5131

Proctor Watts Cole Rutter Limited

Shaftesbury Town Council

# Shaftesbury Town Hall

## Spec

## 29-06-2023

# Contents

# C41
# Repairing/ renovating/ conserving masonry

## Generally/ preparation

### 110 Scope of work

1. Schedule: See separate stone repair schedule and drawings appended to this specification
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.

### 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: Foreman mason
3. Timing: At least 5 working days before starting each section of work
4. Instructions issued during inspection: To be confirmed by Architect as A10

### 125 Removal of fittings/ fixtures

1. Items to be removed, and reinstated on completion of repair work: As schedule
    1.1. Identification: Attach labels or otherwise mark items using durable, non-permanent means, to identify location and describe refixing instructions, where applicable.
    1.2. Storage: Protect against damage, and store until required.
    1.3. Reinstatement: Refit in original locations using original installation methods.
2. Masonry fabric and surfaces: Do not damage during removal and replacement of fittings/ fixtures.

### 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 roots: Where growths cannot be removed completely without disturbing masonry seek instructions.
3. 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.

## Workmanship generally

### 150 Power tools

1. Usage for removal of mortar: Permitted only with prior approval

### 160 Protection of masonry units and masonry

1. Masonry units: Prevent overstressing during transit, storage, handling and fixing. Store on level bearers clear of the ground, separated with resilient spacers. Protect from adverse weather and keep dry. Prevent soiling, chipping and contamination. Lift units at designed lifting points, where provided.
2. 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 nonstaining slats, boards, tarpaulins, etc. Remove protection on completion of the work.

## 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 cement gauged mortars when ambient air temperature is at or below 3°C and falling or unless it is at least 1°C and rising, unless mortar has a minimum temperature of 4°C when laid and the masonry is adequately protected.
   2.2. In 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.
   2.3. 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 an area of each of the following types of work, and arrange for inspection before proceeding with the remainder: Mortar repairs. separate samples for greensand and Chilmark stones.

# Materials/ production/ accessories

## 220 Recording profiles

1. Profiles: Take measurements from existing masonry units, as instructed, to allow accurate matching of replacements.
2. Recording in situ: If there are no suitable joints to allow use of inserts, seek instructions.
3. Drawings and templates: Prepare as necessary. Templates must be clearly and indelibly marked to identify use and location.

## 240 Stone

1. Supplier: to approval
2. Type: Greensand and Chilmark stone as existing
3. Quality: Free from vents, cracks, fissures, discolouration, or other defects that may adversely affect strength, durability or appearance. Thoroughly seasoned, dressed and worked in accordance with shop drawings prepared by the supplier.

4. Finish: tooled to match existing

### 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.

### 281 Fixings

1. Description: for replacement stonework
2. Type: Submit proposals.
3. Material: Austenitic stainless steel
4. Size, strength and number: As necessary to resist loads likely to occur during the life of the building, and to prevent lateral displacement or pulling apart of the construction.

## Dismantling/ rebuilding - Not Used

## Replacements and insertions

### 330 Preparation for replacement masonry

1. Defective material: Carefully remove to the extent agreed. Do not disturb, damage or mark adjacent retained masonry.
2. Existing metal fixings, frame members, etc.: Report when exposed.
3. Redundant metal fixings: Remove.
4. Recesses: Remove projections and loose material; leave joint surfaces in a suitable condition to receive replacement units. Protect from adverse weather if units are not to be placed immediately.

### 340 Replacement of stone

1. Description: Defective or missing stone as scheduled
2. Stone: As clause 240
3. Bedding depths: not less than 100mm
4. Mortar: As section Z21.
   4.1. Mix: 1:3 ready-mixed nonhydraulic lime putty:sand
5. Fixings: Bonded dowels, as clause 405
6. Joints: Flush to match existing

### 350 Stone inserts

1. Description: To ashlar faces that have spalled or split and as scheduled

2. Stone: as clause 240
3. Finish: Flush and to match existing.
4. Preparation and insertion: As clause 395.
5. Mortar: As section Z21.
   5.1. Mix: 1:3 nonhydraulic lime:sand with pozzolanic additive, proportion of pozzolan subject to site trials
   5.2. Sand source/ type: White to match existing (sample to be provided for approval)
6. Fine sand to approval
7. Joints: Very fine.

## 385 Laying replacement masonry units

1. Exposed faces of new material: Keep to agreed face lines.
2. Faces, angles and features: Align accurately. Set out carefully to ensure satisfactory junctions with existing masonry and maintain existing joint widths.
3. Joint surfaces: Dampen to control suction as necessary.
4. Laying units: On a full bed of mortar, all joints filled.
5. Exposed faces: Keep clear of mortar and grout.

## 390 Grouting joints

1. Grout mix: Nonhydraulic lime with pozzolanic admixture; mix subject to site trials
2. Joints that cannot be fully filled with bedding mortar: Grout thoroughly around replacement masonry units.
3. Grouting: Keep grout back from exposed face to allow for the depth of pointing, using an approved temporary sealing material. Prevent grout staining exposed face.

## 395 Installing stone inserts

1. Pockets to receive inserts
   1.1. Cut out accurately. Undercut sides of pocket where necessary to provide space for bonding material.
   1.2. Adjust depth so that insert stands proud of existing stone for finishing in situ.
   1.3. Clean out thoroughly.
2. Inserts: Cut to the smallest rectangular shape necessary to replace the defective area and provide a firm seating. Install accurately and securely.
   2.1. Exposed faces: Keep clear of bonding material.
3. Existing joint widths: Maintain. Do not bridge joints.

## 405 Bonded dowels

1. Dowels: Austenitic stainless steel
2. Adhesive: Epoxy resin
3. Holes for dowels: Suitably sized and accurately aligned in masonry background and in rear of replacement/ insert stone; clean and dry.
4. Other requirements: Do not use adhesive to bond stones at joints unless instructed.

## 410 Corroded metal fixings

1. Removal: Cut out carefully, causing the least possible disturbance to surrounding masonry. Remove associated rust debris.

### 420 Temporary distance pieces for joints in ashlar stonework

1. Material: Lead or stainless steel.
2. Removal: When mortar/ grout is sufficiently strong to take loading without compression.

## Tooling/ dressing stone in situ

### 450 Weathering ledges at joints

1. Locations: Where stones project or are recessed.
2. Requirement: Carefully weather the ledge, to approval.
3. Method: Suitably graded carborundum blocks or tooling as appropriate.

### 455 Descaling stone

1. Requirement: Carefully remove loose scaling and powdering from stones to the extent agreed.
2. Method: Suitable bristle brushes or carborundum blocks. Do not use wire brushes.

### 458 Redressing stone

1. Requirement: Carefully dress back stones to the extent agreed.
2. Method: Suitably graded carborundum blocks or tooling as appropriate.

