



Old Soldiers' Home, Fermoy External Conservation Works

26 McCurtain Street, Fermoy, Co. Cork. P61 H960

**Specification For Works & Method Statement
(Rev.1- Issued For Tender August 2026)**



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Section B - Engineering Specification

1.0 Introduction

This specification is for the repair works to the historic building and additional upgrades to achieve compliance with building regulations.

No.26 McCurtain Street is situated within the Fermoy Town Centre Architectural Conservation Area (ACA). Its historic fabric should be treated with care and works should be undertaken in a manner which is sensitive to its location within the ACA.

The overall policy is to retain, restore and enhance the integrity and significance of the building in line with international charters and best practice. All material and workmanship must comply with the relevant British Standard or Code of Practice including BS 9000, workmanship on building sites, pts 1 to 15, and BS7913:1998 – The Principles of the Conservation of Historic building.

Note: CA refers to Conservation Architect

2.0 Knowledge, Skills & Techniques

The conservation works must employ all available knowledge, skills and disciplines.

2.1 Repair

The policy is to repair rather than replace. Repairs are to use matching traditional materials, details and methods. This applies to work to all fabric (roof, walls and windows), as illustrated on the drawings and outlined in the schedule of works.

Where conservation work necessitates the replacement of part or whole of any element of the building fabric, this is to be recorded and surveyed and rebuilt to exactly match historic materials and detailing. Due to the exposure and limited nature of maintenance access to the upper parts of the cupola, consideration for robustness and longevity has been to the fore in the design of repairs and structural interventions.

2.2 Minimum Intervention

In considering the proposed works to the buildings, interventions have been kept to the least possible to ensure the impact upon the building's significance is kept to a minimum while ensuring the external features remain intact into the future.

2.3 Compatibility

The selection of materials is compatible with the interior and exterior of the building. The proposed uses involve minimal impact on the significance and integrity of the building whilst ensuring its stability and safety in the face of direct and sometimes extreme weather events.

2.4 Sensitivity & Cautious Approach

Only as much work as is necessary, but as little as possible, has been proposed. The aim is to respect, retain or enhance evidence of the building's history and its significance.

2.5 Direction & Supervision of Works

The principles established here must be taken on board by the Contractor and fully implemented on site through the competent direction of people on site with an appropriate level of knowledge and skill. Consultants and contractors working on site must have expertise in conservation. A team of specialist consultants and engineers have been appointed to provide same.

2.6 General:

Protection, Temporary Support & Coverings

The Contractor is to provide for all the requisite shoring, needling and strutting to walls, floors, and roofs to allow safe and proper execution of the works and no parts of the building to be left exposed to weather at any time.

The interior of the building must be fully protected during all works.

The contractor must put in place measures to fully protect the interior of the building during all roofing works, façade repairs, and window protection works.

The building is sited on a busy street and so the Contractor will be required to facilitate public access around the building and the scaffolding etc. will need to be designed and secured with this in mind.

Taking Down

Pulling down, taking out and taking away shall be carefully performed and every precaution shall be taken to ensure the safety of the works.

Making Good

The contractor shall make good all work disturbed in the course of the Contract. Making good is to be executed with materials and workmanship, which match in every respect the surrounding works, and shall be properly bonded thereto.

Setting Aside

Sound stone, bricks, slates and other original materials must be salvaged, cleaned and retained for setting aside. Materials must be stored safely and securely on site.

Protection Of Fittings

All timber trims and any other fittings shall be carefully set aside and stored, for re-use, and to enable exact replacements to be made if required.

Salvaged Materials

All stone, sound bricks, slates, quarry tiles, recovered during demolitions or building works are to be carefully salvaged, cleaned and retained for re-use as directed. Salvaged roof slates to be numbered and stored vertically adjacent to the roof.

Removal Of Rubbish & Stripping Out

All loose debris and accumulated rubbish etc., is to be removed from the site. All defective timber identified is to be stripped out, removed and taken away, as determined on site by the Architect.

Rainwater

Divert all rainwater pipes to proper outfall points during the works as required.

Warning Signs

The Contractor shall fence or otherwise protect the works, while maintaining safe public access to main street, the library building public entrance and fire escape.

2.7 Scaffolding:

General

All materials used for scaffolding shall conform to relevant HSA Code of Practice for access and working scaffolds. The method of erection of scaffolding and access platforms etc. shall conform to BS 5973 1990 and 5974 1990, I.S. EN 1004, 2005, I.S. EN

12811 Part 1, 2004, I.S. EN 1263 Part 2, 2002 and any subsequent amendments. The scaffolding access system shall be designed, erected and maintained so as to enable all stages of the works to be carried out in complete safety and shall comply with all statutory requirements, rules and regulations prevailing during the contract period.

Scaffold works to be carried out in accordance with HSA Code of Practice for access and working scaffolds.

Mobile access and working towers to comply with guidelines in I.S. EN 1298, 1996

Where possible Scaffolding ties should be fixed into stonework joints. In areas of the stonework facades where this is not possible because pull-out tests of fixings cannot be achieved, 6 mm diameter 'Apollo' ties fixed with plastic sleeves (or equal and approved) may be used subject to architect's approval. Both the scaffold ties and plastic sleeves must be removed during the scaffold down taking and ALL holes (existing and new) filled flush with lime-based mortar to match the stone in colour and texture.

Foot and toe boards need properly secured down to prevent removal by gale winds. Particular attention needs to be paid to the loading requirement of stone or slate prior to insertion or on removal.

The Contractor shall allow for the phased supply, erection, dismantling and re-erection of an independent access scaffolding system to suit the phases of the work and for eventual removal from site at the end of the contract.

Scaffolding shall be in alloy, galvanized iron or newly painted iron with full capped members and each level shall be fully planked with guard rails throughout each phase of work, and designed to allow easy access, including all ladders etc. to all parts of work to

carry out remedial work. This will require outriggers to support boarding in close proximity to the face of the building. Positions for mechanical hoists etc. are to be agreed with the Architect. All lifting equipment required for hoisting materials into position is to be provided.

The scaffolding shall have upstand perimeter planks to prevent stones or debris falling onto area below, but any damage thus caused will be the responsibility of the Contractor.

Any scaffolding member resting on or in proximity to the building shall have adequate protection in the form of wooden blocks etc. to prevent damage to the fabric of the building. Any damage or staining that does occur as a result of inadequate protection shall be made good at the Contractor's expense. Scaffolding shall not be permitted to tie through the building at window openings. Any damage caused to the building by works not being carried out in a proper manner or by the negligence or lack of supervision by the Contractor's operatives shall be made good to the Architect's satisfaction at the Contractor's expense.

The Contractor shall allow for taking all sufficient measures to ensure that unauthorised persons cannot gain access to the scaffolding from the surrounding cemetery.

2.8 Security

All ladders must, when the site is not being worked, have the first lift ladder removed and placed under lock and key. All loose ladders on the site must be similarly chained and locked.

2.9 Fire Precautions

'Hot Work' is prohibited on the site unless by prior agreement.

'Hot Work' is defined as 'All operations involving flame, hot air or arc welding and cutting equipment, brazing and soldering equipment, blowlamps, bitumen boilers and other equipment producing heat or having naked flames.

Contractors should make themselves aware of the fire instructions and procedures to be followed in the event of a fire.

Contractors are to make themselves aware of the location of the nearest phone. In the event of fire dial 999, ask for the Fire Brigade.

The Contractor must ensure that all fire exits and access points for emergency equipment are kept clear at all times and that combustible materials are not left unused on site or adjacent to any building.

Suitable and sufficient adequately maintained fire extinguishers must be provided by the Contractor for use during building and associated work. Smoking is not allowed at any time on or within the building.

Burning of rubbish is strictly prohibited. All rubbish must be removed from the site. Burning off paint using blowlamps or electrical element burners is strictly prohibited. Flammable materials must not be stored on site without prior arrangements with the Supervising Officer.

2.10 Noise

The Contractor should comply with the General Application Regulations 2007 Chapter 1 part 5. Radios and other audio units will not be permitted.

2.11 Accidents

In the case of any accident or dangerous occurrence, the ER if appropriate, without delay.

The responsibility for statutory reporting of accidents and dangerous occurrences to the relevant enforcing authority rests with the Contractor.

2.12 Welfare Facilities & First Aid

Arrangements for the use of sanitising station with hand washing facilities and lavatories must be made by the contractor. All facilities used must be kept clean at all times. The Contractor is responsible for the provision of first aid cover and equipment for his employees.

2.13 Plant, Tools & Equipment

The Contractor is to provide all labour, materials, plant, tools and transport for the proper execution of the works.

All plant, equipment and vehicles used by the Contractor should be in sound condition and properly maintained. They should be used in accordance with the manufacturer's instructions. Operators should be trained and competent.

All plant and equipment must be of suitable specification and the work, guarded to current safety standards for training and provision of ppe, guards, etc.

2.14 Area Of Work

The contractor is to confine his activities to the smallest possible area of the site for the execution of the works and storage of materials, unless otherwise defined. Protection measures for public access to the library and the street must be put into place, to define no-go areas for construction traffic.

The Contractor must maintain an adequate signposting warning system wherever there is a risk to any person.

Site compound area is defined within the tender drawings. Public access routes around the compound must be agreed in advance and the contractor is to provide a traffic management plan.

No working more than normal working hours will be permitted unless specifically requested or by agreement with the client.

2.15 Site Access & Tidiness

The Contractor must clear away all dust, dirt and other debris as it accrues or on a daily basis. Positioning of a skip, if necessary, must be agreed with the client.

Refer SITE compound drawing.

3.0 Cleaning and Re-Painting Facades

Introduction

The front and rear facades are to be cleared of vegetation, loose cables, and redundant fixtures. The existing paintwork to the render is to be stripped and new silicate-based paint applied. The front façade features brick corbelling and window head features which are to be stripped of existing paintwork and treated with clear masonry sealant.

3.0 Specification For Cleaning Facades & Stripping Existing Paint

The specification for all cleaning is detailed below and the contractor is expected to match this. Cleaning is to be carried out in those areas specified only to be agreed with the architect prior to commencement. Sample panels should be prepared for the CA's approval before wider work commences.

Sequence for cleaning of façade render to be as follows:

1. Removal of all vegetation and debris and application of biocide to neutralize vegetation growth. Leave for time recommended by product guidelines.
2. D.O.F.F. steam cleaning to existing render to remove acrylic paintwork. After application, gently clean away remaining chemical or paint residues using warm water and a soft/medium nylon brush. Do not use chemical stripper.
3. Assess render for damage/detachment and carry out repairs as needed using specified hydraulic lime render.
4. Apply a clear silicate priming liquid to equalize suction across the new and old render. Apply the recommended amount of coats (at least 2) of silicate-based paint to render, ensuring the paint is worked into the textured render profile.

Contractor to submit details and method statement for proposed cleaning prior to commencing works. Treatments must be applied by qualified personnel and as per the manufacturer's instructions.

In all cleaning methods the Contractor will be responsible for strict compliance with all Health and Safety regulations including the Health and Safety at Work Act, Noise at Work Regulations and the Control of Substances Hazardous to Health Regulations (COSHH) 2012. This includes proper disposal of all hazardous substances including lead or other toxic paints cleaned off the building, and all substances used in the cleaning processes. The safety of operatives and other construction operatives is the Contractor's responsibility and appropriate PPE must be used.

3.1 Removal Of Cable/Fixtures/Metal Cramps

Contractor to safely remove existing services cables and fixtures from the façade, ensuring that no services within the building or neighbouring properties are impacted. Contractor to liaise

with relevant authorities on removal/disconnection of equipment and fittings prior to works as required. On removal, exposed/damaged render is to be made good and match surrounding render

The repair work may require the removal of corroded iron cramps or any other redundant imbedded metal for the larger sections of walls. The exact detail of work will be determined on site following instructions from the CA and project engineer.

3.2 Removal of Vegetation and Biological Matter

Tear and remove thick growths, taking care not to damage any existing building fabric. Where growths cannot be removed completely without disturbing or damaging masonry, seek instruction from the CA. Dampen any dry growths and clean down with soft bristle brush, avoiding any scoring or damage to surface.

Apply appropriate biocide treatment solutions to kill growths and inhibit further growths. Leave for time recommended by product guidelines.

3.3 Steam / Biocide

NOTE: 1 no. sample panel (2m²) must be carried out and approved by CA before work commences. See DWG 3200 for location.

The operating specification is for STEAM CLEANING (such as Thermatech or equal and approved) is as follows:

Temperature ranges up to 150°C, minimum pressure 25 to 30 bar pressure, fan nozzle type (40°), 3-6 litres per minute flow rate of water. The surface being cleaned therefore should not suffer any damaging pressure, thermal shock or deep saturation and dries should within minutes. If this is not being achieved the contractor should stop immediately. Contractor to following the manufacturer's guidelines in all cases.

DOFF steam cleaning to existing render to remove acrylic paintwork. After application, gently clean away remaining chemical or paint residues using warm water and a soft/medium nylon brush. Do not use chemical stripper.

3.4 New Silicate-Based Paint

Once the existing paint has been removed, the render must be allowed to completely dry and remain clean, dust and grease free before paintwork commences.

Prime the surface with one coat of silicate primer and allow to dry according to manufacturer's recommendation length of time.

Apply first layer of silicate-based paint to surface, ensuring the coating is thin and well-spread uniformly. The first coat should be diluted with up to 20% primer. Once the first coat is dry, apply the second coat. Allow drying time of 6-12 hours between coats.

Do not use if the working temperature is below 8°C.

Colour of paint tbc by CA. Provide 1no. true colour sample panel (1m²) for approval by CA prior to wider painting commencing.

3.5 Brickwork Finish

Most of the façade is covered in existing render, however the window heads and decorative corncing elements are exposed brickwork. These bricks are to be cleaned of vegetation and stripped of existing paintwork as outlined above.

Assess the condition of each brick and undertake repairs/replacements and re-pointing with hydraulic lime mortar as required. Cleaned bricks are to be treated with a clear masonry water-based repellent sealer to finish.

