TR148HA

RTP Surveyors

Camborne Town Council

The Passmore Edwards Building

Specification

25-02-2021

Contents

B50
General structural requirements

Tendering

15 Information to be provided at time of tender

1. Description: Assessment made by JHA Consulting
2. Submit the following
   2.1. Technical information: Type of proposed works in connection with the Schedule of Works
   2.2. Proposals: Describe and give reasons for any proposals for:
      2.2.1. Additional support or other changes to the supporting structure.
      2.2.2. Changes to the specification.
      2.2.3. Changes to the adjacent building fabric.

General - Not Used

Performance

250 Limits on movement generated by construction

1. Definition of critical values
   1.1. Threshold value: The value beyond which further movement will be of significant concern.
   1.2. Action value: The value at which execution must cease.
2. Precautions: Take as follows if movements reach critical values:
   2.1. Threshold: Review situation, assess possible causes and submit proposals to ensure that action values are not exceeded.
   2.2. Action: Stop work, report and revise working procedures to prevent further movements.

Execution

740 Condition survey of existing buildings and structures

1. Application: Refer to Initial report by JHA Consulting
2. Before starting work: Survey structure. Record and take photographs of damaged or defective areas.
   2.1. Items to be recorded: Location, extent and magnitude of cracks, spalling, indications of movement, previous repairs, modifications and other irregularities of the fabric.
3. Report: Submit for comment.
   3.1. Include recommendations: For repair or monitoring of defects that could adversely affect structural adequacy of facade while temporally supported

Completion - Not Used

Ω End of Section

C20
Demolition

Clauses

5 Survey

1. Scope: Before starting deconstruction/ demolition work, examine available information, and carry out a survey of:
   1.1. the structure or structures to be deconstructed/ demolished,
   1.2. the site on which the structure or structures stand, and
   1.3. the surrounding area.
2. Report and method statements: Submit, describing:
   2.1. Form, condition and details of the structure or structures, the site and the surrounding area.
3. Extent:
   3.1. Type, location and condition of features of historical, archaeological, geological or ecological importance.
   3.2. Type, location and condition of adjoining or surrounding premises that might be adversely affected by removal of the structure or structures or by noise, vibration and/ or dust generated during deconstruction/ demolition.
   3.3. Identity and location of services above and below ground, including those required for the Contractor's use, and arrangements for their disconnection and removal.
   3.4. Form and location of flammable, toxic or hazardous materials, including lead-based paint, and proposed methods for their removal and disposal.
   3.5. Form and location of materials identified for reuse or recycling, and proposed methods for removal and temporary storage.
   3.6. Proposed programme of work, including sequence and methods of deconstruction/ demolition.
   3.7. Details of specific pre-weakening required.
   3.8. Arrangements for protection of personnel and the general public, including exclusion of unauthorized persons.
   3.9. Arrangements for control of site transport and traffic.
   3.10. Special requirements:

10 Extent of deconstruction/ demolition

1. General: Subject to retention requirements specified elsewhere, deconstruct/ demolish structures down to level indicated on Drawing P200654-303 which will be to allow for the insertion of the lead tray .

15 Bench marks

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

20 Features to be retained

1. General: Keep in place and protect the following: All Bath-stone masonry to be retained. .

25 Location of services

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

30 Services disconnection arranged by contractor

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

35 Live foul and surface water drains

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

50 Workmanship

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

55 Site hazards

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

60 Adjoining property

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

70 Partly deconstructed/ demolished structures

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

71 Dangerous openings

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

76 Asbestos-containing materials – unknown occurances

1. Discovery: Give notice immediately of suspected asbestos-containing materials when discovered during deconstruction/ demolition work. Avoid disturbing such materials.
2. Removal: Submit statutory risk assessments and details of proposed methods for safe removal.