## Mortar repairs

### 510 Preparation for mortar repairs

1. Repair area: Scribe area of masonry to be removed using straight horizontal and vertical lines parallel to joints. Where repair area abuts joints, maintain existing joint widths and do not bridge joints.
2. Decayed masonry: Cut back carefully to a minimum depth of 20 mm to a sound background. Where the depth of removal exceeds 50 mm, seek instructions.
3. Precautions: Do not weaken masonry by removing excessive material. Do not damage adjacent masonry.
4. Top and vertical reveals of repair area: Undercut.

### 515 Reinforcement for mortar repairs

1. Material: Austenitic stainless steel, phosphor bronze or copper alloy wire, 3 mm diameter.
2. Armatures: Form to suit profiles of mortar repair and provide effective reinforcement.
3. Cover to reinforcement: Not less than 18 mm.
4. Installation: Drill holes into background to receive reinforcement, and bond firmly with a suitable epoxy resin.

### 520 Mortar repairs

1. Description: As scheduled
2. Undercoats: As section Z21.
    2.1. Mix: As finishing coat, without stone dust
    2.2. Sand source/ type: Fine sand to approval
    2.3. Building up: In layers where necessary, each layer not exceeding 12 mm.
3. Finishing coat: To match approved samples.
    3.1. Mix: 1:3 nonhydraulic lime putty:sand and stone dust or hot lime technique to approval
    3.2. Sand source/ type: Fine sand to approval

3.3. Finished thickness: 7 mm

3.4. Finish: Scraped back, as clause 550 or floated, as clause 555, to approval

## 540 Applying mortar

1. Surfaces to receive mortar: Clean, and free from dust and debris. Dampen to control suction.
2. Applying coats: Build up in layers to specified thickness. Apply mortar firmly, ensuring good adhesion with no voids. Form a mechanical key to undercoats by combing or scratching to produce evenly spaced lines.
3. Allow each layer to achieve an initial set before applying subsequent coats. Prevent each layer from drying out rapidly by covering immediately with plastics sheeting and/ or dampening intermittently with clean water.
4. Finishing mortar coat: Form accurately to required planes/ profiles, and finish flush with adjacent masonry.
5. Protection: Protect completed repairs from adverse weather until mortar has set.

## 550 Scraped finish to mortar repairs

1. Procedure: Finish final coat of repair mortar proud of existing masonry face. When mortar is set, but not too hard, scrape back to required face line using fine saw blade or other suitable means, to achieve required finish.

## 555 Float finish to mortar repairs

1. Procedure: Use a wood float and/ or a felt faced float to give an even overall texture. Do not use steel floats.

# Crack repairs/ ties/ reinforcement

## 610 Mortar repair of cracks

1. Description: As scheduled
2. Mortar: As section Z21.
   2.1. Mix: 1:3 feebly hydraulic lime:sand, to approval
3. Preparation: Clean out cracks to remove debris, dust and dirt. Dampen recesses, as necessary, to control suction.
4. Applying mortar: Press well into cracks so that they are fully filled. Ensure that mortar does not encroach upon exposed faces. Finish mortar flush with masonry face.

## 640 Pinning

1. Description: Loose stones
2. Dowels/ Pins
   2.1. Standard: To BS EN 1090-1
   2.2. Type: Austenitic stainless steel threaded rods
   2.3. Diameter: 6 mm
   2.4. Additional requirements: Allow provisionally for three dowels per stone Penetration into background not less than 100 mm
3. Resin: Low viscosity resin to approval
4. Holes: Drill carefully, sloping downwards into background. Remove drilling dust and debris and keep dry.
5. Filling holes
   5.1. Check that dowel lengths are correct before filling with resin.

5.2. Use sufficient resin so that when the dowel is inserted the resin is dispersed to achieve an effective repair.

6. Exposed faces: Keep clean and free from resin stains. Use temporary plugging material and/ or isolating membranes as necessary.
7. Clearances: Keep ends of ties and resin back from face of masonry.
8. Making good after resin has cured: Mortar, as clause 690

### 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.
3. Finished appearance: Obtain approval for first 3 holes before completing the remainder.

## Grouting rubble filled cores - Not Used

## Pointing/ repointing

### 820 Pointing

1. Description: stonework open joints as schedule
2. Preparation of joints: Rake out existing mortar
3. Mortar: As section Z21.
   3.1. Mix: 1:½:2½ nonhydraulic lime putty: pozzolanic admixture:sand
   3.2. Sand source/ type: Crushed stone fine pointing sand to approval
4. Joint profile/ finish: flush to match adjacent pointing

### 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 Brushed finish to joints

1. Timing: After initial mortar set has taken place remove laitance and excess fines by brushing, to give a coarse texture. Do not compact mortar.

Ω End of Section

# C52
# Fungus/ beetle eradication

## Clauses

### 37 Timber preservatives/ Masonry fungicides generally

1. Products: Registered by the Health and Safety Executive (HSE) and listed on the HSE website under non-agricultural pesticides.
2. Application: In accordance with statutory conditions of approval given on product labels and manufacturer's recommendations.

### 48 Timber treatment

1. Description: To all existing roof timbers, and to new plywood deck
2. Manufacturer: Safeguard Europe Ltd
   - 2.1. Contact details
     - 2.1.1. Address: Redkiln Close
       Redkiln Way
       Horsham
       West Sussex
       RH13 5QL
     - 2.1.2. Telephone: +44 (0)1403 210204
     - 2.1.3. Web: www.safeguardeurope.com
     - 2.1.4. Email: info@safeguardeurope.com
   - 2.2. Product reference: Roxil Wood Preserver - Clear, Odourless Formulation Providing Protection Against Wood Destroying Fungi and Beetles Such as Dry Rot, Wet Rot, Fungal Attack and Woodworm
3. Standard: To BS EN 46, BS EN 118, BS EN 113.
4. Density: 1.0 g/cm³.
5. Coverage: 5 m² (1 litre); 25 m² (5 litre).
6. Storage: Store above 5°C in dry conditions in the original closed box.

### 70 Guarantee

1. Type: Insured protection. Administered by an independent insurance protection company.
   - 1.1. Guarantee period from completion of installation (minimum): 10 years
2. Documentation: Provide certificates/ guarantees at completion of treatment.

Ω End of Section

# G20
# Carpentry/ timber-framing/ first fixing

## General

### 120 Structural design provided

1. Description: strengthening of roof as shown on Julia Sanders noted drawing
2. Requirements
   2.1. Generally: As section B50/B51.

### 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: C24
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

### 270 Ungraded softwood

1. Description: for internal non-structural use
2. Quality of timber: Free from decay, insect attack (except pinhole borers) and with no knots wider than half the width of the section.
3. Surface finish: Sawn
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

### 275 Wood trim

1. Description: Clock chamber eaves fascia and barge boards
2. Species: oak - osmo oiled
3. Standard: To BS 1186-3.
   3.1. Class: 2

4. Treatment: Organic solvent impregnation to NBS section Z12 and Wood protection Association Commodity Specification C5
    4.1. Design service life: 40 years
5. Fixing: Two 50 mm lost head nails to each support
6. Other requirements: Undercut bottom edge of boards to form drip

## 311 Non-structural plywood

1. Description: For parapet gutter boards and
2. Standard: Marine quality
3. Thickness: 18mm
4. Appearance class to BS EN 635: IV
5. Use class to BS EN 335: Use Class 2
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 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.