3.6 Workmanship

Prior to commencement of the cleaning methods, the Contractor shall carry out a series of trial tests for the cleaning method specified below, before final decisions are made by the Architect as to the extent and exact specification of each method. Test areas (approx. 2m) to be selected by the Architect.

No other materials other than those specified, or other methods such as abrasive grit blasting, or high-pressure water lance sprays are to be used without the express approval of the Conservation Architect.

Any large open joints in the stonework are to be protected from water ingress during cleaning operations.

All window and door openings to be protected from water and chemical ingress.

3.7 Protection of the Building During Cleaning Works

Prior to any cleaning operations the Contractor shall allow for adequate protection to surrounding areas, and in particular, neighboring buildings and the main street pavement and road.

Allow for removal of stone / brick slurry, poultice residues, run off or like, at least once a day, to a suitable approved tip, with adequate protection, including sand bags etc., to prevent slurry damaging hard surface areas. Proposals to be submitted for addressing water runoff from cleaning work.

Allow for the protection of all gullies and drains so as to allow for the passage non-polluted water but prevent entry of stone / brick slurry, poultice residue, chemical run-off or like into drain system.

Drainage on site to be inspected and maintained to make operational for the work

4.0 Hydraulic Lime for Mortars and Renders

Introduction

The works are to be carried out by companies with experience and expertise and a proven track record in the application of lime mortars.

The Conservation Team will request a submission outlining proposed materials methodology for re-rendering from the proposed lime render sub-contractor for approval before work commences.

4.1 Hydraulic Lime Mortar

Hydraulic Lime mortar (NHL 3.5) is to be used for building and repointing brickwork. Hydraulic Lime should not be confused with hydrated lime, which is not an acceptable alternative.

Hydraulic Lime mortar shall be from one of the following sources, unless otherwise: -

TBC: Naturally Hydraulic Lime

Bedding mortar for brickwork should be with Naturally Hydraulic Lime (NHL) mortar: NHL 3.5 with the mix proportions: 1 Lime: 2.5 Sand

4.2 Delivery and Site Storage of Lime

Hydraulic lime shall be delivered to the site in the manufacturer's sealed bags. Bagged lime shall be kept stored in dry weatherproof and reasonable airtight sheds, the floors of which shall be kept raised above the ground and shall be kept well ventilated.

Hydraulic lime shall be used in the order received and each delivery shall be kept separately. Lime which has been stored on site for more than six weeks shall not be used and bags containing hard lumps or cakes shall be rejected and shall be removed from the works.

4.3 Sand

Sand should be clean, sharp and washed and comply with BS 1199 and 1200:1976.

Sand should be obtained from an approved source and well graded down from 4mm to 0.075mm particle size with no one sieve retaining more than 35% of the total mass of the aggregate.

A coarse grit (4-10mm) can be added if large particle size is needed for work to wide joints of the Aggregate grading is dependent on the width of the joints to the stonework and this is to be approved by Architect/Clerk of Works. Where very wide joints occur, a

2-4mm aggregate may be introduced to the pointing mix to prevent cracking on these wide joints.

4.4 General Notes on Mixing of Lime Mortar

A drum mixer can be used and will provide adequate mixing. Water must be clean and free from organic matter - tap water is recommended. Depending on the consistency of the mix, approximately 4-5 litres of water are required for each 25kg bag of dry material. Following trials on site to establish workability and colour, record water addition and maintain throughout the mixing period. Measure dosage of water per 25kg bag.

4.5 Drum Mixer

Switch the mixer on and dampen down the inside of the drum before emptying the contents of the bag, as this will help to reduce the amount of airborne dust. Once the inside of the drum is coated with a film of water, switch the mixer off and empty the contents of the Hydraulic Lime Mortar 25 kg bag into the drum. Add a proportion of the water (approximately 50%) to the dry mix and switch the mixer on. Allow the water to thoroughly disperse through the mix before more water is added.

Note: The lime, which is in a powdered form absorbs water. It will momentarily hold more water than it can cope with; this is then released which can result in a saturated or sloppy mix. Through controlling the amount of water that is added, allowing it to thoroughly disperse and keeping the mix slightly lean, the chances of the mortar becoming sloppy and unworkable are greatly reduced.

Continue to add water in this way, allowing all of the water to combine before adding more. When the mix is slightly lean of the required consistency (or once you have added 90% of the water) leave the mortar to turn over in the drum for 5-10 minutes.

Before the mixing period has expired, add the remaining 10% or enough water to get the mix to the desired consistency.

To check that the lime is of the right consistency, put a small quantity of lime onto the back of a trowel and tap it gently (allowing the mortar to evenly spread across the face of the trowel). Then, holding the trowel steady turn it upside down –the mortar should remain stuck to the trowel.

Hydraulic lime for pointing mortar can be 'gauged' with additives for colour and/or to improve hydraulicity. Sample panels of gauged mortars are to be carried out at the start of the project.

4.6 Improving the Properties of The Mix and Re -Working

The workability of Hydraulic Lime Mortars can be improved by allowing the mortar to stand after the initial mixing period and then re -working the mix just prior to when the mortar is required. Once the mortar has been thoroughly mixed to the desired consistency, empty the contents into a mortar tub or barrow and cover with a damp hessian or polythene sheet. This will help to control the evaporation of water from the mix.

The mortar can be left like this for up to a period of time (contractor to follow manufacturer's guidance) in normal weather conditions.

4.9 Lime Render:

Preparation of External Walls on an even surface for lime render. Any hollow or decayed render should be removed, and any loose pointing should be raked out and replaced prior to application.

Brush the wall to remove loose material but do not rake out pointing to provide a key. Do not use wire mesh or metal lath to form a key or plastering beads on corners.

Wet walls thoroughly with a backpack sprayer. More porous substrates will require more water. Allow water to soak into the wall and then spray again. When render is applied the wall should be damp but without water glistening on the surface.

Use a three-coat build-up of lime render in the following sequence:

- **A scud coat** (1:2) lime to binder using NHL 3.5. (3-5 mm thick)
- **A scratch coat** (1:2.5) lime to binder using NHL 3.5. To be applied the following day or when the previous coat has firmed up sufficiently to resist indentation with a thumb. (9-12mm thick)
- **Finish coat.** (1:3) lime to binder using NHL 2.

Surface finish to be a thrown coat with aggregate to match the original harling (6-10mm thick)

Apply coats in thin layers.

Lime render must be applied/thrown using as much pressure as possible to force the render into the surface to form a close contact between render and backing. The application technique is to be approved by the architect.

Create a key for subsequent coats. Always ensure that the previous coat is damp before applying the next one.

Work must be protected to prevent rapid drying. Hydraulic lime render must be kept slightly damp but also allowing air to circulate. Therefore, if using polythene, there should be a gap between the sheeting and the wall.

5.0 WINDOWS, DOORS, GATES & GLAZING

5.1 Certification

Provide independently certified evidence that bespoke window units comply with specified performance requirements and applicable standards.

5.2 Site Dimensions

- Procedure: Before starting work on all replacement windows and doors designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.

5.3 Ironmongery

Contractor to submit proposal for Total Quantity of Windows with 2 x Sashes with 1no sliding sash per window.

- Material: Brass
- Fixing: Assemble and fix carefully and accurately using fasteners with matching finish supplied by ironmongery manufacturer. Do not damage ironmongery and adjacent surfaces.
- Checking/ Adjusting/ Lubricating: Carry out at completion and ensure correct functioning

PRODUCTS

5.4 Timber Sliding Sash Windows

Conservation Sliding sash Window as indicated on configuration drawings.

- Timber: Engineered clear grade knot free hardwood frame and sashes
- Frame section (width x depth): 50 x 50 mm. (50mm x 75mm Sill)
- Sill section (height x depth): 90 x 180 mm.
- Sill projection: 85 mm projection or 60 mm projection for bays with thinner walls.

Finish: Three coats of spray applied water based micro-porous paint, colour tbc by CA.

- Window board groove: Required to accommodate 18mm thick hardwood window cill
- Frame profile: Ovolo or other standard to match existing as closely as possible. Samples to be approved.

- Internal glazing bars 50mm x 25mm Ovolo to match existing as closely as possible. Samples to be approved.
 - External glazing bars: 18 mm chamfered putty bar.
 - Glass Units and Whole Product U-values/G-values:
 - Slimline double-glazed unit (4-4-4mm) including internal pane with Low -E coating and 4mm Xeon gas filled void.
 - U -values: 1.1 W/m²K, minimum required 1.4W/m²K for the whole window
 - Acoustic rating: minimum acoustic rating 36dB RW+ Ctr for whole window.
 - Internal glazing bars and/or Perimeter bead: as detailed in drawings
 - Ironmongery: Brass metal for visible components, ring pull to suit the weight of each window sash. Samples to be submitted for approval.
- Jamb packer pieces, additional sections to head and cover sections for connecting posts and posts to be formed as part of the window and painted to match in factory.
- Gaps around frame, timber grounds be full filled with Rockwool and sealed to internal side
 - Groove to frame required to except internal timber lining to window reveals.

5.5 Conservation Rooflights

Refer to drawings for locations. Exact setting out to be confirmed on site following removal of roof coverings and inspection of the roof structure/setting out by the structural engineer.

- Preparation: Re-form existing structural openings to higher level in the rafters (as per drawings) and prepare to accommodate the roof light.
- Product Style: Conservation Style Rooflight
- Size: TBC onsite – Refer to DWG 7000
- General installation: On the rafter installation.
- Color: RAL 7014 Anthracite Grey
- Glazing: Clear, Toughened
- U -values: 1.5W/m²K, minimum required 1.8W/m²K for the whole window
- Operation: Manual Pole Operated
- Installation generally: In accordance with manufacturers installation details.
- Ironmongery: Hand winder; finish to match ironmongery within room.

- Warranty: Provide a copy of the following manufacturers warranties within the O&M manuals.
 - Protective coating: 12 years.
 - Glass: 5 years.
 - Ancillary items/ironmongery: 1 year.
- Other requirements: Prior to placing order, provide fabrication drawings for Conservation Architect approval to include existing roof structure, build up and details.

5.6 Fire Doors

New Fire Resisting Doors/ Door Assemblies / Doorset

- Door products: As defined in BS EN 12519.
- Required Fire Rating: E30
- Evidence of fire performance: Provide certified evidence, in the form of a product conformity certificate, directly relevant fire test report or engineering assessment, that each door/ door assembly/door set supplied will comply with the specified requirements for fire or smoke resistance if tested to BS 476-22, BS EN 1634-1 or BS EN 1634-3. Such certification must cover door and frame materials, glass and glazing materials and their installation, essential and ancillary ironmongery, hinges and seals.
- Components, assemblies, or sets will be marked to the relevant product standard and/ or third-party certification rating.

Fanlight above door to be fixed safety glass with 30-minute fire rating.

5.7 New Aluminum Windows

New powder coated aluminum thermally broken double glazed windows to be fitted in existing openings of rear elevation. Aluprof MB-70 system or equivalent, to be approved. Aluprof system or equivalent, to be approved by Architect. Refer to drawings and details.

All fixings to be through frame; no straps due to exposed stone reveal internally and externally. Glazing to be laminated and toughened double glazed units throughout. Comprising of a 21.5mm Toughened Laminated unit external and a 10mm Toughened unit internal with Argon fill. System to achieve min 1.4W/m²K.

DPM weather strip to be installed prior to frame, airtightness and weather tight sealing tapes to be fitted internally and externally. Powdercoated aluminium cover flashing to be fitted over frame to conceal tapes and gap between frame and masonry reveal internally and externally.

Windows to be designed for a net characteristic wind pressure of 1.1kN/sq.m.

5.8 New Rear Gate and Fence (Gate Type A)

New steel single leaf manual opening pedestrian gate with hydraulic closer and lock system. Solid sheet infill to gate leaf. Galvanised and powder coated finish colour RAL9005 (Jet Black). Dimensions to be based on site survey. Frame fixed to existing boundary piers, make good on completion.

Adjust hinges, latches and locks to ensure smooth operation prior to handover.

Shop drawings to be approved by CA prior to manufacture. Submit manufacturer's maintenance instructions on completion.

5.9 Wrought Iron Gates (Gate Type B)

New wrought iron gates to the design outlined in drawings. Manual opening leaves with lock system. Hinges should support each leaf in open and closed position without the need for a drop rod. Iron to be treated against rust and finished with a powder-coated paint, colour TBC.

Adjust hinges, latches and locks to ensure smooth operation prior to handover.

Shop drawings to be approved by CA prior to manufacture. Submit manufacturer's maintenance instructions on completion.

5.10 Protection Of Components

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

5.11 Replacement Window Installation - First Floor

- Standard: To BS 8213-4.

Sealant Joints to Internal Frame Junctions

- Sealant: - Manufacturer: Submit proposals.

Finish triangular fillets to a flat or slightly convex profile.

Sealant Joints External Junctions With Masonry Surround

Sealant: Burnt Sand Mastic

- Colour: [To match externally reveals of window opening].

5.12 Ironmongery

- Fixing: In accordance with any third-party certification conditions applicable. Assemble and fix carefully and accurately using fasteners with matching finish supplied by ironmongery manufacturer. Do not damage ironmongery and adjacent surfaces.

- Checking/ Adjusting/ Lubricating: Carry out at Completion and ensure correct functioning.
- For the timber escape door: 1no. door closer, 1no. panic bar to comply with IS EN1125:2008, 1no. finger plates, 1no. kick plates, 3no hinges, all in in satin stainless finish.
- For the timber double sash windows with sliding bottom sash & fixed upper sash per window; 1no. fastner, 2no. sash lifts, 2no. brass ball bearing axle pulleys, 2no. waxed cord and counterweights (weights to be selected to match sash weight) all in solid brass finish. All fittings to be high quality, durable, and with cords accessible for maintenance.

6.0 Flat Roof Membrane

6.1 Torch-On Felting

Apply new J41 system over existing flat roof deck.