78 Unforeseen hazards

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

85 Site condition at completion

1. Debris: Clear away and leave the site tidy on completion.
2. Special requirements: Refer to Schedule of Works

91 Employer's property

1. Components and materials to remain the property of the Employer: Description: All materials arising from the deconstruction of the Bath-stone chimney. .
2. Protection: Maintain until these items are removed by the Employer or reused in the Works, or until the end of the Contract.
3. Specific limitations: See Drawing P200654-303 and Schedule of Works

95 Recycled materials

1. Materials arising from deconstruction/ demolition work: Can be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification and in accordance with any site waste management plan.

Ω End of Section

C41
Repairing/ renovating/ conserving masonry

Generally/ preparation

110 Scope of work

1. Schedule: All known defective masonry indicated on drawing P200654-303
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: Contract administrator Contractor's representative
3. Timing: At least 3 working days before starting each section of work
4. Instructions issued during inspection: Confirm in writing, with drawings and schedules as required, before commencing work

125 Removal of fittings/ fixtures

1. Items to be removed, and reinstated on completion of repair work: Lightning conductors and earthing system
   Flues for heating boilers etc.
   - 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. Treatment following removal: As schedule
   - 1.3. Storage: Protect against damage, and store until required.
     - 1.3.1. Storage location: On-site where possible
   - 1.4. Reinstatement: Refit in original locations using original installation methods.
2. Items unsuitable or not required for reuse: 75% of existing slate unless proven by contractor / CA
   - 2.1. Disposal: Submit proposals
3. 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.

140 Record of work

1. General: Record work carried out to masonry clearly and accurately using written descriptions, sketches, drawings and photographs, as necessary.
2. Specific records: Photographic records to be provided at end of works
3. Documentation: Submit on completion of the work.

3.1. Number of sets: 2nr on USB data storage

Workmanship generally

150 Power tools

1. Usage for removal of mortar: Not permitted

155 Putlog scaffolding

1. Usage: Not permitted

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: 2 nr samples raked out and repointed with selected pointing mix .

Material/ production/ accessories

210 Advance registration

1. Material registered in advance by the Employer: Obtain from the supplier named in Preliminaries section A56.
    1.1. Ordering: Supersede the Employer's registration and take over responsibility by an order to the supplier covering price, supply and delivery to suit the progress of the work.

215 Material samples

1. Representative samples of designated materials: Provide 3nr 1m2 panels of pointing
    1.1. Designated materials: As per Schedule
2. Retention of samples: Unless instructed otherwise, retain samples on-site for reference. Protect from damage and contamination.

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. Standard: To BS EN 771-6
2. Supplier: TBC
3. Type: Bathstone
4. 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.
5. Finish:

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: As per Schedule
2. Standard: As per Schedule
3. Type: Submit proposals.
4. Material: As per Schedule
5. 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

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 makings to drawings/ photographs.

320 Rebuilding

1. Description: To various areas as per schedule
2. Replacement materials: Stone, as clause 240 and brick, as clause 260
3. Mortar: As per schedule
   3.1. Standard: BS EN 998-2
   3.2. Mix: As per schedule
   3.3. Sand source/ type: As per schedule
4. Fixings: as per schedule
5. Rebuilding: To match previous face and joint lines, joint widths and bonding. Adequately bonded to retained work/ backing masonry, as appropriate.
6. Joint surfaces: Dampen, as necessary, to control suction.
7. Laying masonry units: On a full bed of mortar; perpend joints filled.
8. Exposed faces: Remove mortar and grout splashes immediately.
9. Joints:
10. Other requirements:

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: Reuse or source locally where possible
2. Stone: Bathstone
3. Bedding depths: TBC
4. Mortar: As per schedule
   4.1. Standard: BS EN 998-2
   4.2. Mix: AS per schedule
   4.3. Sand source/ type: Sand available from Cornish Lime, Bodmin
5. Fixings: Bonded dowels, as clause 405
6. Joints: Recessed weathered
7. Other requirements: None

350 Stone inserts

1. Description:
2. Stone:
3. Finish: Flush and to match existing.
4. Preparation and insertion: As clause 395.
5. Mortar: As section Z21.
   5.1. Standard:
   5.2. Mix:
   5.3. Sand source/ type:
6. Fixings:
7. Joints: Very fine.
8. Other requirements:

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: TBC
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. Description: AS per schedule
2. Standard: To BS EN 1090-1
3. Dowels: Austenitic stainless steel
4. Adhesive: Epoxy resin
5. Holes for dowels: Suitably sized and accurately aligned in masonry background and in rear of replacement/ insert stone; clean and dry.
6. 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.
2. Replacement: Compatible fixings as clause 405.