## 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 BS EN 1313-1, clause 6 for sawn sections.

## 420 Warping of timber

1. Bow, spring, twist and cup: Not greater than the limits set down in BS EN 14081-1, BS 4978 and BS EN 844 for softwood

## 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.

## 440 Processing treated timber

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

## 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.

# 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.

## 615 Bolt/ screw assemblies

1. Description: As noted on structural engineer's drawing

2. Designation: Grade A2 Black bolts to BS EN ISO 898-1, Grade 4.6
3. Size: M12 or as noted on drawing
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.

### 630 Bolted joints

1. Bolt spacings (minimum): To BS EN 1995-1-1, section 8.5.
2. Holes for bolts: Located accurately and drilled to diameters as close as practical to the nominal bolt diameter, and not more than 2 mm larger.
3. Washers: Placed under bolt heads and nuts that would otherwise bear directly on timber. Use spring washers in locations which will be hidden or inaccessible in the completed building.
4. Bolt tightening: So that washers just bite the surface of the timber. Ensure that at least one complete thread protrudes from the nut.
   4.1. Checking: At agreed regular intervals up to completion. Tighten as necessary.

### 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.

## 795 Trimming openings

1. Trimmers and trimming joists: When not specified otherwise, not less than 25 mm wider than general joists.

## 850 Inspection generally

1. Structural timber-work: Give reasonable notice before covering up.

## 860 Bolted joint inspection

1. Timing: Inspect all accessible bolts at the end of the defects liability period and tighten if necessary.

Ω End of Section

# H20
# Rigid sheet cladding

**To be read with preliminaries/ general conditions.**

## 10 Sheet cladding

1. Description: Soffits to Porch and clock tower
2. Board/ Sheet
   2.1. Manufacturer: Promat
      2.1.1. Product reference: Masterboard
   2.2. Material: Fibre-reinforced calcium silicate
   2.3. Thickness: 9mm
   2.4. Joints
      2.4.1. Type/ Treatment: flush using rebated boards and Promap joint filler as manufacturers written instructions
3. Support system: Timber joists as noted and section G20

## 30 Timber supports (joists)

1. General: Regularized softwood free from decay and insect attack (except ambrosia beetle damage).
2. Preservative treatment: As section Z12 and Wood Protection Association Commodity Specification C6.
   2.1. Type: Organic solvent
3. Moisture content at time of fixing (maximum): 19%.

## 50 Fixing sheets

1. General: Secure to supports without producing distortion.
2. Fasteners: Evenly spaced in straight lines, in pairs across joints and sufficient distance from edge of sheet to prevent damage.

## 70 Treated timber

1. Exposed cut and drilled surfaces: Treat with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.

## 80 Fixing sheets

1. General: Secure to supports without producing distortion.
2. Fasteners: Evenly spaced in straight lines, in pairs across joints and sufficient distance from edge of sheet to prevent damage.

Ω End of Section

# H62
# Natural slating

**To be read with preliminaries/ general conditions.**

## 3 Roof slating

1. Description: To North roofslope, and clock tower as shown on roof and section drawings
2. Substrate: Rafters at 450 mm centres
3. Pitch: 27°
4. Underlay: Vapour-permeable underlay to BS EN 13859, Class W1
   - 4.1. Direction: Parallel to eaves.
   - 4.2. Head-lap (minimum): 150 mm
5. Battens
   - 5.1. Size: 50 x 25 mm
   - 5.2. Fixing: 65 x 3.35 mm galvanized annular ring shank nails
6. Slates
   - 6.1. Supplier: Contractor's choice - submit BS EN 12326-1 conformity
   - 6.2. Product reference: Glendyne Canadian slate
   - 6.3. Size: 610 x 305 mm
   - 6.4. Head-lap (minimum): 116 mm
   - 6.5. Fixing: Two nails each slate.

## 10 Vertical slating

1. Description: To sides of new clock chamber 'dormer'
2. Substrate: new stud framing as shown on drawings
3. Underlay: as main roof slope
4. Fixing: Parallel to bottom edge.
   - 4.1. Horizontal lap (minimum): 100 mm.
5. Battens
   - 5.1. Size: 50 x 25 mm
6. Slates
   - 6.1. Supplier: All as main roof slope
7. Sidelap: In accordance with BS 5534, clause 5.5, to suit slate size, roof pitch and exposure.
8. Fixing: Two nails each slate.

## 25 Underlay

1. Handling: Do not tear or puncture.
2. Laying: Maintain consistent tautness.
3. Vertical laps (minimum): 100 mm wide, coinciding with supports.
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 neatly.
7. Ventilation paths: Do not obstruct.

## 30 Battens/ Counterbattens

1. Timber: Sawn softwood.
    1.1. Standard: In accordance with BS 5534, Annex D.
    1.2. 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

## 32 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: 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.

## 35 Slate fixing

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. Lay slates with slightly open (maximum 5 mm) butt joints. Align tails.
3. Slate thickness: Consistent in any one course. Lay with thicker end as tail.
4. 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.
5. Top course: Head-nail short course to maintain gauge.
6. Fixing: Centre nail each slate twice through countersunk holes 20-25 mm from side edges.
    6.1. Nails: Copper clout to BS 1202-2 or aluminium clout to BS 1202-3.
    6.2. Nail dimensions: Determine in accordance with BS 5534 to suit site exposure, withdrawal resistance and slate supplier’s recommendations.

## 40 Mortar bedding/ Pointing

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

## 66 Metal valleys

1. Underlay: Cut over tilting fillets to lap onto metal valley. Do not lay under metal.
2. Roof slates: Cut extra wide slates adjacent to valley to fit neatly.

## 70 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 and turn down over head of abutment slates.

## 71 Top edge abutments

1. Underlay: Turn up not less than 100 mm at abutments.

2. Top slate courses: Fix close to abutments.

## 77 Mortar-bedded tile ridges

1. Underlay: Lay courses over ridge. Overlap (minimum) 150 mm.
2. Ridge tiles
   2.1. Manufacturer: Existing tiles re-used - allow to supply 20% replacement tiles to match existing
   2.2. Bedding: On mortar, continuous to edges and solid to joints.
   2.3. Fixing: Secure all ridge tiles to ridge boards or ridge tile fixing battens with self-sealing non-ferrous fixings.