Clear existing vegetation from flat roof sections to the rear of the property. Ensure that the entire roof is clear of dirt, debris, and is completely dry. Remove any loose felting and make good.

Assess suitability for product to accommodate existing roofing load.

Lay roof covering in accordance with BS 8217 and BS 8000 Part 4 to ensure the roof is secure, free-draining, and completely weather tight. Works are to be carried out by qualified personnel.

Materials should be stored securely on site to ensure they are dry. Protect day work joints with a lapped and fully bonded strip of top layer felt. Suspend work in severe or continuously wet weather unless an effective temporary roof is provided over the working area. Materials must be laid on dry bases.

No petroleum-based chemicals harmful to bitumen are allowed to come in contact with the roof surface. No building materials should be stored on the roof and the roof should be protected from any subsequent building operations on the roof once finished.

Lay torch-on sheets using equipment and methods recommended by the manufacturer. Apply primer as per product manufacturer's recommendations, allowing sufficient drying time before covering. Ensure that there is a full bond over the whole surface, with no air pockets. Leave a continuous bead of compound at head and side laps of top layers.

Where practicable, start laying felt at lowest point of roof and unroll felt up the slope with not less than 75mm side and 100mm end laps, ensuring that water will drain over and not into the laps. Break bond between layers with side laps staggered by one half sheet width in two-layer coverings and one third sheet width in three-layer coverings. Apply successive layers with minimum delay, ensuring that moisture is not trapped. Ensure edges are tightly finished at corners and all edges. Ensure new membrane retains existing roof falls to suit drainage outlets.

Form details to existing roof lights and openings with adequate overlapping, staggering of laps, and full bonding of successive layers so that they are waterproof, in accordance with the manufacturer's instructions.

7.0 RAINWATER GOODS

Refer to engineer's specification for PVC gutters and downpipes.

7.1 Cast Iron Rainwater Goods:

The existing cast-iron rainwater goods (including hoppers, brackets, and shoes) on the front elevation are to be removed in full and replaced with new heritage style cast-iron equivalents. There are to be installed with appropriately sized anchors and fixings.

A new heritage style cast-iron hopper is to be installed to connect the new shopfront drainage to the new downpipe on the front elevation (refer to drawings).

All gutters and downpipes to the rear roof (including the flat roof extension) are to be removed in full and replaced with new 150mm PVC gutters and enlarged PVC downpipes.

Jointing Methods for Cast Iron Rainwater Pipes

Vertical rainwater pipes are not normally sealed. Only seal joints in a horizontal position e.g. 90-degree branch arm or bend. It is recommended that three small wedges made from sheet lead off-cuts are used to centralise pipe and prevent wind rattle.

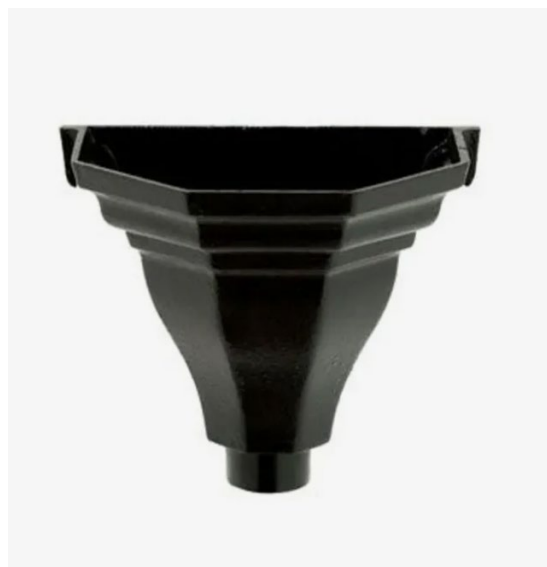
Fixing methods for Cast Iron Rainwater Pipes

Non-corrosive coach screws or other proprietary fixings may be used.

When fixing on an uneven surface such as flint walls or soft and crumbling substrates, the recommended method is to secure fixings by means of epoxy resin in pre-drilled holes. Position fittings so they are not obstructed.

CAST IRON HOPPERS:

Cast-Iron hoppers are required on the main elevation to replace existing hoppers. Two hoppers at the upper levels of the elevation should be replaced with similar style hoppers (see image attached) at the same positions. Existing gutter outflow connection from neighbouring property is to be reinstated.



A new hopper will be required to connect the shopfront gutter to the adjacent downpipe on the main elevation. Contractor is to ensure that an appropriately sized hopper and connection is installed.

Product style to match attached image, final product style to be approved by the CA.



GENERAL NOTES ON INSTALLATION HEALTH AND SAFETY

Safety should be the first consideration when working on any building, especially at height. As with any drainage system cast iron pipes and gutters must be fixed to sound material. It is essential that whatever surface holds the drainage system will also support the possible buildup of snow and ice, and potential slipped slates.

We recommend you follow the guidelines provided for safety as outlined by the HSE for work on construction sites.

Installation Standards. In the interests of performance and safety we recommend that all installation work adheres to BS8000 1989 Workmanship on Building Sites part 13 Code of Practice for above ground drainage and sanitary appliances.

Cast Iron Rainwater goods are to be coated with a rust inhibiting, grey, zinc phosphate primer, and fully coated with a zinc phosphate-based paint developed specifically for iron substrates and exhibiting excellent anti-corrosion and weather resistant properties, or similar approved. Finished in a black satin finish.

When sizing any roof area for drainage purposes please refer to "Drainage of Roofs and Paved Areas" BS6397 1983 or the Institute of Plumbing Handbook.

Supplier to confirm sizing, length of gutter runs and number of downpipes.

Cutting Cast Iron Pipes. There are three types of cutting tool.

- Powered disc cutter (the quickest and most popular).
- Tungsten tipped hacksaw.

TESTING & HANDOVER

For testing, temporarily block all outlets. Fill gutters to overflow level and after 5 minutes, inspect for leakages.

Before handover, remove and construction rubbish, debris, or dust which may have entered the system. Do not sweep or flush into rainwater system.

8.0 INSULATION

Allow for 200mm thick (depth to be confirmed on site) Thermo Hemp Combi Jute Insulation or equivalent to be provided between the ceiling joist in the attic, 100mm between joists and 140mm above joist to achieve 0.16 u value.

- Resistance to Fire – B2, Class E
- Resistance to Mold growth Level 0, no nutrients for rodents or insects.
- Water Absorption <4.2kg/m²
- Ingredients - 62.5% Hemp fibre 21.75% Jute fibre, 9% polymer binding fibre (PET-based), 4% Soda

8.1 GENERAL INFORMATION

Storage, preparation, and installation must be in dry conditions, store upright.

To achieve an installation with no gaps, install oversized by 10-20mm on each side-When installed slightly oversized, the insulation is compressed and pushes against the sides of the joists. In general, this “friction fit” will hold the insulation in place. The ability for the insulation to stay in place with the compression force alone is dependent on the insulation thickness, rafter spacing and surface friction.

The properties and performance of the insulation can only be achieved if the product is installed according to the guidelines of the manufacturer and if it is protected from rain and moisture during storage, transport and installation-The application of national building regulations must always be observed.

9.0 Repairing/Renovating: Shopfront

The existing timber shopfront cladding is to be removed and replaced with new timber cladding and detailing as outlined in the drawings. Existing ceiling elements are to be removed and reformed to reveal the decorative capitals to the internal iron columns.

For specification on timber works to the roof, see engineer's specifications.

9.1 Repairing/ Renovating/ Conserving timber

INSPECTION

- Purpose: To confirm nature and extent of repair replacement work to structural timber in the walls and roof of the shopfront.
- Instructions issued during inspection: Contractor to confirm in writing, with drawings and schedules a minimum of 3 working days before commencing work for comment.
- Purpose: To reveal previously concealed areas of structure or fabric not recorded during initial surveys.
- Extent: To be agreed; refer to preliminaries for Provisional Sum.

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.

HARDWOOD FOR DECORATIVE JOINERY refer to drawings/schedules for locations.

- Species: European Oak.
- Size/profile: As per detail drawings. Shop drawings to be approved by CA prior to manufacture.
- Quality: Generally, to BS EN 942; free from decay and insect attack (except pinhole borers).
- A appearance class: Knots not permitted where exposed to view.
- Moisture content on delivery: 13-19%.

SCREWS

General use for non-structural repairs, Stainless steel.

EXECUTION**WORKMANSHIP**

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

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.

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.

MATERIAL SAMPLES

- Representative samples of designated materials: Submit before placing orders.
- Designated materials: softwood as C51/360 and oak as C51/370.

DIMENSIONS GENERALLY

- Site dimensions: Take as necessary before starting fabrication.

- Discrepancies with drawings: Report without delay and obtain instructions before proceeding.

CROSS SECTION DIMENSIONS OF STRUCTURAL SOFTWOOD AND HARDWOOD

- Refer to structural engineers' details.

CROSS SECTION DIMENSIONS OF NONSTRUCTURAL 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: -0, +1.

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.

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 and/ or drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

WOOD COMPONENTS - AS DELIVERED FINISH

- Components to be painted: Natural.
- Components to be clear finished: Natural.

REPAIR OF MEMBERS - CUTTING OUT MEMBERS

- Extent of timber removal: Cut out full cross section of member where wood is defective or decayed, plus 100 mm of sound wood. This will depend on the nature of the defect and/ or decay and will be assessed on site on a case-by-case basis with the timber specialist and CA.
- Distance from face of support to cut end of existing timber: Obtain instructions if dimension exceeds maximum shown on schedule.
- Joint profile: Scarf joint at 1 in 12 to grain with single 40 mm step.

REPAIR OF DISTORTED TIMBER MEMBERS

- Generally: Repair to shape that member has assumed.

FINISHING OF EXTERNAL TIMBER

All timber external cladding elements to be painted (colour TBC). Sample of painted finish on timber to be approved by CA prior to commencing.

PREPARATION GENERALLY

Standard: In accordance with BS 6150.

Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.

Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared. Substrates: Sufficiently dry in depth to suit coating.

Efflorescence salts: Remove.

Dirt, grease and oil: Remove. Give notice if contamination of surfaces/ substrates has occurred.

Surface irregularities: Remove.

Joints, cracks, holes and other depressions: Fill flush with surface, to provide smooth finish. Dust, particles and residues from preparation: Remove and dispose of safely.

Water based stoppers and fillers:

- Apply before priming unless recommended otherwise by manufacturer.
- If applied after priming: Patch prime.

Oil based stoppers and fillers: Apply after priming.

COATING GENERALLY

Application standard: In accordance with BS 6150, clause 9.

Conditions: Maintain suitable temperature, humidity and air quality during application and drying.

Surfaces: Clean and dry at time of application.

Thinning and intermixing of coatings: Not permitted unless recommended by manufacturer.

Overpainting: Do not paint over intumescent strips or silicone mastics.

Priming coats:

- Thickness: To suit surface porosity.
- Application: As soon as possible on same day as preparation is completed. Finish:
- Even, smooth and of uniform colour.
- Free from brush marks, sags, runs and other defects.

- Cut in neatly.

Ease before coating and between coats.

PRIMING JOINERY

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

WORKSHOP COATING OF CONCEALED JOINERY SURFACES

General: Apply coatings to all surfaces of components.

EXTERIOR PAINT TO TIMBER

Paint to be breathable, gloss hardwearing, non-flake & allows surface to breathe. Auro Gloss Paint

516. 2-3 No. coats to be built up to manufacturers requirements

Colour to be confirmed, true samples to be prepared by contractor and approved by the CA.

10.0 HERITAGE FEATURES:

10.1 CHIMNEY:

Carefully remove existing cement render to chimney, avoiding mechanical tools which could damage brickwork. Assess condition of structural brickwork and brick corbelling and undertake repairs where necessary.

Damaged bricks are to be carefully cut out along with surrounding mortar to a depth of 20-30mm. Clean out the opening thoroughly, remove all loose dust and debris. Pre-wet the substrate to ensure that it is adequately damp before repair. Replacement bricks to match existing (approval of sample by CA required), reclaimed bricks are preferred.

Apply matching lime mortar to the rear face of a replacement brick and insert the new brick into the opening and tap it gently into position using a brick hammer. ~Ensure the replacement brick is level and flush with the surrounding brickwork. Finish and tool the joints to match the existing lime pointing, ensuring a consistent appearance with the original masonry.

Remove vegetation and treat with biocide to prevent further growth (see Section 3.2). DOFF steam cleaning of brickwork to remove remaining debris (see Section 3.3).

Lead soakers to be Code 4 with an upstand not less than 75mm and underlap not less than 100mm.

Following repairs and removal of vegetation, the chimney faces are to be re-rendered with new hydraulic lime (as per specification) ensuring that brick corbelling details remain visible and pronounced.



New chimney pots are to be Dublin Red terracotta 600mm height (see image for reference of style). Carefully remove existing concrete capping prior to installation. Lay wire mesh within masonry opening to prevent rodent ingress. New chimney pots to be embedded within new hydraulic-lime render laid to fall to edge. Provide new lead (Code 5) counter flashing.

10.2 SHOPFRONT TILING:

All finished tiling is to be laid to existing falls towards street and to prevent water pooling at the entrance. The appearance should be smooth and even with regular joints and accurate to line level, and profile. Bedding should be firm to prevent rocking and laid in a uniform thickness.