415 Stone pinnings for rubble stonework

1. Material for pinnings:
2. Placing: Tamp pinnings firmly into fresh mortar. Ensure mortar is thoroughly compacted into voids and that levelling and load distribution functions of pinnings are retained.

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.

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

620 Resin injection repair of cracks

1. Description: To cracks / splits to Bathstone
2. Resin injection system
    2.1. Manufacturer: Submit proposals
        2.1.1. Product reference: Submit proposals
3. Preparation: Clean out cracks to remove debris, dust and dirt. Secure loose masonry units.
4. Exposed faces: Keep clean and free from stains.
5. Resin application: Use methods recommended by system manufacturer to fully bond masonry.
6. Completion: After resin has cured, remove temporary crack plugging material and protective coatings.
7. Pointing to cracks and injection holes:

Grouting rubble filled cores

710 Preparation for grouting

1. Grouting holes: Drill in joints at horizontal and vertical centres to suit coursing and to achieve an effective distribution of grout so that, on completion, all voids in masonry are filled.
2. Maximum height of each grout pour: Regulate to prevent disruption to masonry.
3. Open joints in masonry: Seal with an approved temporary material to prevent leaking of grout. Leave weep holes every two or three courses to assist in flushing out dust and debris, and to

prove effectiveness of grouting. Locate temporary seal back from facework to allow for specified repointing. Seek instructions if repointing precedes grouting.

712 Flushing out

1. Timing: Before grouting.
2. Requirement: Flush out core of masonry walls using clean water delivered under moderate pressure through grouting holes.

Pointing/ repointing

810 Preparation for repointing

1. Existing mortar: Working from top of wall downwards, remove mortar carefully, without damaging adjacent masonry or widening joints, to a minimum depth of of twice the joint with .
   1.1. Loose or friable mortar: Seek instructions when mortar beyond specified recess depth is loose or friable and/ or if cavities are found.
2. Raked joints: Remove dust and debris.

820 Pointing

1. Description: As per schedule
2. Preparation of joints: As per schedule
3. Mortar: As per schedule
   3.1. Standard: As per schedule
   3.2. Mix: As per schedule
   3.3. Sand source/ type: As per schedule
4. Joint profile/ finish: As per schedule
5. Other requirements: As per schedule

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

To be read with preliminaries/ general conditions.

105 Precontract survey

1. General: An assessment of the roof has been undertaken to require preventative treatment prior to the recovering of the roof and associated areas.

115 Survey and report

1. Survey generally
   1.1. Purpose: To ascertain nature and extent of fungal/ beetle attack. To ascertain sources and extent of any dampness.
   1.2. Timing: Before starting eradication work carry out survey and submit survey report.
2. Survey report content
   2.1. Description of investigation methods.
   2.2. Factors affecting execution of the work: Identify problematic site conditions and restrictions, including the presence of bats, barn owls, other protected species or breeding birds.
   2.3. Laboratory results identifying attacking organisms. Plan and section drawings or annotated photographs, defining extent of attack.
   2.4. Proposals for eradication treatments and procedures, including measures to halt damp penetration and promote drying out.
   2.5. Measurements of wood moisture content, with identification of instances above 20%.
   2.6. Identification of neighbouring buildings that may be involved in attack.
   2.7. Associated work: Nature and extent of repair/ replacement work required to load bearing constructions and to the building fabric in general.
   2.8. Other information: Any considered relevant.

120 Associated work

1. Work shown to be necessary by survey: additional works may be revealed once the removal of the roof coverings and associated areas uncovered.

140 Opening up/ Cutting out/ Removal of building fabric

1. Extent: Removal of all roof covering and associated leadwork and opening up of the masonry adjacent to truss feet.
2. Retained building fabric: Maintain stability and do not damage.