## 86 Ventilator slates to ventilate roof void

1. Ventilator slates:
2. Manufacturer: Cavity trays or similar approved
   2.1. Product reference: Flush Slate ventilator
   2.2. Requirement: To ventilate roof void, and to terminate extracts from w.c.s
   2.3. Positions: 8 each side, In third top tile course

## 90 Vertical slating bottom edges

1. Slating substrate work: Fix timber tilting fillet to support bottom course of slates in correct vertical plane. Fix flashing to tilting fillet.
2. Underlay: Dress over flashing.
3. Undercourse and bottom course slates: Fix with tails neatly aligned.

## 91 Vertical slating top edges

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

## 92 Vertical slating 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.

## 93 Vertical slating 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

### 209 Gutter lining – box, parapet, tapered and flat roof valley

1. Substrate: Existing parapet gutters
   1.1. Preparation: remove defective lead gutter linings and relay gutters to LSA guidance (ie adjust lengths between steps to suit lead thickness).
2. Sheet underlay: Building paper to BS 1521, Class A1
3. Type of lead: Rolled to BS EN 12588
   3.1. Thickness: 2.50 or 2.65 mm (Code 6)
4. Pretreatment: Apply thin coating of patination oil to underside of lead and allow to dry before laying
5. Joints in direction of fall: Wood-cored roll
6. Cross joints: steps as existing
7. Outlets: Catchpit with overflow pipe Chute outlet through wall to hopper head Catchpit with overflow pipe as outlets to the south gutter

### 250 Weathering to

1. Description: CORNICES
2. Substrate: Stone
3. Sheet underlay: Not required
4. Type of lead: Rolled to BS EN 12588
   4.1. Thickness: 1.75 or 1.80 mm (Code 4)
5. Joints: Laps (100 mm minimum)
   5.1. Spacing: 1500 mm
6. Edge details: Welted drip at front, upstand at rear with tuck in
7. Fixing: Lead clips at 500 centres
8. Accessories: None

### 440 Soakers and step flashings

1. Description: AT SIDE ABUTMENTS
2. Lead soakers
   2.1. Thickness: 1.75-2.00 mm (Code 4)
   2.2. Dimensions
      2.2.1. Length: Slate/ tile gauge + lap + 25 mm.
      2.2.2. Upstand: Not less than 75 mm.
      2.2.3. Underlay: Not less than 100 mm.
   2.3. Fixing: By roofer.
3. Lead step flashings
   3.1. Thickness: 1.75 or 1.80 mm (Code 4)
   3.2. Dimensions
      3.2.1. Lengths: Not more than 1500 mm.
      3.2.2. End to end joints: Laps of not less than 100 mm.

3.2.3. Cover: Overlap to soaker upstands of not less than 65 mm.

3.3. Fixing: Lead wedges at every course.

## 490 Vertical tiling/ Slating bottom edge flashings

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

## 492 Vertical tiling/ Slating top edge flashings

1. Lead
   1.1. Thickness: 1.75 or 1.80 mm (Code 4) 2.00 or 2.24 mm (Code 5)
2. Dimensions
   2.1. Lengths: Not more than 1500 mm.
   2.2. End to end joints: Laps of not less than 100 mm.
   2.3. Width: Adequate for underlap to abutment and dressing down over tiles/slates not less than 150 mm.

## 494 Vertical tiling/ Slating side abutment step flashings

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

## 496 Vertical tiling/ Slating angle soakers

1. Lead
   1.1. Thickness: 1.25 or 1.32 mm (Code 3).
2. Dimensions
   2.1. Length: Tile/ slate gauge + lap + 25 mm.
   2.2. Underlaps: Not less than 150 mm.

# General requirements/ preparatory work

## 510 Workmanship generally

1. Standard: In accordance with BS EN 14783 and BS EN 12588 and to BS 6915 and latest edition of 'Rolled lead sheet. The complete manual' published by the Lead Sheet Training Academy.
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 scribers 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.

## 516 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
    1.1. Rolled, to BS EN 12588, or
    1.2. Machine cast and BBA-certified, or
    1.3. Sand cast, from lead free from bitumen, solder, other impurities, inclusions, laminations, cracks, air, pinholes and blowholes; to code thicknesses but with a tolerance (by weight) of ±10%.
2. Identification: Labelled to show compliance with the harmonized standard (hEN) BS EN 14783, where appropriate, and detail of the thickness/ code, weight and type.

## 570 Existing metal retained

1. Type/ Location/ Extent: Leadwork to south parapet outlets only
2. Cleaning: Remove dirt without damage to metal or adversely affecting other material.

## 610 Suitability of substrates

1. Condition: Dry and free of dust, debris, grease and other deleterious matter.

## 620 Preparation of existing timber substrates

1. Remedial work: Adjust boards to level and securely fix. Punch in protruding fasteners and plane or sand to achieve an even surface.
2. Defective boards: Give notice.
3. Moisture content: Not more than 22% at time of covering. Give notice if greater than 16%.

## 630 Plywood overlay

1. Standard: Manufactured to an approved national standard and to BS EN 636, section 8 (plywood for use in humid conditions).
    1.1. Sheet size: 2400 or 1200 x 1200 mm and 6 mm thick.
2. Moisture content: Not more than 22% at time of covering. Give notice if greater than 16%.
3. Laying: Parallel to perimeter edges with cross joints staggered and a 0.5-1 mm gap between sheets.
4. Fixing: With 25 mm annular ringed shank copper or stainless steel nails, at 300 mm grid centres over the area of each sheet and at 150 mm centres along edges, set in 10 mm from perimeter edges and in pairs across joints.
    4.1. Nail heads: Set flush with or just below the surface.

## 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 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.

## 646 Sheet underlay

1. Manufacturer: Associated Lead Mills
   1.1. Contact details
      1.1.1. Address: Unit B
      Bingley Road
      Hoddeson
      United Kingdom
      EN11 0NX
      1.1.2. Telephone: +44 (0)199 2444100
      1.1.3. Web: www.associatedlead.co.uk
      1.1.4. Email: sales@leadsales.co.uk
   1.2. Product reference: Building Papers
2. Width: 1 m.
3. Options: Standard A1F.

## 650 Laying sheet underlay

1. Handling: Prevent tears and punctures.
2. Laying: Butt or overlap jointed onto a dry substrate.
   2.1. Fixing edges: With copper or stainless steel staples or clout nails.
   2.2. 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 top edge of 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 top edge of 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 2.65 mm for light duty or 3.35 mm for heavy duty.
   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. Manufacturer: Contractor's choice
2. Material
   2.1. Lead clips: Cut from sheets of same thickness/ code as sheet being secured.
3. Dimensions
   3.1. Width: 50 mm where not continuous.
   3.2. Length: To suit detail.
4. Fixing clips: Secure each to substrate with either two screw or three nail fixings not more than 50 mm from edge of lead sheet. Use additional fixings where lead downstands exceed 75 mm.
5. Fixing lead sheet: Welt clips around edges and turn over 25 mm.

## 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.

# 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 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.

## 845 Wood-cored roll joints with splash lap

1. Wood core
   1.1. Size: 45 x 45 mm round tapering to a flat base 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 core.
   2.1. Fixing: Nail to core at 150 mm centres for one third length of the sheet starting from the head.
3. Overcloak: Dress around core and extend on to main surface to form a 40 mm splash lap.