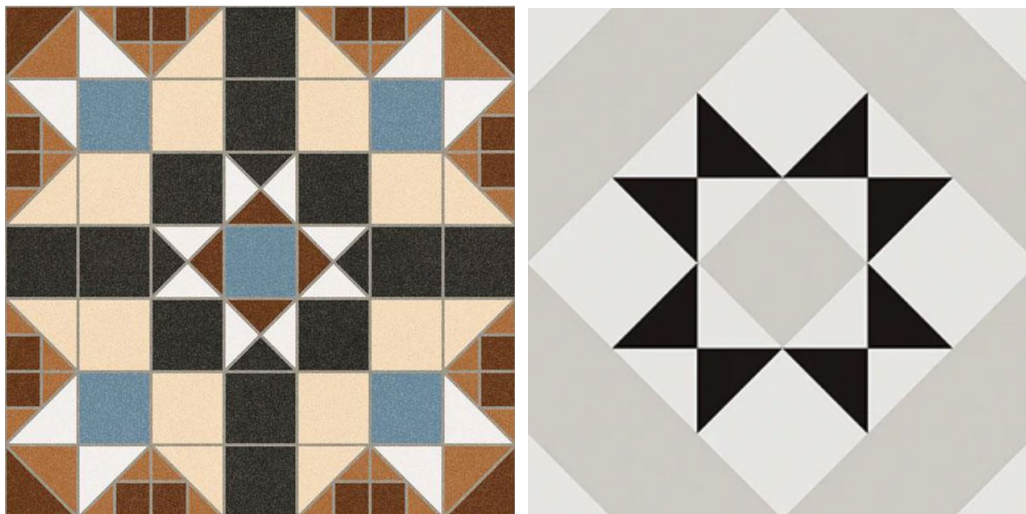
Lay new sand/cement screed to existing falls towards street. Provide polymer-modified flexible cementitious tile adhesive to IS EN 12004 which is suitable for ceramic tiles. Ensure minimum 95% adhesive contact.

Grouting should be waterproof cementitious which is frost resistant and suitable for external use. Refer to drawings for grouting widths.

All floor tiles to meet IS EN 14411 – Ceramic Tiles, IS EN 12004 – Tile Adhesives, and IS EN 13888 Grouting Materials .

All tiles are to be suitable for external use, including frost resistant, slip resistant, suitable for wet environments, and resistant to de-icing salts and staining. Tiles should meet standard flexural strength of 250 kgf/cm². All tiles should be uniform shape and finish.

Contractor to provide on-site samples of heritage style tiles (dimensions range from 20cm x 20cm to 35cm x 35cm) for selection by CA. Refer to the attached images for style reference:



10.3 Wrought Iron Gate

Gates to be manufactured by specialist metalwork fabricator to dimensions and design outlined in tender drawings (DWG 7000). On site measurements and consultation with contractors should be undertaken to ensure correct fitting on site within new shopfront cladding.

Gate fixings to be wall-mounted to match the position of the existing gates and should be secured in open and closed positions without the need for a drop bolt. Gates are manually operated with simple latch and lock.

All fixings to match material and finish of gates.

Gates to be galvanised and powder-coat finish to RAL 9005 (Jet Black). True colour sample to be approved on site by CA.

10.4: Natural Slates:

For replacement natural slate tiles, main contractor to undertake slate analysis before placing order (allow enough time for this to be completed). Obtain 2 samples from the quarry representative samples of replacement slate type and submit to CA for approval.

For each consignment of slate submit to CA the original delivery notes or invoices to confirm slate source. Check, record and retain/catalogue all pallet ID and

BSEN conformity labels and include within the Health & Safety File on completion.



DAVIDKELLY
PARTNERSHIP
CHARTERED ENGINEERS

**Roof Works and Alterations to 26 McCurtain Street,
Fermoy, Co. Cork for Cork County Council**

SPECIFICATION

**July 2026
Rev. 0**

Job No. 26033



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C41

Repairing/Conserving Masonry

Generally/ preparation

110 Scope of Work

1. Schedule: Lifting and re-setting of parapet; repointing, pinning and flaunching chimneys. Refer to drawings for type and location of repair work.
2. Records of masonry to be repaired: Before starting work, use measurements and photographs as appropriate to record bonding patterns, joint widths, special features, etc.
3. Identification of masonry units to be removed, replaced or repaired: Mark clearly, but not indelibly, on face of masonry units or parts of units to be cut out and replaced. Transcribe markings to drawings/ photographs to form a permanent record of the works. Provide record in pdf format to Employers Representative on completion of the works.

120 Site Inspection

1. Purpose: To confirm type and extent of repair/renovation/conservation work shown on drawings and described in survey reports and schedules of work.
2. Parties involved: Contractor, Employer's Representative, Architect, Engineer
3. Timing: At least 5 working days before starting each section of work
4. Instructions issued during inspection: To be confirmed by Employer's Representative.

130 Removal of Plant Growths from Masonry

1. Plants, root systems and associated soil/ debris: Carefully remove from joints, voids and facework.
2. Removal of vegetation: : Remove ivy and vegetation beginning at the outer and top edges of the growth. It may be necessary to carefully lever the stem and aerial rootlets away from the face of the structure taking care not to disturb the masonry. Dispose of all arisings to licensed landfill.
3. Removal of roots: True roots embedded in the structure should be carefully teased out, pulling out the entire root where possible. Deeply embedded roots may need to be cut. All cut surfaces shall be treated immediately with neat glyphosate herbicide.
4. Treatment of ivy / plant stems:: Drill at the base of each cut stem and fit sustained release herbicide plugs (Ecoplugs or similar). Plugs to be installed at outer edge of stump at 50mm centres around circumference of stump.
5. Unwanted plants close to masonry: Where removal of root system is not possible or desirable, cut through stem as close to the ground as possible. Remove bark from stump and apply herbicide paste. Leave stump to wither.
6. Soft plant growth:: Leave in place. Only woody stemmed plants such as ivy, buddleia, valerian to be removed.

Workmanship generally

160 Protection of Masonry

1. Masonry: Prevent damage, particularly to arrises, projecting features and delicate, friable surfaces. Prevent mortar/grout splashes and other staining and marking on facework. Protect using suitable non-staining slats, boards, tarpaulins, etc. Remove protection on completion of the work.
2. Curing: Protect new lime work from direct sunlight, heavy rain or excessive drying by wind. Protect NHL 5 mortars for 48 hours, NHL 3.5 mortars for 72 hours and NHL 2 mortars for 96 hours.
3. Shrinkage during Curing: Light shrinkage may occur on heavier joints during the first twenty-four hours. If this occurs spray on a light water mist and tap gently with the bristle brush to close the crack. Dampen curing mortar with light water mist spray 3 times a day during warm weather/active drying conditions.

4. Protecting NHL mortars:: Protect from Frost, Heavy Rain, Strong Wind or Direct Sun for minimum of:
NHL 5 48 Hours
NHL 3.5 72 Hours
NHL 2 96 Hours
with damp hessian held 50-75mm off the wall face and plastic sheeting over where necessary to protect against heavy rain.

165 Structural Stability

1. General: Maintain stability of masonry. Report defects, including signs of movement that are exposed or become apparent during the removal of masonry units.

170 Disturbance to Retained Masonry

1. Retained masonry in the vicinity of repair works: Disturb as little as possible.
2. Existing retained masonry: Do not cut or adjust to accommodate new or reused units.
3. Retained loose masonry units and those vulnerable to movement during repair works: Prop or wedge so as to be firmly and correctly positioned.

180 Workmanship

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

185 Adverse Weather

1. General: Do not use frozen materials or lay masonry units on frozen surfaces.
2. Air temperature: Do not bed masonry units or repoint:
 - 2.1. In NHL 3.5 or 5 hydraulic lime:sand mortars when ambient air temperature is at or below 5°C and falling or unless it is at least 3°C and rising.
 - 2.2. In NHL 2 hydraulic lime:sand mortars when ambient air temperature is at or below 8°C and falling or unless it is at least 5°C and rising.
 - 2.3. In nonhydraulic lime:sand mortars in cold weather, unless approval is given.
3. Temperature of the work: Maintain above freezing until mortar has fully set.
4. Rain, snow and dew: Protect masonry by covering during precipitation, and at all times when work is not proceeding.
5. Hot conditions and drying winds: Prevent masonry from drying out rapidly.
6. New mortar damaged by frost: Rake out and replace.

190 Control Samples

1. General: Complete a 2m x 2m area of finished repointing, and arrange for inspection of sample by Employer's Representative for approval before commencement of works. Allow 5 working days for inspection after notification that sample is ready.

Materials/ production/ accessories

215 Material Samples

1. Representative samples of designated materials: Submit before placing orders.
 - 1.1. Designated materials: sands, grit, lime
2. Retention of samples: Unless instructed otherwise, retain samples on-site for reference. Protect from damage and contamination.

245 Replacement Stone Units

1. Sizes and profiles: To match existing masonry. Maintain existing joint widths.

2. Sinkings for fixings, joggles and lifting devices: Accurately aligned and positioned in relation to existing masonry.
3. Marking: Mark each block/ dressing clearly and indelibly on a concealed face to indicate the natural bed and position in the finished work.

250 Stone Orientation

1. Orientation of natural bed
 - 1.1. In plain walling: Horizontal.
 - 1.2. In projecting stones and copings: Vertical and perpendicular to wall face.
 - 1.3. In arches: Perpendicular to line of thrust.

255 Ashlar Blocks/Dressings

1. Cutting and dressing stone: To true and regular surfaces, free from hollow or rough areas.

Dismantling/ rebuilding

310 Dismantling Masonry for Reuse

1. Masonry units to be reused: Remove carefully and in one piece.
 - 1.1. Treatment: Clean off old mortar, organic growths and dirt, and leave units in a suitable condition for rebuilding.
 - 1.2. Identification: Mark each unit clearly and indelibly on a concealed face, indicating its original position in the construction. Transcribe markings to drawings/photographs.
2. Record:: A record of the masonry will be made by the project archaeologist prior to the commencement of dismantling of the masonry. This record will be sufficiently accurate to allow individual stones to be identified and located. The contractor will use this record of the section to be dismantled to mark on enlarged copies of the survey drawings the location of each labelled stone for reinstatement in their original positions.

Record the individual stones on enlarged photo-rectified images from the survey, number, dismantle, and lay the individual stones on the scaffold. Random rubble masonry requires the retention of all pinning stones so that the rhythm and texture of the original may be replicated and where it is built to courses the same attention to coursing is essential.

3. Procedure:: Dismantle by hand starting with the removal of coping stones where they exist or dismantling the cap. Rake out the joints and prise the stones out from the middle of the wall. Rake out with hand tools; do not use grinding discs.

320 Rebuilding

1. Replacement materials: Parapets: use dismantled stone. New stone, as clause 245 if required.
2. Mortar: As section Z21.
 - 2.1. Standard: IS EN 998-2
 - 2.2. Mix: 1:2½ NHL 3.5 hydraulic lime:sand
 - 2.3. Sand source/ type: IS EN 12620
3. Rebuilding: To match previous face and joint lines, joint widths and bonding using the record created prior to dismantling. Adequately bonded to retained work/backing masonry, as appropriate.
4. Joint surfaces: Dampen, as necessary, to control suction.
5. Laying masonry units: On a full bed of mortar; perpend joints filled.
6. Exposed faces: Remove mortar and grout splashes immediately.
7. Joints: To match existing

Replacements and insertions - Not Used

Tooling/ dressing stone in situ - Not Used

Mortar repairs - Not Used

Crack repairs/ ties/ reinforcement

630 Ties / Crack Stitching

1. Description: FOR CRACK STITCHING IN NHL MORTAR
2. Tie system
 - 2.1. Standard: To IS EN 1090-1
3. Type/ Diameter: 8mm Grade 304 Stainless Steel helical bar
4. Length:: 1m
5. Adjacent masonry: Do not damage during drilling. Keep cavities behind facings free from debris.
6. Installation::
 1. Rake out crack and remove loose mortar.
 2. Pack and fully fill the crack tightly with new mortar and pinning stones. If necessary to consolidate the masonry around the crack, locally grout either side of the crack as described below.
 3. Drill 12mm diameter holes for diagonal stitches or rake out bed joint for horizontal stitch.
 4. Set helical bar in NHL3.5 mortar across the crack at 200-400mm vertical centres over the height of the crack. Recess the bars 50mm from the face of the wall.
7. Exposed masonry faces: Clean and free from grout/mortar stains.

640 Pinning Unsupported Masonry

1. Description: UNSUPPORTED STONE AT RISK OF FALLING
2. Propping:: Prop the unsupported stone with 150mm x 75mm C16 pressure-treated timber or similar. Use hardwood folding wedges to make the props snug against the masonry.
3. Dowels/ Pins
 - 3.1. Standard: To IS EN 1090-1
 - 3.2. Type: Austenitic stainless steel threaded rods
 - 3.3. Diameter: 10mm
 - 3.4. Washer and Nut:: 2no. 50mm square x 3mm thick stainless steel washers and nut.
 - 3.5. Additional requirements: Length of pins 600-1000mm. Use Anchor sleeve (Ref. Product Fischer Injection Anchor Sleeve FIS HL) if voids encountered in masonry substrate
4. Resin: Low viscosity resin to approval. (Ref. product. Sika AnchorFix -1)
5. Holes: Drill carefully, sloping upwards into background. Remove drilling dust and debris and keep dry.
6. Filling holes
 - 6.1. Check that dowel lengths are correct before filling with resin.
 - 6.2. Use sufficient resin so that when the dowel is inserted the resin is dispersed to achieve an effective repair.
7. Exposed faces: Keep clean and free from resin stains. Use temporary plugging material and/or isolating membranes as necessary.
8. Clearances: Keep ends of ties and resin back from face of masonry.
9. Making good after resin has cured: Mortar, as clause 690

675 Joint Reinforcement

1. Description: FOR STITCHING ACROSS CRACKS
2. Existing construction: Solid random rubble
3. Joint width: 10 - 20mm
4. Reinforcement system
 - 4.1. Standard: To IS EN 1090-1
 - 4.2. Manufacturer: Submit proposals
 - 4.3. Type: Stainless steel helical bar set in thixotropic resin.
5. Installation: Remove existing mortar without damaging adjacent masonry or widening joints. Form recess to depth recommended by reinforcement manufacturer. Remove dust and debris. Install reinforcement using methods recommended by manufacturer.
6. Joints: Repoint, as Clause 820.

690 Making Good to Injection and Insertion Holes

1. Preparation: Clean out holes thoroughly.
2. Repair mortar: To match existing masonry units/joints in colour and texture. Fill holes and finish mortar neatly and flush with surrounding masonry.

