck White Earthborn Emulsion Ceiling – Purbeck White Earthborn Emulsion Risers/goings – Tung oil Handrail – Tung oil		
5.4.15 Room G3 Wall – Purbeck White Pro Aqua Eggshell Ceiling – Purbeck White Pro Aqua Eggshell Door internal – Tung Oil both sides		
5.4.16 Front Elevation Weatherboard – White Pro Aqua Eggshell Windows – White Pro Aqua Eggshell Rendered Plinth – White Lime-wash		
5.4.17 Side Elevation Weatherboard – Ebony Pro Aqua Eggshell Windows – White Pro Aqua Eggshell Rendered Plinth – White Lime-wash (to match existing) Rendered Walls – Black Lime-wash (to match existing)		
5.4.18 Allow a provisional sum for removal of graffiti below the front room window on the weatherboarding on the side elevation.		

**5.5 Electrics**

- 5.5.1 Allow for re-wiring the property in its entirety to meet current Building Regulations to include for the provision of two mechanical extractors, one within the kitchen space and one within the bathroom space.
- 5.5.2 Please note: no chasing out will be permitted to the internal partition wall between the front and rear rooms at ground or first floor level. Provide Client with clear indication of any boxing-out or surface mounted wiring that may be necessary prior to installation of services. All works to be carried out in compliance with Building Regulations. The contractor to liaise directly with Building Control and provide Building Control Officer and Client with Installation/Commissioning Certificates as appropriate.
- 5.5.3 Allow for 2No. double sockets below new work surface and 2No. double sockets above new work surface.
- 5.5.4 Allow for new Tritan Electric 9.5kN shower.

**5.6 Plumbing**

- 5.6.1 Allow for providing new boiler and plumbing throughout to meet existing layout on drawing 12498/02A.
- 5.6.2 Allow for installation of hot water system to suit requirements of the appliances specified. New boiler and appropriate power supply for the boiler in accordance with the requirements of the property, and in accordance with Building Regulations.
- 5.6.3 Allow for installation of all works associated with the bathroom and kitchen. Contractor is to allow for all associated fixtures and fittings and connections to the drainage system.
- 5.6.4 Allow for mechanical extraction to all bathroom and kitchen areas.
- 5.6.5 Allow for providing the Client with clear indication of any boxing out and surface mounted pipes that may be necessary prior to installation of services.
- 5.6.6 All works to be carried out in compliance with Building Regulations, provide Building Control and Client with Installation/Commissioning Certificates, as appropriate.
- 5.6.7 Allow for CCTV drain survey to ascertain route for new drainage to accommodate bathroom and kitchen.
- 5.6.8 There is a well within the proximity of the new extension allow a provisional sum for locating and revealing the well for inspection
- 5.6.9 Allow a provisional sum for capping to well consisting of 125mm thick Grade C28/35 concrete slab with return nib downstands to the perimeter of the well, minimum 300mm with a layer of A393 Fabric centrally located
- 5.6.10 Allow a provisional sum for connections with existing drainage.

**5.7 Drawings**

12498/02 A  
12498/03 A

6.0 COLLECTION – IN RELATION TO SCHEDULE OF WORKS FOR FIRE DAMAGE

Section 1.0	Preamble (page 2)	£
Section 2.0	General Conditions and Preliminaries (page 2)	£
Section 3.0	Specification (pages 7-85)	£
Section 4.0	Schedule of Works (pages 86-91)	£
		TOTAL £

Project: 41 South Street, Rochford, Essex

To: The Morton Partnership Ltd, Leonardo House, 11 Market Place, Halesworth, Suffolk IP19 8BA.

Name of Contractor:

I/We\* having examined the Conditions of Contract, specification and schedule of works etc. delivered to me/us\* do hereby offer to execute and complete the whole of the Works described herein for the sum of:

£.....  
..... (in words) (£ )

and do hereby undertake to complete and deliver up the whole of the Works within our indicated contract period.

Until such time that a formal contract is executed, that this document, together with your written acceptance thereof, shall constitute a binding Contract between the parties.

I/We\* understand that this is a fixed price contract which will not be subject to any fluctuations in cost for the work described in the schedule of works or specification.

Commencement Date: ..... Contract Period: .....

Signed: ..... Capitals: .....

Duly authorised to sign tenders for and on behalf of:

Address:

Date: .....

- Delete as appropriate.

6.1 COLLECTION – IN RELATION TO FIRE DAMAGE AND ADDITIONAL WORKS

Section 1.0	Preamble (page 2)	£
Section 2.0	General Conditions and Preliminaries (page 2)	£
Section 3.0	Specification (pages 7-85)	£
Section 5.0	Schedule of Works (pages 92-98)	£
		<hr/>
		TOTAL £
		<hr/>

Project: 41 South Street, Rochford, Essex

To: The Morton Partnership Ltd, Leonardo House, 11 Market Place, Halesworth, Suffolk IP19 8BA.

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£..... (in words) (£ )

and do hereby undertake to complete and deliver up the whole of the Works within our indicated contract period.

Until such time that a formal contract is executed, that this document, together with your written acceptance thereof, shall constitute a binding Contract between the parties.

I/We\* understand that this is a fixed price contract which will not be subject to any fluctuations in cost for the work described in the schedule of works or specification.

Commencement Date: ..... Contract Period: .....

Signed: ..... Capitals: .....

Duly authorised to sign tenders for and on behalf of:

Address:

Date: .....

- Delete as appropriate.

## **APPENDIX A**

### **Drawings**