## 860 Drips with splash laps

1. Underlap: Dress into rebate along top edge of drip.
   1.1. Fixing: One row of nails at 50 mm centres on centre line of rebate.
2. Overlap: Dress over drip and form a 40 mm splash lap.

## 880 Welted 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 and lightly dress down.

## 970 Patination oil

1. Manufacturer: Contractor's choice
2. Application: As soon as practical, apply a smear coating to lead, evenly in one direction and in dry conditions.

Ω End of Section

# J42
# Single-layer polymeric sheet roof coverings

## Types of roof covering

### 130 Single layer sheet cold roof covering systems .

1. Description: To south roof slope beneath solar panels
2. Substrate: existing roof strengthened as structural engineer's details with new plywood deck
   2.1. Preparation: remove existing fibre cement slates, battens and felt
3. Roof covering system: Single ply for Cold roofs
   3.1. Manufacturer: Bauder Ltdor similar approved
      3.1.1. Contact details
         3.1.1.1. Address: 70 Landseer Road
         Ipswich
         Suffolk
         IP3 0DH
         3.1.1.2. Telephone: +44 (0)1473 257671
         3.1.1.3. Web: www.bauder.co.uk
         3.1.1.4. Email: info@bauder.co.uk
      3.1.2. Product reference: Bauder Single Ply Thermofol Cold Roof Membrane System Mechanically Fixed.
   3.2. Preparation
      3.2.1. Horizontal work: As 'Skirtings and vertical work'.
      3.2.2. Skirtings and vertical work: As manufacturer's written details
   3.3. Separating layer: BauderSYN GV 120 glass fleece protection layer.
   3.4. Waterproof covering
      3.4.1. Type: BauderTHERMOFOL U 20 FR.
      3.4.2. Attachment: Membrane fasteners.
   3.5. System accessories: Bauder Thermofol D18 PVC Detailing Membrane.
   BauderSOLAR F Photovoltaic Mounting System.

## Performance

### 210 Roof performance

1. Roof covering: Secure, free-draining and weathertight.

## Products

### 330 Timber trims, etc.

1. Supplier: As roof membrane
2. Quality: Planed. Free from wane, pitch pockets, decay and insect attack, except ambrosia beetle damage.
3. Moisture content at time of covering (maximum): 22%.
4. Preservative treatment: As membrane manufacturer's/ supplier's recommendations

### 485 Membrane walkway

1. Manufacturer/ supplier: Simplified safety or similar approved

1.1. Product reference: Easi deck board
2. Width: 600mm
3. Location: Short sections between 2 new rooflights and lead gutters below to provide safe egress and entry

## Execution generally

### 510 Adverse weather

1. General: Do not lay membrane at temperatures below 5°C or in wet or damp conditions unless effective temporary cover is provided over working area.
2. Unfinished areas of roof: Keep dry and protect edges of laid membrane from wind action.

### 520 Incomplete work

1. End of working day: Provide temporary seal to prevent water infiltration.
2. On resumption of work: Cut away tail of membrane from completed area and remove from roof.

### 530 Applying primers

1. Surface coverage: Even and full.
2. Coats: Fully bonded. Allow volatiles to dry off thoroughly between coats.

## Substrates/ air and vapour control layers/ warm deck roof insulation

### 610 Suitability of substrates

1. Surfaces to be covered: Secure, clean, dry, smooth, and free from frost, contaminants, voids and protrusions.
2. Preliminary work: Complete, including
   2.1. Grading to correct falls.
   2.2. Formation of upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
   2.3. Fixing of battens, fillets and anchoring plugs/ strips.
3. Moisture content and stability of substrate: Must not impair integrity of roof.

### 660 Joints in rigid board substrates

1. Cover strip: Lay centrally over substrate joints before laying air and vapour control layers or coverings. Adhere to substrate with bonding compound along edges only.

## Waterproof membranes/ accessories

### 710 Mechanical fixing of waterproof membrane

1. Laying: Loose; do not wrinkle or stretch.
2. Installing fasteners
   2.1. Use manufacturer's/ supplier's recommended methods and equipment.
   2.2. Insertion: Correct and consistent.
3. Washers/ pressure plates/ bars
   3.1. Distance from fixed edge (minimum): 10 mm
   3.2. Fixing: Flush with membrane.
4. Sheet overlaps: Extend beyond washers/ pressure plates by minimum 50 mm.
5. Surface condition at completion: Fully sealed, smooth, weatherproof and free-draining.

## 730 Welded jointing of waterproof membrane

1. Side and end joints
   1.1. Laps (minimum): As manufacturer's written instruction
   1.2. Preparation: Clean and dry surfaces beyond full width of joint.
   1.3. Sealing: Weld together.
2. Condition at completion: Fully sealed, smooth, weatherproof and free-draining.

## 740 Adhesive jointing of waterproof membrane

1. Side and end joints
   1.1. Laps (minimum): as membrane manufacturer's written instructions
   1.2. Preparation: Prime, clean and dry surfaces beyond full width of joint and lap.
   1.3. Sealing: Apply continuous even coverage of adhesive to both surfaces. Mate and roll together. Do not wrinkle or stretch membrane.
2. Condition at completion: Fully sealed, smooth, weatherproof and free-draining.

## 760 Perimeter of membrane

1. General: Secure membrane at roof edge conditions, changes of plane, curb flashings, upstands to roof lights, etc. with mechanical fasteners.

## 795 Installing roof ventilators

1. Holes for ventilators: Cut neatly to suit size of vents through perimeter construction.
2. Ventilation paths: Keep clear and unobstructed by insulation.

# Surfacing - Not Used

# Completion

## 940 Completion

1. Roof areas: Clean.
   1.1. Outlets: Clear.
2. Work necessary to provide a weathertight finish: Complete.
3. Storage of materials on finished surface: Not permitted.
4. Completed membrane: Do not damage. Protect from traffic and adjacent or high-level working.

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 BS EN 13986.
    1.1. Evidence of compliance: All sheets to be UKCA/ UKNI/ CE marked. Submit Declaration of Performance (DoP).

### 325 Particleboard flooring

1. Description: TO LOFT ACCESS
2. Substrate: existing ceiling joists with additional support as shown on engineers mark-up drawing
3. Flooring: Particleboard to BS EN 312, Type P5.
    3.1. Thickness: 22 mm
    3.2. Edges: Tongued-and-grooved to all edges
4. Setting out: Long edges running across joists. End joints central over joists and staggered
5. Fixing to joists
    5.1. Fasteners: 50 mm x 8 gauge chipboard screws into pilot holes

### 515 Plywood roof decking

1. Substrate: existing rafters strengthened as structural engineers marked-up drawing
2. Decking: Plywood manufactured to the relevant standards and quality control procedures specified in BS EN 636, and so marked.
    2.1. Edges: Tongued-and-grooved to all edges
3. Setting out: Long edges running across supports. End joints central over joists and staggered.
4. Fixing
    4.1. Fasteners: 50 mm x 8 gauge wood screws into pilot holes
    4.2. Fixing centres (maximum)
        4.2.1. Along each support: 25 mm from each long edge.
        4.2.2. Around board edges: 150 mm
        4.2.3. Around perimeter of roof area: 150 mm
5. Expansion provision
    5.1. Clear expansion gap around perimeter of roof area and upstands: 10 mm.
    5.2. Intermediate expansion/ movement joints: As recommended by decking manufacturer.