Grouting rubble filled cores - Not Used

Pointing/ repointing

820 Pointing

1. Description: STONework GENERALLY
2. Preparation of joints: Rake out existing loose mortar
3. Mortar: As section Z21.
 - 3.1. Standard: IS EN 998-2
 - 3.2. Mix: 1:2½ NHL 2 hydraulic lime:sand. Adjust mix to match lime volume to void ratio of aggregate.
 - 3.3. Sand source/ type: Sharp medium sand. Colour to match existing mortar. Coarse aggregate to be added to match the grading and appearance of the existing mortar.
 - 3.4. Appearance:: To maintain the character of the monument, the new mortar used should match the original mortar as closely as possible.
4. Joint profile/ finish: Finished joints shall be struck level with the masonry surface. On achieving the initial set, hammer the joint with a stiff bristle brush to ensure the tightness of the joint and to expose the coarse aggregate.
Incorporate pinning stones recovered from the raked-out material, supplemented as necessary with similar stones, into the repointed joints to keep joint depth less than 20mm. Fit pinnings horizontally wherever possible.
5. Other requirements: Grout deep voids, as Clause 720

840 Pointing with Tools/Irons

1. General: Press mortar well into joints using pointing tools/irons that fit into the joints, so that they are fully filled.
2. Face of masonry: Keep clear of mortar. Use suitable temporary adhesive tape on each side of joints where necessary. Finish joints neatly.

860 Beaten Back Finish to Joints

1. Timing: After initial mortar set has taken place remove laitance and excess fines by hitting the mortar at right angles to the surface with a stiff bristle brush, to expose the coarse aggregate, give a coarse texture and to tighten the joint.

C51

Repairing/ renovating/ conserving timber

General

110 Inspection

1. Purpose: To confirm nature and extent of repair/ renovation/ conservation work shown on drawings, and described in survey reports and schedules of work.
2. Parties involved: Foreman carpenter Structural engineer Employer's Representative
3. Timing: At least 5 days before starting each section of work
4. Instructions issued during inspection: Confirm in writing, with drawings and schedules as required, before commencing work

150 Timber procurement

1. Timber (including timber for wood-based products): Obtained from well-managed forests and/ or plantations in accordance with:
 - 1.1. The laws governing forest management in the producer country or countries.
 - 1.2. International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
2. Documentation: Provide either in accordance with the chain of custody certification scheme requirements:
 - 2.1. documentary evidence (that has been or can be independently verified) regarding the provenance of all timber supplied; or
 - 2.2. evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood-based products.
3. Chain of Custody Certification scheme: Forest Stewardship Council (FSC) or Programme for the Endorsement of Forest Certification (PEFC)

160 Timber supplier

1. Supplier: Contractor's choice

Structural repairs/ alterations

230 Member strengthening – external reinforcement to floor beam

1. Reinforcement: Timber
 - 1.1. Size: 120x60mm C16
2. Fixing to existing timber: M12 carbon steel bolts at 600 mm centres on centreline of channels As detailed on drawing ???

230 Member strengthening – external reinforcement to rafters Type A

1. Reinforcement: Carbon steel parallel flange channel
 - 1.1. Size: 230x75PFC
2. Fixing to existing timber: M12 carbon steel bolts at 600 mm centres on centreline of channels

240 End repairs – lap

1. Defective timber: Cut out
2. Lap member: Timber
 - 2.1. Size: 200x100mm and 150x75mm
3. Fixing to existing timber: 2no. 10 mm-diameter x 90 mm-long coach screws at 100 mm centres.

250 Timber section repairs – external splice at ceiling joist ends

1. Defective timber: Cut out to clean, regular profile.
2. Replacement timber: none
3. Splice plates
 - 3.1. Material: Stainless steel Gr 306
 - 3.2. Size: 100 mm high x 600 long x 10 thick, centred longitudinally on joint
4. Fixing to existing timber: M10 gr 306 stainless steel bolts, as detailed

Products

310 Structural softwood (graded direct to strength class)

1. Description: FOR STRUCTURAL USE GENERALLY
2. Strength class to IS EN 338: C16
3. Treatment
 - 3.1. Preservative treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C8
 - 3.1.1. Design service life: 40 years
 - 3.2. Fire-retardant treatment: None required
4. Moisture content (maximum) at time of installation: 12%
5. Other requirements: Wane not permitted

410 Carbon steel sections and plates

1. Description: FOR SPLICE PLATES TO TRUSS ENDS
2. Standard: To IS EN 10025-2.
3. Grade: S275JR
4. Source: Obtain steel from a source accredited to a national or internationally accepted quality standard.
5. Protection
 - 5.1. Generally: Hot dipped galvanised to 80 micron dry film thickness
 - 5.2. Ends built into external walls: Apply two coats bituminous paint 200 micron dry film thickness

420 Stainless steel sections and plates

1. Description: FOR SPLICE PLATES TO CEILING JOISTS
2. Standard: To IS EN 10088.
3. Grade: G304
4. Source: Obtain steel from a source accredited to a national or internationally accepted quality standard.

440 Carbon steel bolt assemblies

1. Description: FOR GENERAL USE
2. Bolts: To BS 4190.
 - 2.1. Designation: Black bolts, Grade 8.8
 - 2.2. Finish as delivered: Galvanized
3. Nuts and washers: Material, grades and finishes to suit bolts.
 - 3.1. Washer size
 - 3.1.1. In contact with timber: Diameter: 3 times bolt diameter; thickness: 0.3 times bolt diameter.
 - 3.1.2. In contact with steel section/ plate (required when surface finish may be damaged by nut or bolt head rotating): To BS 4320.

450 Stainless steel bolt assemblies

1. Description: FOR GENERAL USE
2. Bolts: To BS EN ISO 3506-1.
 - 2.1. Designation: A2-70
3. Nuts and washers: To suit grade of bolt.
 - 3.1. Washer size
 - 3.1.1. In contact with timber: Diameter: 2 times bolt diameter; thickness: 0.2 times bolt diameter.
 - 3.1.2. In contact with steel section/ plate (required when surface finish may be damaged by nut or bolt head rotating): To BS 4320.

470 Nails

1. Description: FOR GENERAL USE
2. Standard: As section Z20.
3. Type: Annular ringed shank
4. Material: Steel.
 - 4.1. Strength (minimum): Ultimate tensile strength 600 N/mm²
5. Finish as delivered: Galvanized

480 Screws

1. Description: FOR GENERAL USE
2. Standard: As section Z20.
3. Material: Stainless steel
4. Tensile strength (minimum): 550 N/mm²
5. Finish as delivered: None

490 Coach screws

1. Description: FOR GENERAL USE
2. Standard: To DIN 571
3. Material: Stainless steel
4. Tensile strength (minimum): 550 N/mm².
5. Finish as delivered: None

Execution

600 Workmanship

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

610 Temporary supports/ propping

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

620 Protection of timber and wood components before and during installation

1. 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.

2. Handling: Do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing.

650 Dimensions generally

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

660 Cross section dimensions of structural softwood and hardwood

1. Dimensions: Dimensions in this specification and shown on drawings are target sizes as defined in BS EN 336.
2. Tolerances: The tolerance indicators (T1) and (T2) specify the maximum permitted deviations from target sizes as stated in BS EN 336, clause 4.3:
 - 2.1. Tolerance class 1 (T1) for sawn surfaces.
 - 2.2. Tolerance class 2 (T2) for further processed surfaces.

665 Cross section dimensions of non-structural softwood

1. Dimensions: Dimensions in this specification and shown on drawings are finished sizes.
2. Maximum permitted deviations from finished sizes: As stated in BS EN 1313-1, clause 6 for sawn sections.

670 Cross section dimensions of non-structural hardwood

1. Dimensions: Dimensions in this specification and shown on drawings are finished sizes.
2. Maximum permitted deviations from finished sizes: As stated in BS EN 1313-2:
 - 2.1. Clause 6 for sawn sections.
 - 2.2. Clause NA.3 for further processed sections.

690 Processing treated timber

1. Cutting and machining: Carry out as much as possible before treatment.
2. Extensively processed timber: Retreat timber sawn lengthways, thickened, planed, ploughed, etc.
3. Surfaces exposed by minor cutting and/ or drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

750 Cleaning dirty or stained wood

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

760 Repair of members – cutting out members

1. Extent of timber removal: Cut out full cross section of member where wood is defective or decayed, plus 50 mm of sound wood.
2. Distance from face of support to cut end of existing timber: Obtain instructions if dimension exceeds 300 mm.
3. Joint profile: Square cut

770 Repair of compression members – piecing in

1. Defective wood: Remove only decayed or defective wood. Finish cut-outs to clean, regular profiles.
2. Timber inserts: Cut accurately to fit. Glue and pin in place. Lie of grain to match as closely as possible that of parent timber.
3. Joint profile: Scarf joint at 1 in 12 to grain with single 40 mm step

780 Repair of distorted timber members

1. Generally: Repair to shape that member has assumed.

840 Fixing framing anchors and cleats

1. Before installation: Submit details if joint geometry prevents installation to manufacturer's recommendations.
2. Installation: Secure using not less than number of fasteners recommended by manufacturer.

860 Moisture content checking

1. Procedure: Check moisture content of timber sections with an approved electrical moisture meter.
2. Test results: Keep records of all tests. If moisture content falls outside specified range, obtain instructions.

Completion

910 Mechanically fastened joints

1. General: Inspect accessible bolted, coach screwed and timber pegged joints and tighten fasteners if necessary.
 - 1.1. Timing: On Completion and at end of Defects Liability Period or Rectification Period.

920 Dating timbers used in structural repairs

1. Principal replacement members: Mark by carving or branding with date of repair and, when appropriate, initials of carpenter, in characters 20-25 mm high.
2. Location of marks: Unobtrusive

Ω End of Section

F30

Accessories/Sundry Items for Brick/Block/Stone Walling

Cavities - Not Used

Reinforcing/ fixing accessories - Not Used

Flexible damp-proof courses/ cavity trays - Not Used

Installation of dpcs/ cavity trays - Not Used

Joints - Not Used

Proprietary sills/ lintels/ copings/ dressings

Miscellaneous items - Not Used

Ω End of Section

G20

Carpentry/ timber-framing/ first fixing

General

105 Timber procurement

1. Timber (including timber for wood-based products): Obtained from well-managed forests/ plantations in accordance with:
 - 1.1. The laws governing forest management in the producer country or countries.
 - 1.2. International agreements such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
2. Documentation: Provide either in accordance with chain of custody certification scheme requirements:
 - 2.1. Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied. or
 - 2.2. Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood-based products.
3. Chain of Custody Certification scheme: Submit proposals
 - 3.1. Other evidence: None

160 Grading and marking of softwood

1. 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 'DG' (dry-graded).
2. Timber wet-graded and specified for installation at higher moisture contents: graded at an average moisture content above 20% and unmarked.
3. Structural timber members cut from large graded sections: Regraded to approval and marked accordingly.

Products

210 Structural softwood (graded direct to strength class)

1. Description: FOR STRUCTURAL USE GENERALLY
2. Grading standard: To BS EN 14081-1 and BS 4978, or other suitable national equivalent, and so marked.
3. Strength class to BS EN 338: C18
4. Treatment
 - 4.1. Preservative treatment: None required
 - 4.1.1. Design service life: 40 years
 - 4.2. Flame-retardant treatment: None required

230 Structural softwood (strength class not specified)

1. Description: FOR STRUCTURAL USE GENERALLY
2. Species: European redwood
3. Grading standard: To the appropriate IS EN 14081-1-compliant standard.
 - 3.1. Grade: GS to BS 4978
4. Treatment
 - 4.1. Preservative treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C8
 - 4.1.1. Design service life: 40 years
 - 4.2. Flame-retardant treatment: None required

311 Non-structural plywood

1. Description: FOR GUTTERS
2. Standard: To an approved national standard.
3. Thickness: 18mm
4. Appearance class to BS EN 635: III
5. Use class to BS EN 335: Use Class 2 Subclass 3.1
6. Bonding quality to BS EN 314-2: Class 2
7. Finish: Unsanded
8. Edges: Square

Workmanship generally

401 Cross section dimensions of structural softwood and hardwood

1. Dimensions: Dimensions in this specification and shown on drawings are target sizes as defined in IS EN 336.
2. Tolerances: The tolerance indicators (T1 and T2) specify the maximum permitted deviations from target sizes as stated in IS EN 336, clause 4.3:
 - 2.1. Tolerance Class 1 (T1) for sawn surfaces.
 - 2.2. Tolerance Class 2 (T2) for further processed surfaces.

402 Cross section dimensions of non-structural softwood

1. Dimensions: Dimensions in this specification and shown on drawings are finished sizes.
2. Maximum permitted deviations from finished sizes: As stated in IS EN 1313-1, clause 6 for sawn sections.

403 Cross section dimensions of non-structural hardwood

1. Dimensions: Dimensions in this specification and shown on drawings are finished sizes.
2. Maximum permitted deviations from finished sizes: As stated in IS EN 1313-2:
 - 2.1. Clause 6 for sawn sections.
 - 2.2. Clause NA.3 for further processed sections.

420 Warping of timber

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

430 Selection and use of timber

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

435 Notches, holes and joints in timber

1. Notches and holes
 - 1.1. General: Avoid if possible.
 - 1.2. Sizes: Minimum needed to accommodate services.
 - 1.3. Position: Do not locate near knots or other defects.
 - 1.4. In same joist: Minimum of 100 mm apart horizontally.
 - 1.5. Notches in joists
 - 1.5.1. Position: Locate at top. Form by sawing down to a drilled hole.
 - 1.5.2. Depth (maximum): 0.15 x joist depth.
 - 1.5.3. Distance from supports: Between 0.1 and 0.2 x span.