## Workmanship

### 910 Installation generally

1. Timing: Building to be weathertight before fixing boards internally.
2. Moisture content of timber supports (maximum): 18%.
3. Joints between boards: Accurately aligned, of constant width and parallel to perimeter edges.
4. Methods of fixing, and fasteners: As section Z20 where not specified otherwise.

## 930 Additional supports

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

## 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.

## 980 Open joints

1. Perimeter joints, expansion joints and joints between boards: Free from plaster, mortar droppings and other debris.
2. Temporary wedges and packings: Removed on completion of board fixing.

## 990 Access panels

1. Size and position: Agree before boards are fixed.
2. Additional noggings/ dwangs (Scot), battens, etc.: Provide and fix as necessary.

Ω End of Section

# L10
# Windows/ rooflights/ screens/ louvres

## General - Not Used

## Products

### 485 Side Hung roof window units

1. Manufacturer: Fakro GB Ltd
   1.1. Contact details
      1.1.1. Address: FAKRO House
      Astron Business Park
      Hearthcote Road
      Swadlincote
      Derbyshire
      DE11 9DW
      1.1.2. Telephone: +44 (0)1283 554755
      1.1.3. Web: www.fakro.co.uk
      1.1.4. Email: sales@fakrogb.com
   1.2. Product reference: FW Side Hung Escape Window
2. Frame
   2.1. Finish as delivered: Water based acrylic lacquer, clear.
3. Glazing or infill
   3.1. Composition: Insulated, anti-burglary double glazed - P2.
4. Accessories: Not required.
5. Roof window code: FWL. & FWR. to suit location
6. Window size code: 08.
7. External cladding finish: Aluminium, polyester powder coated RAL 7022.
8. Flashing: ESW.
9. Material and finish: Aluminium with polyester powder coating, RAL 7022.
10. Blind: Not required.
11. Other requirements: Not required.

### 580 Secondary glazing system

1. Description: Allow to take existing secondary glazing system apart, clean and re-assemble with seals correctly aligned.

## Execution

### 710 Protection of components

1. General: Do not deliver to site components that cannot be installed immediately or placed in clean, dry floored and covered storage.
2. Stored components: Stack vertical or near vertical 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.

## 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

# L20
# Doors/ shutters/ hatches

**To be read with preliminaries/ general conditions.**

## 45 Doors

1. Description: Hardwood doors to clock chamber
2. Manufacturer: doors of distinction or similar approved
   2.1. Product reference: Waterford HWATM with hardwood weather bar 686mm
3. Finish as delivered: primed for site decorations
4. Ironmongery: From the Anvil External beeswax regency lever latch handles Ref 92052, mortice latch, and cranked internal bolts Ref 33129 to each door
5. Fire performance

## 50 Wood door frames

1. Description: To clock chamber
2. Manufacturer: doors of distinction or similar approved
   2.1. Product reference: hardwood door frame kit
3. Finish as delivered: primed for painting
4. Perimeter seals: EPDM weatherseal
5. Fixing: Plugged and screwed, as section Z20
   5.1. Spacing of fixings (frames not predrilled): Maximum 150 mm from ends of each jamb, adjacent to each hanging point and at 600 mm maximum centres.

## 80 Sealant joints

1. Sealant
   1.1. Manufacturer: Contractor's choice
   1.2. Colour: black
   1.3. Application: As section Z22 to prepared joints. Triangular fillets finished to a flat or slightly convex profile.

## 85 Fixing ironmongery generally

1. Fasteners: Supplied by ironmongery manufacturer.
   1.1. Finish/ Corrosion resistance: To match ironmongery.
2. Holes for components: No larger than required for satisfactory fit/ operation.
3. Adjacent surfaces: Undamaged.
4. Moving parts: Adjusted, lubricated and functioning correctly at completion.

Ω End of Section

# L30
# Stairs/ ladders/ walkways/ handrails/ balustrades

## To be read with preliminaries/ general conditions

## 15 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 or
   2.2. Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood-based products.

## 20 Steps within roofspace (to clock tower)

1. Description: Form steps up from walkway into clock tower as shown on drawings
2. Component material, grade, finish as delivered
   2.1. Treads: MRMDF
   2.2. Risers: MRMDF

## 55 Proprietary balustrades

1. Description: parapet fixed guarding as show on drawings
2. Manufacturer: Simplified Safety
   Unit A2, Cradley Business Park
   Cradley Heath, Birmingham
   B64 7DW
   01384 476 107
   2.1. Product reference: Inline twin rail side fixed handrail cranked to south, returning up east and west parapets,
   and single rail side fixed handrail cranked to North parapet
3. Component material and finish as delivered
   3.1. Guarding: Low-carbon steel - galvanized
   3.2. Handrails: Low-carbon steel - galvanized
4. Fixing: Anchor-fixed to stone parapet

## 80 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 features (finishes, inserts, nosings, etc.): Substrates to be even, dry, sound and free from contaminants. Make good substrate surfaces and prepare/ prime as applied feature manufacturer's recommendations before application.

Ω End of Section

# M60
# Painting/ clear finishing

## To be read with preliminaries/ general conditions.

## 11 Solvent-based finishing coats to timber and metal windows and joinery

1. Description: To external windows and joinery
2. Manufacturer: Sandtex Trade, product of Crown Paints Ltd
   - 2.1. Contact details
     - 2.1.1. Address: PO Box 37
       Crown House
       Hollins Road
       Darwen
       Lancashire
       BB3 0BG
     - 2.1.2. Telephone: +44 (0)330 0240302
     - 2.1.3. Web: https://www.crownpaintsprofessional.com/brands/sandtex-trade/
     - 2.1.4. Email: info@sandtextrade.co.uk
   - 2.2. Product reference: Eggshell X-TRA
3. Surfaces: Previously decorated
   - 3.1. Preparation: **New surfaces Timber**
     All surfaces must be suitably dry, and free from anything that will interfere with the adhesion of the materials to be applied. Rub down with a suitable grade of abrasive paper and round sharp edges 1-3mm. Remove all dust. Timber with oils/extractives must be swabbed with clean methylated spirits, frequently changing the face of the cloths. Treat knots with two thin coats of fresh knotting. Fill any fixing holes, open joints and shallow surface defects with Sandtex Trade Mixed Filler. Rub down with a suitable grade of abrasive paper. Remove all dust. Prime with one coat of Sandtex Trade Flexible Primer Undercoat.
     **All metals including galvanised**
     Surfaces must be clean and free from anything that will interfere with the materials to be applied. Wash with hot water and liquid detergent solution to remove oil, grease or any other contaminants, frequently changing the water. Rinse thoroughly with clean water. Allow to dry. Galvanised surfaces should be pre-treated with Crown Trade Protective Coatings T Wash. Overall blackening of the surface will confirm satisfactory surface preparation. **Non-ferrous metals**
     Lightly abrade to a bright (not polished) surface – excluding galvanised surfaces. Rinse thoroughly with clean water to remove all residues. Allow to dry. Prime, including galvanised surfaces, with one coat of Sandtex Trade Rust Inhibiting Primer Undercoat. **Ferrous metals**
     Remove all millscale and rust back to clean metal. Remove all residues. Prime within the working day with one coat of Sandtex Trade Rust Inhibiting Primer Undercoat.
     **Previously decorated surfaces Timber**
     All surfaces must be suitably dry, and free from anything that will interfere with the adhesion of the materials to be applied. Remove all loose, and failing or suspect paint. Prior to painting the moisture should not exceed 18%. Remove grey and denatured surfaces by rubbing down with abrasive paper or by mechanical means and round sharp edges 1-3mm. Feather edges of sound paint. Remove all dust. Organic growth must be removed and the area treated with Sandtex Trade Fungicide. Remove any defective putty glazing, clean and prime rebates, replacement putties must be allowed to form a hard skin. Treat knots with two thin coats of fresh knotting. Fill any fixing holes, open joints and shallow surface defects with Sandtex Trade Ready Mixed Filler or a two pack proprietary wood filler. Rub down with a suitable grade of abrasive paper. Remove all dust. Spot prime all bare areas with one coat of Sandtex Trade Flexible Primer Undercoat.
     **Metals**
     All surfaces must be suitably dry, and free from anything that will interfere with the adhesion

of the materials to be applied. Remove all loose, and failing or suspect paint. Feather edges of sound paint. Remove all dust. Remove all rust. Spot prime all bare metal, including galvanised metal, with one coat of Sandtex Trade Rust Inhibiting Primer Undercoat.
**Timber and metals**
Wash remaining sound paint with hot water and liquid detergent solution to remove any contaminants, frequently changing the water. Wet abrade to provide a key. Rinse with clean water to remove all residues. Allow to dry. Bring forward spot primed areas.

4. Coating: New / unpainted woodwork Following appropriate surface preparation apply one coat of Sandtex Trade Flexible Primer Undercoat and finish with two coats of Sandtex Trade Eggshell X-tra.
Previously painted woodwork Following appropriate surface preparation and spot priming, apply one coat of Sandtex Trade Flexible Primer Undercoat overall and finish with one or two coats of Sandtex Trade Eggshell X-tra.
New / unpainted metalwork Following appropriate surface preparation apply two coats of Sandtex Trade Rust Inhibiting Primer Undercoat and finish with one or two coats of Sandtex Trade Eggshell X-tra.
Previously painted metalwork Following appropriate surface preparation and spot priming, apply one coat of Sandtex Trade Rust Inhibiting Primer Undercoat and finish with one or two coats of Sandtex Trade Eggshell X-tra

## 22 Handling and storage

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

## 28 Protection

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

## 30 Preparation generally

1. Standard: In accordance with BS 6150.
2. Refer to any pre-existing CDM Health and Safety File and CDM Construction Phase Plan where applicable.
3. Risk assessments and method statements for suspected hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
4. Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
5. Substrates: Sufficiently dry in depth to suit coating.
6. Efflorescence salts, dirt, grease and oil: Remove. Give notice if contamination of surfaces/ substrates has occurred.
7. Surface irregularities: Provide smooth finish.
8. Organic growths and infected coatings
    8.1. Remove with assistance of biocidal solution.
    8.2. Apply residual effect biocidal solution to inhibit regrowth.
9. Joints, cracks, holes and other depressions: Fill with stoppers/ fillers. Provide smooth finish.
10. Dust, particles and residues from preparation: Remove and dispose of safely.
11. Water-based stoppers and fillers
    11.1. Apply before priming unless recommended otherwise by manufacturer.
    11.2. If applied after priming: Patch prime.

12. Doors, opening windows and other moving parts
    12.1. Ease, if necessary, before coating.
    12.2. Prime resulting bare areas.

## 32 Previously coated surfaces generally

1. Preparation: In accordance with BS 6150.
2. Contaminated or hazardous surfaces: Give notice of:
    2.1. Coatings suspected of containing lead.
    2.2. Substrates suspected of containing asbestos or other hazardous materials.
    2.3. Significant rot, corrosion or other degradation of substrates.
3. Risk assessment and method statement for hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
4. Removing coatings: Do not damage substrate and adjacent surfaces or adversely affect subsequent coatings.
5. Loose, flaking or otherwise defective areas: Carefully remove to a firm edge.
6. Alkali affected coatings: Completely remove.
7. Retained coatings
    7.1. Thoroughly clean.
    7.2. Gloss-coated surfaces: Provide key.
8. Partly removed coatings
    8.1. Apply additional preparatory coats.
    8.2. Junctions: Provide flush surface.
9. Completely stripped surfaces: Prepare as for uncoated surfaces.

## 37 Wood preparation

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

## 39 Steel preparation

1. Areas of defective primer, corrosion and loose scale: Take back to bare metal. Reprime as soon as possible.
2. Defective paintwork: Remove to leave a firm edge and clean bright metal.
3. Sound paintwork: Provide key for subsequent coats.
4. Corrosion and loose scale: Take back to bare metal.
5. Residual rust: Treat with a proprietary removal solution.
6. Bare metal: Apply primer as soon as possible.
7. Remaining areas: Degrease.

## 41 Masonry and rendering preparation

1. Loose and flaking material: Remove.

## 45 Previously painted window frames

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

## 50 External pointing to existing frames

1. Defective sealant pointing: Remove.
2. Joint depth: Approximately half joint width; adjust with backing strip if necessary.
3. Sealant
    3.1. Manufacturer: Dow Corning or similar approved
    3.2. Preparation and application: As section Z22.

## 61 Coating generally

1. Application: In accordance with BS 6150,
2. Conditions: Maintain suitable temperature, humidity and air quality.
3. Surfaces: Clean and dry at time of application.
4. Thinning and intermixing: Not permitted unless recommended by manufacturer.
5. Overpainting: Do not paint over intumescent strips or silicone mastics.
6. Priming coats: Apply as soon as possible on same day as preparation is completed.
7. Finish
    7.1. Even, smooth and of uniform colour.
    7.2. Free from brush marks, sags, runs and other defects.
    7.3. Cut in neatly.
8. Doors, opening windows and other moving parts: Ease before coating and between coats.