- 1.6. Holes in joists
 - 1.6.1. Position: Locate on neutral axis.
 - 1.6.2. Diameter (maximum): 0.25 x joist depth.
 - 1.6.3. Centres (minimum): Three x diameter of largest hole.
 - 1.6.4. Distance from supports: Between 0.25 and 0.4 of span.
- 1.7. Notches in roof rafters, struts and truss members: Not permitted.
- 1.8. Holes in struts and columns: Locate on neutral axis.
 - 1.8.1. Diameter (maximum): 0.25 x minimum width of member.
 - 1.8.2. Centres (minimum): Three x diameter of largest hole.
 - 1.8.3. Distance from ends: Between 0.25 and 0.4 of span.
2. Scarf joints, finger joints and splice plates: Do not use without approval.

450 Moisture content

1. Moisture content of wood and wood-based products at time of installation: Not more than:
 - 1.1. Covered in generally unheated spaces: 24%.
 - 1.2. Covered in generally heated spaces: 20%.
 - 1.3. Internal in continuously heated spaces: 20%.

451 Moisture content testing

1. Procedure: When instructed, test timber sections with an approved electrical moisture meter.
2. Test sample: Test 5%, but not less than ten lengths of each cross section in the centre of the length.
3. Test results: 90% of values obtained to be within the specified range. Provide records of all tests.

510 Protection

1. Generally: Keep timber dry and do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing.
2. 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.
3. Trussed rafters: Keep vertical during handling and storage.

540 Clear finishes

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

550 Exposed timber

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

Jointing timber

570 Jointing/ fixing generally

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

580 Framing anchors

1. Manufacturer: Contractor's choice
 - 1.1. Product reference: Submit proposals

2. Material/ finish: Galvanized low-carbon steel
3. Fasteners: Galvanized or sherardized square twist nails.
 - 3.1. Size: Not less than size recommended by anchor manufacturer.
4. Fixing: Secure using not less than the number of nails recommended by anchor manufacturer.

615 Bolt/ screw assemblies

1. Description: TRUSS BEARING REPAIR
2. Designation: Stainless steel bolts to BS EN ISO 3506-1, Grade A2
3. Size: M12
4. Nuts and washers: Material grade and finish to suit bolts.
5. Washer dimensions: Diameter/ side length of washers in contact with timber faces to be a minimum of three times bolt diameter, with a thickness of not less than 0.3 times bolt diameter.

660 Purpose-made

1. Description: CHANNELS AT TRUSS REPAIRS
2. Drawing references: 501
3. Material: Carbon Steel S275
4. Finish: Galvanised
5. Quality of materials and workmanship: As section Z11.

670 Anti-corrosion finishes for fasteners

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

Erection and installation

750 Modifications/ Repairs

1. Defects due to detailing or fabrication errors: Report without delay.
2. Methods of rectification: Obtain approval of proposals before starting modification or remedial work.
3. 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

1. Provision: As necessary to maintain structural timber components in position and to ensure complete stability during construction.

770 Additional supports

1. 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
2. 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

1. Timber surfaces which are to transmit loads: Finished to ensure close contact over the whole of the designed bearing area.
2. Packings: Where provided, to cover the whole of the designed bearing area.
 - 2.1. Crushing strength: Not less than timber being supported.

2.2. In external or inaccessible locations: Rot and corrosion proof.

780 Wall plates

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

784 Joists generally

1. Centres: Equal, and not exceeding designed spacing.
2. Bowed joists: Installed with positive camber.
3. End joists: Positioned approximately 50 mm from masonry walls.

786 Joists on hangers

1. Hangers: Bedded directly on and hard against supporting construction. Do not use packs or bed on mortar.
2. Joists: Cut to leave not more than 6 mm gap between ends of joists and back of hanger. Rebated to lie flush with underside of hangers.
3. Fixing to hangers: A nail in every hole.

Ω End of Section

H10

Patent glazing

Types of patent glazing

115 Patent glazing

Not used

Ω End of Section

H62

Natural slating

Types of slating

105 Roof slating Type A

1. Description: TO PITCHED ROOF SELECTED ROOF SLOPES (ORIGINAL NATURAL SLATE RECLAIMED FROM SITE)
2. Substrate: Roof battens at 200 mm centres
3. Pitch: 30°
4. Underlay: Reinforced bitumen membrane to BS 8747, type 5U Reinforced bitumen membrane to BS 8747, type 1F
 - 4.1. Recycled content: 75% (minimum) to IS EN ISO 14021
 - 4.2. Direction: Parallel to eaves.
 - 4.3. Head-lap (minimum): 100 mm
5. Battens
 - 5.1. Size: 44 x 35 mm to SR 82
 - 5.2. Fixing: 65 x 3.35 mm galvanized annular ring shank nails
6. Slates
 - 6.1. Supplier: Contractor's choice
 - 6.1.1. Product reference: RECLAMED BLUE BANGOR
 - 6.2. Type: same as original slates
 - 6.3. Size: same as original slates
 - 6.4. Head-lap (minimum): 100 mm
7. Fixing: Two nails each slate.

105 Roof slating Type B

1. Description: TO PITCHED ROOF SELECTED ROOF SLOPES (MODERN SLATE)
2. Substrate: Roof battens at 200 mm centres
3. Pitch: 30°
4. Underlay: Reinforced bitumen membrane to BS 8747, type 5U Reinforced bitumen membrane to BS 8747, type 1F
 - 4.1. Recycled content: 75% (minimum) to IS EN ISO 14021
 - 4.2. Direction: Parallel to eaves.
 - 4.3. Head-lap (minimum): 100 mm
5. Battens
 - 5.1. Size: 44 x 35 mm to SR 82
 - 5.2. Fixing: 65 x 3.35 mm galvanized annular ring shank nails
6. Slates
 - 6.1. Supplier: Contractor's choice
 - 6.1.1. Product reference: Fibre cement
 - 6.2. Type: same as original slates
 - 6.3. Size: same as original slates
 - 6.4. Head-lap (minimum): 100 mm
7. Fixing: Two nails each slate.

Performance - Not Used

Slating generally

210 Basic workmanship

1. General: Fix slating and accessories to make the whole sound and weathertight at earliest opportunity.
2. Setting out: To true lines and regular appearance, with neat fit at edges, junctions and features.
3. Fixings for slating accessories: As recommended by manufacturer.
4. Gutters and pipes: Keep free of debris. Clean out at completion.

220 Removing existing slating

1. General: Carefully remove slates, battens, underlay, etc. with minimum disturbance of adjacent retained slating.
2. Undamaged slates: Set aside for reuse.

240 Underlay

1. Handling: Do not tear or puncture.
2. Laying: Maintain consistent tautness.
3. Vertical laps (minimum): 100 mm wide, coinciding with supports and securely fixed.
4. Fixing: Galvanized steel, copper or aluminium 20 x 3 mm extra-large clout head nails.
5. Eaves: Where exposed, use an external grade (UV resistant) underlay or a proprietary eaves support product.
6. Penetrations: Use proprietary underlay seals or cut underlay to give a watertight fit around pipes and components.
7. Ventilation paths: Do not obstruct.

245 Battens/ counter battens

1. Timber: Sawn softwood.
 - 1.1. Species: In accordance with S.R. 82:2017 4.10.1
 - 1.2. Permissible characteristics and defects: Not to exceed limits in S.R. 82:2017.
 - 1.3. Grading: Fully factory pre-graded in accordance with IS EN 140181-1
 - 1.4. Moisture content at time of fixing and covering (maximum): 22%
2. Preservative treatment: As section Z12 and IS EN 15228 and BS 8417

265 Batten fixing

1. Setting out: Align parallel to ridge in straight horizontal lines to gauge of slates. Align on adjacent areas.
2. Batten length (minimum): Sufficient to span over three supports.
3. Joints in length: Square cut. Butt centrally on supports. Joints must not occur more than once in any group of four battens on one support.
4. Additional battens: Provide where unsupported laps in underlay occur between battens.
5. Fixing: Each batten to each support. Splay fix at joints in length.

272 Timber for slating substrate work

1. Timber: Sawn softwood, free from wane, pitch pockets, decay and insect attack (ambrosia beetle excepted).
 - 1.1. Moisture content at time of fixing and covering (maximum): 22%.
2. Preservative treatment: As section Z12 and Wood Protection Association Commodity Specification C8.
 - 2.1. Type: Contractor's choice

275 Slate fixing

1. Setting out: Lay slates with an even overall appearance with slightly open (maximum 5 mm) butt joints. Align tails.
2. Slate thickness: Consistent in any one course. Lay with thicker end as tail.
3. Ends of courses: Use extra wide slates to maintain bond and to ensure that cut slates are as large as possible. Do not use slates less than 150 mm wide.
4. Top course: Head-nail short course to maintain gauge.
5. Fixing: Centre nail each slate twice through countersunk holes 20-25 mm from side edges.
 - 5.1. Nails: Copper clout to BS 1202-2 or aluminium clout to BS 1202-3.
 - 5.2. Nail dimensions: Determine in accordance with BS 5534 to suit site exposure, withdrawal resistance and slate supplier's recommendations.

290 Mortar bedding/ Pointing

1. Mortar: As section Z21, 1:3 cement:sand, with plasticizing admixtures permitted.
 - 1.1. Bond strength providing resistance to uplift: In accordance with BS 5534.
2. Weather: Do not use in wet or frosty conditions or when imminent.
3. Preparation of concrete and clay tile accessories to be bedded: Wet and drain surface water before fixing.
4. Appearance: Finish neatly as work proceeds and remove residue.

Roof slating edges/ junctions/ features

305 Generally

1. Fittings and accessories: As recommended by slate supplier, do not improvise.
 - 1.1. Exposed fittings and accessories: To match slate colour and finish.
2. Cut slates: Cut only where necessary, to give straight, clean edges.
3. Flashings: Fix with or immediately after slating. Form neatly.

555 Mortar-bedded and mechanically fixed tile hips

1. Underlay: Lay courses over hip.
 - 1.1. Overlaps (minimum): 150 mm.
2. Roof slates: Cut and fix closely at hip.
3. Hip irons: Galvanized steel in accordance with BS 5534, clause 4.15.4.
 - 3.1. Fixing: To hip rafter or hip batten with not less than two zinc-coated steel screws.
4. Hip tiles
 - 4.1. Manufacturer: Re-use existing

660 Side abutments

1. Underlay: Turn up not less than 100 mm at abutments.
2. Abutment slates: Cut as necessary. Fix close to abutments.
3. Soakers: Interleave with abutment slates. Fix by turning down over head of abutment slates.

670 Top edge abutments

1. Underlay: Turn up not less than 100 mm at abutments.
2. Top slate courses: Fix close to abutments.

690 Roof windows

1. Underlay: Turn up not less than 100 mm at window surrounds under integral flashings/ soakers.

2. Roof slates: Cut as necessary and fix closely all round.

730 Lead roll ridges

1. Underlay: Lay courses over ridge.
 - 1.1. Overlap (minimum): 150 mm.
2. Top slate courses: Fit close to timber roll.

800 Change of roof pitch

1. Slating substrate work: Fix timber tilting fillet to support flashing and courses of slates above change of pitch.
2. Roof slates: Make weathertight with flashing.
 - 2.1. Courses above change of pitch: Fix undercourse and first course slates.
 - 2.2. Courses below change of pitch: Cut top two courses as necessary to maintain gauge. Head-nail top course.

Vertical slating edges/ junctions

920 Top edges

1. Top slate courses: Fix under abutment and make weathertight with flashings dressed down not less than 150 mm.

930 Side abutments

1. Slating substrate work: Chase abutment wall and insert stepped flashing.
 - 1.1. Flashing: Return not less than 75 mm behind slating, overlapping underlay and battens. Turn back to form a vertical welt.
2. Abutment slates: Cut and fix neatly.

950 Angles with soakers

1. Angle slates: Cut extra wide slates and fix to form a straight, close mitred junction.
2. Soakers: Interleave with angle slates. Fix by nailing to battens at top edge.

Ω End of Section

H71

Lead sheet fully supported roof and wall coverings/ flashings

Types of leadwork

110 Lead sheet fully supported roof covering

1. Description: TO FLAT ROOF
2. Roof covering system: Rolled lead sheet standing seam
3. Roof pitch: 1 IN 75
4. Fire performance
 - 4.1. Roof: No requirement
 - 4.2. Inner lining/ cavities: No requirement
 - 4.3. Cavity fire barriers: No requirement
5. Insurance and warranties: No requirement
6. Air and vapour control layer: As P10/
7. Insulation: No requirement
8. Sarking or roof boarding: As K11/515
9. Membrane: As P10/
10. Substrate: 18 mm plywood (as K11/515), on (tapered x 50 mm) treated timber battens forming a ventilated cavity
 - 10.1. Preparation: Not required
11. Sheet underlay: Building paper to *BS 1521*, Class A1
12. Type of lead: Rolled to IS EN 14783 and IS EN 12588
 - 12.1. Thickness: 2.50 or 2.65 mm (Code 6)
13. Pretreatment: Apply a thin coating of patination oil to the underside of the lead and allow it to dry before laying
14. Joints in direction of fall: Wood-cored rolls with splash lap
 - 14.1. Spacing: 675 mm
15. Eaves detail: Cut-off roll with welted apron
16. Cross joints: Not permitted
17. Ridge/ hip detail: Capped roll

209 Gutter lining – parapet

1. Substrate: Plywood (as K11/515), on 50 x 50 mm treated timber battens as ventilated cavity
 - 1.1. Preparation: No requirement
2. Sheet underlay: Building paper to *BS 1521*, Class A1
3. Type of lead: Rolled to IS EN 12588
 - 3.1. Thickness: 2.50 or 2.65 mm (Code 6)
4. Pretreatment: Apply a thin coating of patination oil to the underside of the lead and allow it to dry before laying
5. Joints in direction of fall: Wood-cored roll
 - 5.1. Type: Wood-cored roll
 - 5.2. Spacing: On centre line of gutter
6. Cross joints: Minimum 55 mm drip without splash lap
 - 6.1. Type: Minimum 55 mm drip without a splash lap, Wood-cored roll at gutter watershed
 - 6.2. Spacing: 2200 mm

7. Outlets: Catchpit with weir overflow through parapet

310 Ridge/ hip rolls to lead roofs

1. Core: Rounded timber.
 - 1.1. Size: 45 mm high x 45 mm wide
 - 1.2. Shape: Tapered to a flat base 30 mm wide
 - 1.3. Fixing: To ridge/ hip board, with brass or stainless steel countersunk screws at not more than 600 mm centres.
2. Roof covering: dress roofing sheets up roll to form: 50 mm upstand.
 - 2.1. Fixing: Nail each sheet at underlapping end.
3. Lead capping
 - 3.1. Type of lead: Rolled to IS EN 12588
 - 3.2. Thickness: As roof covering.
 - 3.3. Lengths: not more than 1500 mm.
 - 3.4. Wings: Extend not less than 75 mm on to roof.
 - 3.5. Laps in length: Not less than 150 mm for ridges; 100 mm for hips.
4. Fixing: Secure wings with one copper or stainless steel clip per roofing bay and at each lap.