## 68 Staining wood

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

## 70 External doors

1. Bottom edges: Prime and coat before hanging.

## 75 Bead glazing to coated wood

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

## 80 Linseed oil putty glazing

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

Ω End of Section

# N25
# Permanent access and safety equipment

## To be read with preliminaries/ general conditions.

### 10 Personal fall protection equipment

1. Description: For solar panel roof and gutter maintenance
2. Manufacturer: t: 01935 474602
   e: safety@stqvantage.co.uk
   STQ Vantage or similar approved
   2.1. System reference: Vantage line or similar approved certified system
3. Type: Fall arrest
4. Anchorage device: Horizontal stainless steel cable
5. Installation: In accordance with BS 7883 by the system manufacturer or a contractor approved by the system manufacturer.
6. Structural anchors: Type recommended by the system manufacturer to suit the structure/ fabric into which they will be fixed.

## General requirements

### 50 Safety

1. General: The equipment as installed must have no irregularities/ projections capable of inflicting personal injury.
2. Finished surfaces and edges of all accessible parts: Regular and smooth.

### 60 Fixing anchor installation

1. Site drilling or cutting into structure/ fabric: Permitted only in approved locations.
2. Distance between all fixing devices and edges of supporting material: Not less than recommended by fixing manufacturer.

### 70 Marking of anchor devices

1. Provision: Provide on or near each anchor device a label or other clear marking giving:
   1.1. Manufacturer's name and telephone number.
   1.2. Serial number and year of manufacture of device.
   1.3. Maximum number of personnel that may be attached to the device at any one time.
   1.4. Requirements for energy absorbers, ground clearance, etc.
2. Anchor devices intended solely for use with personal protective equipment: Indicate restriction of use by pictogram or other suitable marking on or near the device.

Ω End of Section

# P10
# Sundry insulation/ proofing work

**To be read with preliminaries/ general conditions.**

## 12 Mineral wool insulation

1. Manufacturer: Knauf Insulation Ltd
   1.1. Contact details
      1.1.1. Address: Knauf Insulation
      Stafford Road
      St Helens
      Merseyside
      WA10 3LZ
      1.1.2. Telephone: +44 (0)1744 766 666
      1.1.3. Web: www.knaufinsulation.co.uk
      1.1.4. Email: technical.uk@knaufinsulation.com
   1.2. Product reference: Knauf Insulation Loft Roll 40
2. General requirements: Insulation products generally.
3. Standard: To BS EN 13162.
4. Form: Roll (combi-cut).
5. Density: 8-13 kg/m³.
6. Facing: Unfaced.
7. Thickness (minimum): 150 mm.
8. Width (nominal): 1140 mm (2 x 570 mm/ 3 x 380 mm).
9. Thermal conductivity (maximum): 0.040 W/m·K.
10. Fire performance: Euroclass A1 to BS EN 13501-1.
11. Recycled content: 80%.
12. Vapour resistivity: 5.00 MN·s/g·m.
13. Thickness tolerance: T1.

Ω End of Section

# R10
# Rainwater drainage systems

**To be read with preliminaries/ general conditions.**

## 32 Cast iron pipework - flexible couplings

1. Standard: To BS EN 877, Agrément certified.
2. Manufacturer: Rainclear or similar approved
3. Nominal size: DN100 to match existing
4. Finish as supplied: Prepainted semigloss black
5. Brackets: Cast iron holderbats
   5.1. Fixings: Stainless steel screws
      5.1.1. Size: As manufacturer's written instructions
6. Accessories: Rainwater hopper head to match existing
7. Fixing: As manufacturer's written instructions
8. Jointing: silicone sealed

## 50 Installation generally

1. Electrolytic corrosion: Avoid contact between dissimilar metals where corrosion may occur.
2. Discharge of rainwater: Complete, and without leakage or noise nuisance.
3. Components: Obtain from same manufacturer for each type of pipework and guttering.
4. Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
5. Fixings and fasteners: As section Z20.
6. Protection
   6.1. Fit purpose made temporary caps to prevent ingress of debris.
   6.2. Fit access covers, cleaning eyes and blanking plates as the work proceeds.

## 70 Pipework

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

Ω End of Section

# R11
# Above ground foul drainage systems

## General

### 115 Above ground foul drainage system

1. Sanitary and floor drainage outlets: Existing foul drainage stacks vary around the building in size and material. As noted in the schedule, the project includes the replacement of any external exposed plastic pipework with Cast iron as specified below
2. Waste pipework: plastic internally, of if external, c.i.
3. Disposal: To existing (unchanged) below ground drainage.

## System performance - Not Used

## Products

### 335 Cast iron pipework – spigot and socket

1. Description: - FOR DISCHARGE STACKS AND BRANCHES
2. Standard: To BS 416-1 with sockets.
3. Manufacturer: Hargreaves
   3.1. Product reference: Hargreaves Traditional Express or similar approved
4. Type: Submit proposals
5. Nominal sizes: DN 100
6. Finish: Factory prepainted semigloss black
7. Brackets: to match existing
   7.1. Fixings: Stainless steel screws
      7.1.1. Size: as manufacturer's written instructions
8. Accessories: as required to complete the installation shown on the drawings

### 400 Paint for cut ends of cast iron pipes

1. Manufacturer: Armitage as M60

## Fabrication - Not Used

## Execution

### 601 Installation generally

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

## 605 Pipe routes

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

## 610 Fixing pipework

1. Pipework: Fix securely plumb and/ or true to line. Fix discharge stack pipes at or close below socket collar or coupling.
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: Provide a load bearing support not less than every storey level. Tighten fixings as work proceeds so that every storey is self supporting.
6. Wall and floor penetrations: Isolate pipework from structure, e.g. with pipe sleeves.
   6.1. Masking plates: Fix at penetrations if visible in the finished work.
7. Expansion joint sockets: Fix rigidly to the building.
8. Fixings: Allow the pipe to slide.

## 630 Jointing pipework – generally

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

## 640 Jointing pipework – cast iron – flexible couplings

1. Jointing: Paint cut ends of pipes.

## 705 Access for testing and maintenance

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

# Completion

## 900 Testing generally

1. Dates for testing: Give notice.
   1.1. Period of notice (minimum): 2 working days
2. Preparation
   2.1. Pipework: Securely fixed and free from obstruction and debris.
   2.2. Traps: Filled with clean water.
3. Testing
   3.1. Supply clean water, assistance and apparatus.

3.2. Do not use smoke to trace leaks.

4. Records: Submit a record of tests.

## 905 Pipework airtightness test

1. Preparation
   1.1. Open ends of pipework: Temporarily seal using plugs.
   1.2. Test apparatus: Connect a 'U' tube water gauge and air pump to pipework via a plug or through trap of an appliance.
2. Testing: Pump air into pipework until gauge registers 38 mm.
3. Required performance: Pressure of 38 mm is to be maintained without loss for at least three minutes.

Ω End of Section

Specification created using NBS Chorus