420 Cover flashings

1. Description: TO LEAD FLAT ROOF UPSTANDS AND PARAPET VENTS
2. Sheet underlay: Building paper to *BS 1521*, Class A1
3. Lead sheet
 - 3.1. Type of lead: Rolled
 - 3.2. Thickness: 2.00 or 2.24 mm (Code 5)
4. Dimensions
 - 4.1. Lengths: not more than: 1000 mm.
 - 4.2. End-to-end joints: Laps of not less than 100 mm.
 - 4.3. Cover: Overlap to upstand of not less than 75 mm.
5. Fixing: Lead wedges into bed joint, clips to lead upstand at laps and 500 mm centres

470 Flashings

1. Description: Replacement flashings at roof lantern
2. Lead sheet
 - 2.1. Type of lead: Rolled
 - 2.2. Thickness: 2.00 or 2.24 mm (Code 5)
3. Dimensions
 - 3.1. Lengths: not more than: 1500 mm.
4. Fixing: Fixing: nail the top edge at 150 mm centres and welt the edge. Clip the bottom edge at laps and 500 mm centres.

472 Chimney flashings to slate roof

1. Description: TO ALL CHIMNEYS
2. Lead front apron
 - 2.1. Type of lead: Rolled to IS EN 12588
 - 2.2. Thickness: 2.00 or 2.24 mm (Code 5)
 - 2.3. Dimensions

- 2.3.1. Length: Width of chimney, plus not less than 150 mm underlap to each side flashing.
 - 2.3.2. Upstand: 100mm but not less than 75 mm.
 - 2.3.3. Cover to roof: not less than: 150 mm.
- 2.4. Fixing: Lead wedges into chase cut into stonework.
- 3. Lead soakers
 - 3.1. Type of lead: Rolled to IS EN 12588
 - 3.2. Thickness: 1.25 or 1.32 mm (Code 3).
 - 3.3. Dimensions
 - 3.3.1. Length: Slate/ tile gauge + lap + 25 mm.
 - 3.3.2. Upstand: Not less than 75 mm.
 - 3.3.3. Underlap: Not less than 100 mm.
- 4. Lead step flashings
 - 4.1. Type of lead: Rolled to IS EN 12588
 - 4.2. Thickness: 2.00 or 2.24 mm (Code 5)
 - 4.3. Dimensions
 - 4.3.1. Lengths: Not more than 1500mm.
 - 4.3.2. End-to-end joints: Laps of not less than 100 mm.
 - 4.3.3. Front end: Turn 75 mm around chimney over apron.
 - 4.3.4. Cover: Overlap to soaker upstands of not less than 65 mm.
 - 4.4. Fixing: Lead wedges into chase cut in stonework
- 5. Lead abutment flashings
 - 5.1. Type of lead: Rolled to IS EN 12588
 - 5.2. Thickness: 2.00 or 2.24 mm (Code 5)
 - 5.3. Dimensions
 - 5.3.1. Lengths: Not more than 1500mm.
 - 5.3.2. End-to-end joints: Laps of not less than 100 mm.
 - 5.3.3. Front end: Turn 75 mm around chimney over apron.
 - 5.3.4. Cover: Overlap to soaker upstands of not less than 65 mm.
 - 5.4. Fixing: Lead wedges into chase cut in stonework
- 6. Lead back gutter
 - 6.1. Type of lead: Rolled to IS EN 12588
 - 6.2. Thickness: 2.00 or 2.24 mm (Code 5)
 - 6.3. Dimensions
 - 6.3.1. Length: Width of chimney, plus not less than 100 mm overlap to each side flashing.
 - 6.3.2. Upstand: Not less than 100 mm.
 - 6.3.3. Gutter sole: Not less than 150 mm.
 - 6.3.4. Cover up roof: Not less than 225 mm.
- 7. Lead back gutter cover flashing
 - 7.1. Thickness: 2.00 or 2.24 mm (Code 5)
 - 7.2. Dimensions
 - 7.2.1. Length: Width of chimney, plus not less than 100 mm overlap to each side flashing.
 - 7.2.2. Cover: Overlap to back gutter upstand of not less than 75 mm.
 - 7.3. Fixing: Lead wedges into chase cut into stonework.

General requirements/ preparatory work

510 Workmanship generally

1. Standard: In accordance with IS EN 14783, IS EN 12588, BS 6915 and the latest edition of *Rolled lead sheet - the complete manual* published by the *Lead Sheet Training Academy (LSTA)*.
2. Fabrication and fixing: To provide a secure, free-draining and completely weathertight installation.
3. Operatives: Trained in the application of lead coverings/ flashings. Submit records of experience on request.
4. Preforming: Measure, mark, cut and form lead prior to assembly, wherever possible.
5. Marking out: With pencil, chalk or crayon. Do not use scribes or other sharp instruments without approval.
6. Bossing and forming: Straight and regular bends, leaving sheets free from ripples, kinks, buckling and cracks.
7. Solder: Use only where specified.
8. Sharp metal edges: Fold under or remove as work proceeds.
9. Finished work: Fully supported, adequately fixed to resist wind uplift but also able to accommodate thermal movement without distortion or stress.
10. Protection: Prevent staining, discolouration and damage by subsequent works.

515 Lead welding

1. In situ lead welding: Is permitted, subject to completion of a 'hot work permit' form and compliance with its requirements.

520 Lead sheet

1. Production method: Rolled, to IS EN 12588
2. Identification: Labelled to show compliance with the harmonized standard (hEN) IS EN 14783 where appropriate, and detail of the thickness/ code, weight and type.
3. Manufacturer: Contractor's choice
4. Verification: to demonstrate compliance with the product manufacturing standard,, performance standard, test standard, characteristics requirements and manufacturer set out in clause 520 'Lead sheet'.
 - 4.1. Submittals: Materials data sheets
 - 4.2. Timing: two weeks prior to commencement of works

560 Control samples

1. General: Complete areas of the finished work, and obtain approval of appearance before proceeding:
2. Size: Not less than 5 m²
3. Location: Flat roof

640 Timber for use with leadwork

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

645 Sheet underlay

1. Material: Building paper to *BS 1521*, Class A1
2. Recycled content: None permitted
3. Manufacturer: Contractor's choice
 - 3.1. Product reference: Submit proposals
4. Verification: To demonstrate compliance with the product performance, performance standard, test standard, characteristics requirements and manufacturer set out in clause 645 'Sheet underlay'.

- 4.1. Submittals: Manufacturer's product technical data sheet.
- 4.2. Timing: Two weeks before commencement of installation.

650 Laying sheet underlay

1. Handling: Prevent tears and punctures.
2. Laying: Butt or overlap jointed on to a dry substrate.
 - 2.1. Fixing edges: With copper or stainless steel staples, or clout nails.
 - 2.2. Roof edges and abutments: Do not lay over roof edges, but do turn up at abutments
 - 2.3. Wood core rolls: Fixed over sheet underlay.
 - 2.4. Protection: Keep dry and cover with lead at the earliest opportunity.

Fixing lead

705 Head fixing lead sheet

1. Top edge: Secured with two rows of fixings, 25 mm and 50 mm from the top edge of the sheet, at 75 mm centres in each row, evenly spaced and staggered.
2. Sheets less than 500 mm deep: May be secured with one row of fixings, 25 mm from the top edge of the sheet, and evenly spaced at 50 mm centres.

710 Fixings

1. Nails to timber substrates: Copper clout nails to BS 1202-2, or stainless steel (austenitic) clout nails to BS 1202-1.
 - 1.1. Shank type: Annular ringed, helical threaded or serrated.
 - 1.2. Shank diameter: Not less than 3.35 mm.
 - 1.3. Length: Not less than 20 mm, or equal to substrate thickness.
2. Screws to concrete or masonry substrates: Brass or stainless steel.
 - 2.1. Diameter: Not less than 3.35 mm.
 - 2.2. Length: Not less than 19 mm.
 - 2.3. Washers and plastic plugs: Compatible with screws and lead.
3. Screws to composite metal decks: Self-tapping, as recommended by the deck and lead manufacturer/ supplier for clips.

715 Clips

1. Material
 - 1.1. Lead clips: Cut from sheets of same thickness/ code as sheet being secured.
 - 1.2. Copper clips
 - 1.2.1. Thickness: 0.70 mm
 - 1.2.2. Temper: IS EN 1172, Designation R220 in welts, seams and rolls; R240 elsewhere, and dipped in solder if exposed to view.
 - 1.3. Stainless steel clips
 - 1.3.1. Thickness: 0.46 mm
 - 1.3.2. Grade: IS EN 10088-1, 1.4301(304), terne-coated if exposed to view.
2. Dimensions
 - 2.1. Width: 50 mm where not continuous.
 - 2.2. Length: To suit detail.
3. Fixing clips: Secure each clip to the substrate with either two screw or three nail fixings, not more than 50 mm from the edge of the lead sheet. Use additional fixings where lead downstands exceed 75 mm.
4. Fixing lead sheet: Welt clips around edges and turn over 25 mm.

5. Manufacturer: Submit proposals
6. Verification: o demonstrate compliance with the product performance, performance standard, test standard, characteristics requirements and manufacturer set out in clause 715 'Clips'.
 - 6.1. Submittals: Manufacturer's product technical data sheet.

770 Wedge fixing into joints/ chases

1. Joint/ chase: Rake out to a depth of not less than 25 mm.
2. Lead: Dress into joint/ chase.
 - 2.1. Fixing: Lead wedges at not more than 450 mm centres, at every change of direction, and with at least two for each piece of lead.
3. Sealant: Submit proposals
 - 3.1. Application: As section Z22.

790 Screw fixing into joints/ chases

1. Joint/ chase: Rake out to a depth of not less than 25 mm.
2. Lead: Dress into joint/ chase and up back face.
 - 2.1. Fixing: Into back face with stainless steel screws and washers and plastics plugs at not more than 450 mm centres, at every change of direction, and with at least two fixings for each piece of lead.
3. Sealant: Submit proposals
 - 3.1. Application: As section Z22.

Jointing lead

810 Forming details

1. Method: Bossing or lead welding, except where bossing is specifically required.
2. Lead-welded seams: Neatly and consistently formed.
 - 2.1. Seams: Do not undercut or reduce sheet thickness.
 - 2.2. Filler strips: Of the same composition as the sheets being joined.
 - 2.3. Butt joints: Formed to a thickness of one third more than the sheets being joined.
 - 2.4. Lap joints: Formed with 25 mm laps and two loadings to the edge of the overlap.
3. Bossing: Carried out without thinning, cutting or otherwise splitting the lead sheet.

830 Standing seam joints

1. Joint allowance: 100 mm overlap, 75 mm underlap and copper or stainless steel clips at not more than 750 mm centres.
2. Forming joint: Welt the overlap and clips around the underlap, and loosely turn over to form a standing seam of consistent cross section.

845 Wood-cored roll joints with splash lap

1. Wood core
 - 1.1. Size: 45 x 45 mm round, tapering to a flat base that is 25 mm wide.
 - 1.2. Fixing to substrate: Brass or stainless steel countersunk screws at not more than 300 mm centres.
2. Undercloak: Dress three quarters around the core.
 - 2.1. Fixing: Nail to the core at 150 mm centres for one third of the length of the sheet, starting from the head.
3. Overcloak: Dress around the core, and extend on to main surface to form a 40 mm splash lap.

865 Drips without splash laps

1. Underlap: Dress into rebate along the top edge of the drip.
 - 1.1. Fixing: One row of nails at 50 mm centres on the centre line of the rebate.
2. Overlap: Dress over drip to just short of the lower level.

880 Weltd joints

1. Joint allowance: 50 mm overlap and 25 mm underlap.
2. Copper or stainless steel clips: Fix to substrate at not more than 450 mm centres.
3. Overlap: Welt around underlap and clips; lightly dress down.

970 Patination oil

1. Manufacturer: Contractor's choice
 - 1.1. Product reference: Submit proposals
2. Location: ALL LEADWORK
3. Application: As soon as practical, apply a smear coating to the lead, evenly in one direction and in dry conditions.

Ω End of Section

K11

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

Types of flooring/ sheathing/ decking/ sarking/ lining/ casings

110 Wood-based sheets generally

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

515 Plywood roof decking

1. Description: TO LEAD FLAT ROOF AND GUTTER LININGS
2. Manufacturer/ supplier: Contractor's choice IS EN ISO 9001 certified, IS EN ISO 14001 certified; submit on request and Net Zero to ISO 14068-1, third party accredited.
 - 2.1. Product reference: CE marked to IS EN 13986.
3. Substrate: Joists as section G20 at 300mm centres
 - 3.1. Additional supports: As clause 930
4. Decking: Plywood manufactured to the relevant standards and quality control procedures specified in IS EN 636 and so marked.
 - 4.1. Thickness: 18 mm.
 - 4.2. Finish: unsanded
 - 4.3. Use class: Use class 3 to IS EN 636
 - 4.4. Grade: MARINE: Bond Class 3 to IS EN 314-2; Use Class 3 to IS EN 636
 - 4.5. Edges: Tongued-and-grooved to long edges; or square-edged and supported with 75x44mm timber noggings
 - 4.6. Other requirements: Bonded with waterproof adhesive.
5. Setting out: Long edges running across supports. End joints central over joists and staggered.
6. Fixing
 - 6.1. Fasteners: 50 x 3.35 mm annular ringed shank nails.
 - 6.2. Fixing centres (maximum)
 - 6.2.1. Along each support: 25 mm from each long edge.
 - 6.2.2. Around board edges: 150 mm.
 - 6.2.3. Around perimeter of roof area: 150 mm.
7. Expansion provision
 - 7.1. Clear expansion gap around perimeter of roof area and upstands: 10 mm.
 - 7.2. Intermediate expansion/ movement joints: As recommended by decking manufacturer.

516 Plywood

1. Description: FOR NEW WORK AND REPAIRS GENERALLY
2. Manufacturer/ supplier: Contractor's choice IS EN ISO 9001 certified, IS EN ISO 14001 certified; submit on request and Net Zero to ISO 14068-1, third party accredited.
 - 2.1. Product reference: CE marked to IS EN 13986.
3. Substrate: Joists as section G20 at 300mm centres
 - 3.1. Additional supports: As clause 930
4. Decking: Plywood manufactured to the relevant standards and quality control procedures specified in IS EN 636 and so marked.
 - 4.1. Thickness: 12mm and 18 mm.

- 4.2. Finish: unsanded
- 4.3. Use class: Use class 3 to IS EN 636
- 4.4. Grade: MARINE: Bond Class 3 to IS EN 314-2; Use Class 3 to IS EN 636
- 4.5. Edges: Tongued-and-grooved to long edges; or square-edged and supported with 75x44mm timber noggings
- 4.6. Other requirements: Bonded with waterproof adhesive.
- 5. Setting out: Long edges running across supports. End joints central over joists and staggered.
- 6. Fixing
 - 6.1. Fasteners: 50 x 3.35 mm annular ringed shank nails.
 - 6.2. Fixing centres (maximum)
 - 6.2.1. Along each support: 25 mm from each long edge.
 - 6.2.2. Around board edges: 150 mm.
 - 6.2.3. Around perimeter of roof area: 150 mm.
- 7. Expansion provision
 - 7.1. Clear expansion gap around perimeter of roof area and upstands: 10 mm.
 - 7.2. Intermediate expansion/ movement joints: As recommended by decking manufacturer.

Workmanship

910 Installation generally

- 1. Moisture content of timber supports (maximum): 16%
- 2. Joints between boards: Accurately aligned, of constant width and parallel to perimeter edges.
- 3. Methods of fixing, and fasteners: As *section Z20* where not specified otherwise.

940 Board moisture content and conditioning

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

960 Fixing generally

- 1. Boards/ sheets: Fixed securely to each support without distortion and true to line and level.
- 2. Fasteners: Evenly spaced in straight lines and, unless otherwise recommended by board manufacturer, in pairs across joints.
 - 2.1. Distance from edge of board/ sheet: Sufficient to prevent damage.
- 3. Surplus adhesive: Removed as the work proceeds.

Ω End of Section

L10

Windows/ rooflights/ screens/ louvres

Clauses - Not Used

General

115 Timber procurement

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

120 Pre-construction survey

1. Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
2. Designated items: Rooflights A, B and C
3. Primary support structure: Carry out survey sufficient to verify that required accuracy and security of erection can be achieved.
4. Timing: Before fabrication.

Execution

710 Protection of components

1. General: Do not deliver components to site that cannot be installed immediately or placed in clean, dry-floored and covered storage.
2. Stored components: Stack them vertically or near-vertically on level bearers, separated with spacers to prevent damage by and to projecting ironmongery, beads, etc.

730 Priming/ sealing

1. Wood surfaces inaccessible after installation: Prime or seal as specified before fixing components.

750 Building in

1. General: Not permitted unless indicated on drawings.
 - 1.1. Brace and protect components to prevent distortion and damage during construction of adjacent structure.

765 Window installation generally

1. Installation: Into prepared openings.
2. Gap between frame edge and surrounding construction
 - 2.1. Minimum: 3mm
 - 2.2. Maximum: 10mm
3. Distortion: Install windows without twist or diagonal racking.

770 Damp-proof courses in prepared openings

1. Location: Ensure correct positioning in relation to window frames. Do not displace during fixing operations.

780 Fixing of wood frames

1. Standard: As *section Z20*.
2. Fasteners: Stainless steel wood screws
 - 2.1. Spacing: When not pre-drilled or specified otherwise, position fasteners not more than 150 mm from ends of each jamb, adjacent to each hanging point of opening lights, and at maximum 450 mm centres.

820 Ironmongery

1. Fixing: In accordance with any third-party certification conditions applicable. Assemble and fix carefully and accurately using fasteners with matching finish supplied by ironmongery manufacturer. Do not damage ironmongery and adjacent surfaces.
2. Checking/ adjusting/ lubricating: Carry out at completion and ensure correct functioning.

Ω End of Section

L30

Stairs/ ladders/ walkways/ handrails/ balustrades

Preliminary information/ requirements - Not Used

Components

Installation

610 Moisture content

1. Temperature and humidity: Monitor and control internal conditions to achieve specified moisture content in wood components at time of installation.

620 Priming/ Sealing/ Painting

1. Surfaces inaccessible after assembly/installation: Before fixing components, apply full protective/decorative treatment/coating system.

630 Corrosion protection of dissimilar materials

1. Components/ substrates/ fasteners of dissimilar materials: Isolate using washers/ sleeves or other suitable means to separate materials to avoid corrosion and/ or staining.

640 Installation generally

1. Fasteners and methods of fixing: To section Z20.
2. Structural members: Do not modify, cut, notch or make holes in structural members, except as indicated on drawings.
3. Temporary support: Do not use stairs, walkways or balustrades as temporary support or strutting for other work.
4. Applied finishes: Substrates to be even, dry, sound and free from contaminants. Make good substrate surfaces and prepare/ prime as finish manufacturer's recommendation before application.

Completion

910 Inspection

1. Timing: Two weeks after request by Employers Representative
2. Period of notice (minimum): Five working days

920 Documentation

1. Contents
 - 1.1. Copies of structural design calculations/ test reports.
 - 1.2. General product information.
 - 1.3. Installation information.
 - 1.4. Inspection and maintenance reports.
2. Number of copies: One
3. Submission: Two weeks prior to date when contractor expects work to be practically complete

Ω End of Section

N16

Bird and vermin control systems

General - Not Used

System performance - Not Used

Products

310 Crow Guards

1. Description: TO CHIMNEY POTS
2. Manufacturer: Contractor's choice
3. Material: Stainless Steel gr316
4. Colour: Powder coated Black

Fabrication

505 Fabrication generally

1. Design: Complete detailed design of items specified in this sub-section and obtain approval prior to commencing fabrication.
2. Shop drawings: Submit.
3. Structural calculations: Submit.
4. Frameworks: Assemble and brace, including temporary members required for installation.
5. Contact between dissimilar metals: Avoid.
6. Temporary support: Do not subject members to non-design loadings.

Execution

610 Workmanship generally

1. Preparation
 - 1.1. Water supplies: Do not contaminate.
 - 1.2. Existing building services and components: Protect, and leave undamaged.
2. Timing: Coordinate with other related trades.
3. Damaged building components: Obtain instructions.
4. Contaminants: Remove and leave affected area clean.
5. Coatings
 - 5.1. Suitability of substrates: Sufficiently dry and sound, to suit coatings.
 - 5.2. Preparation and application: As section M60, and in accordance with BS 6150.
6. Fasteners and adhesives: As section Z20.
 - 6.1. Material: Compatible with building components and substrate.
 - 6.2. Metals: Isolate dissimilar metals to avoid electrolytic corrosion.
7. Thermal and building movement: Allow for, where appropriate.
 - 7.1. Movement joints: Do not bridge.
8. Roost inhibitors, nets and mesh screens: Correctly fitted and tensioned.

Completion - Not Used

Ω End of Section

R10

Rainwater drainage systems

General

110 Gravity rainwater drainage system

1. Rainwater outlets: FABRICATED STAINLESS STEEL CATCH-PIT AND RECTANGULAR OUTLET PIPE
2. Gutters: Lead as section H71
3. Pipework: Stainless steel; Aluminium, PVC-U, sealed
4. Below ground drainage: As section R12
5. Disposal: To surface water drainage
6. Accessories: Insulation to internal downpipes

System performance - Not Used

Products

370 Aluminium pipework

1. Standard: Agrément certified
2. Manufacturer: Contractor's choice
 - 2.1. Product reference: Submit proposals
3. Type/ Thickness : Cast
4. Section: Rectangular Round
5. Nominal size: 152 mm
6. Finish: Painted
7. Colour: Black
8. Brackets: Extruded aluminium pipe clips coated as pipes
 - 8.1. Fixings: Stainless steel screws
 - 8.1.1. Size: 40 x 5 mm
9. Accessories: Rainwater shoes

425 PVC-U pipework - sealed

1. Standard: To IS EN 1329-1 or BS 4514, Kitemark certified.
2. Manufacturer: Contractor's choice
 - 2.1. Product reference: Submit proposals
3. Recycled content: None permitted
4. Nominal size: 200X100 RECTANGULAR
5. Colour: White
6. Brackets: PVC-U clips, black
 - 6.1. Fixings: Stainless steel screws
 - 6.1.1. Size: 50 x 5 mm

450 Insulation to internal pipelines

1. Material: Preformed flexible closed cell split tube
2. Thermal conductivity (maximum): Not applicable

3. Manufacturer: Contractor's choice
 - 3.1. Product reference: Submit proposals
4. Recycled content: Not applicable
5. Thickness: 50 mm

Custom made products - Not Used

Execution

600 Preparation

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

605 Installation generally

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

630 Installing rainwater outlets

1. Fixing: Secure. Fix before connecting pipework.
 - 1.1. Method: As drawing 447
2. Junctions between outlets and pipework: Accommodate movement in structure and pipework.

635 Fixing pipework

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

640 Fixing vertical pipework

1. Bracket fixings: Plugged and screwed into masonry
2. Distance between bracket fixing centres (maximum): 1200 mm

915 Maintenance instructions

1. 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

1. 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.
2. Access covers, rodding eyes, outlet gratings and the like: Secure complete with fixings.

Ω End of Section

R12

Below ground drainage systems

General

110 Below ground drainage system

Not Used

Ω End of Section

V90

Electrical systems

Not Used

Ω End of Section

Z12

Preservative/ flame-retardant treatment

To be read with preliminaries/ general conditions.

110 Treatment application

1. Timing: After cutting and machining timber, and before assembling components.
2. Cutting and machining: Carry out as much as possible before treatment.
3. Extensively processed timber: Retreat edges that have been sawn, planed, etc.
4. Surfaces exposed by minor cutting or drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer
5. Site-cut timber surfaces: Liberally brush with a compatible preservative treatment
6. Processor: *WPA* benchmark-accredited for the specified treated components

120 Preservative treatment performance

1. Standard: In accordance with Table 5 of the *WPA Code of practice*.
2. Desired service life: 60 years

150 Water-based organic preservative treatment TO NEW TIMBER

1. Solution
 - 1.1. Manufacturer: Contractor's choice
 - 1.1.1. Product reference: Contractor's choice
 - 1.2. Application: High-pressure impregnation of all new timber for repair works
2. Moisture content of wood
 - 2.1. At time of treatment: As specified for the timber/ component at time of fixing.
 - 2.2. After treatment: Timber to be surface dry before use.
3. Verification: Certification of treatment required.
 - 3.1. Submittals: Manufacturer's certification.
 - 3.2. Timing: Before placement of orders.

167 Boron compound preservative treatment TO EXISTING TIMBER

1. Solution
 - 1.1. Manufacturer: Contractor's choice
 - 1.1.1. Product reference: Contractor's choice
 - 1.2. Application: General treatment of all roof timbers; directed treatment of all at-risk ends, wall-plates and embedded timbers
2. Moisture content of wood
 - 2.1. At time of treatment: As specified for the timber/ component at time of fixing.
 - 2.2. After treatment: Timber to be surface dry before use.
3. Verification: Certification by timber treatment specialist employed by contractor to carry out the treatment works.
 - 3.1. Submittals: Certification of works by timber treatment specialist.
 - 3.2. Timing: On completion of treatment.

180 Recycled treated timber

1. Usage: Not permitted.

610 Making good to preservative treatment on site

1. Preservative solution: Compatible with off-site treatment.
2. Application: In accordance with preservative manufacturer's recommendations.

620 Making good to flame-retardant treatment on site

1. Flame-retardant: Compatible with off-site treatment.
2. Application: In accordance with flame-retardant manufacturer's recommendations.

Ω End of Section

Z21

Mortars

Cement gauged mortars - Not Used

Lime:sand mortars

310 Lime:Sand Mortar Mixes

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

320 Sand for Lime:Sand Masonry Mortars

1. Type: Sharp, well graded.
 - 1.1. Quality, sampling and testing: To IS EN 13139.
 - 1.2. Grading/ Source: As specified elsewhere in relevant mortar mix items.

350 Storage of Lime:Sand Mortar Materials

1. Sands and aggregates: Keep different types/ grades in separate stockpiles on hard, clean, free-draining bases.
2. Ready prepared nonhydraulic lime putty: Prevent drying out and protect from frost.
3. 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.
4. Bagged hydrated hydraulic lime: Store off the ground in dry conditions.

360 Making Lime:Sand Mortars Generally

1. Batching: By volume. Use clean and accurate gauge boxes or buckets.
2. Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
3. Contamination: Prevent intermixing with other materials, including cement.

400 Making Hydraulic Lime:Sand Mortars

1. Mixing hydrated hydraulic lime:sand: Follow the lime manufacturer's recommendations for each stage of the mix.
 - 1.1. Water quantity: Only sufficient to produce a workable mix.
2. Working time: Within limits recommended by the hydraulic lime manufacturer.

Ω End of Section