150 Drying out of building fabric

1. Drying conditions: Establish as soon as possible.
2. Drying methods: Force drying of structure through dehumidification and gentle heat

162 Preparation generally for preservative/ Fungicide treatments to timbers/ Masonry

1. Furnishings/ components/ finishes within treated areas: Prevent staining and other adverse effects.
2. Water supplies: Do not contaminate.
3. Electrical equipment and supplies: Isolate circuits as required and prevent ingress of treatment fluids.

4. Cleanliness: Remove loose material, dust and debris from surfaces to be treated.

210 Dry rot

1. Fruiting bodies: Do not disturb. If heat treatment is not employed, spray with fungicide.
   1.1. Removal: Remove carefully. Clean surfaces.
2. Infected material to be removed: Remove carefully, causing minimum disturbance and damage to adjacent building fabric; dispose of safely at a tip approved by a waste regulation authority. Prevent contamination of other parts of the building.
3. Infected material to be retained:

220 Wet rot

1. Decayed timber to be removed: Cut out until sound timber is reached.
   1.1. Disposal of previously treated timber: At a tip approved by a waste regulation authority.
2. Decayed timber to be retained:

230 Beetle infestation

1. Infected timber: Cut, scrape and trim back to sound timber where heat treatment is not employed. Remove debris immediately and dispose of safely at a tip approved by a waste regulation authority. Prevent contamination of other parts of the building.

240 Salvaged materials

1. Sound, uninfected materials: Give notice before reusing/ recycling.

310 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 as manufacturers' recommendations.

318 Timber preservative treatment

1. Description: Rentokil Initial Woodworm Treatment Solution - Professional or equal and approved
2. Preservative type: water based - Permethrin, IBPC, Tebucanazole, Propiconazole
3. Tint: Clear
4. Treatment method: Brush application

323 Timber preservative treatment

1. Description:
2. Manufacturer:
   2.1. Product reference:
3. Tint:
4. Treatment method:

338 Masonry fungicide treatment

1. Fungicide type:
2. Tint:
3. Treatment method:

343 Masonry fungicide treatment

1. Manufacturer:
   1.1. Product reference:
2. Tint:
3. Treatment method:

355 Drilling timber for injection of preservatives

1. Sizes and location of holes: Submit proposals.
2. Sealing holes after treatment:
3. Approval of appearance: Obtain approval of first few holes before completing remainder.

390 Guarantee

1. Type: Insurance 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 installation.

Ω End of Section

G20
Carpentry/ timber framing/ first fixing

Clauses

2 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:

5 Structural softwood

1. Description: AS indicated on tender drawings
2. Grading standard: To the appropriate BS EN 14081-1-compliant standard.
   2.1. Grade: SS to BS 4978
3. Strength class to BS EN 338: C24
4. Treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C8, Service life: 40 years

10 Ungraded softwood

1. Description: for carcassing works only
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: Regularized
4. Treatment: CCA impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C5, Service life: 40 years

15 Plywood

1. Description: To tops of dormers
2. Standard: To an approved national standard.
3. Service class to BS EN 1995-1-1: Class 2
4. Use class to BS EN 335: Use class 2
5. Nominal thickness: 19 mm
6. Bonding quality to BS EN 314-2: Class 2
7. Finish: Unsanded
8. Treatment: None

30 Selection and use of timber

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

32 Notches, holes and joints in timber

1. Notches and holes: Position in relation to knots or other defects such that the strength of members will not be reduced.
2. Scarf joints, finger joints and splice plates: Do not use without approval.

35 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.

40 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%.

41 Bolt/ Screw assemblies

1. Description: To various locations
2. Designation: As specified in the Schedule of Works
3. Coating applied by manufacturer: Galvanized or Zinc plated
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 minimum 3 times bolt diameter, with a thickness not less than 0.25 times bolt diameter.

55 Joists generally

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

97 Eaves soffit ventilators

1. Manufacturer: AS Specified or submit proposals
   1.1. Product reference: TBC
2. Colour:
3. Airway: The equivalent of a continuous opening of not less than …… mm for full length of eaves.

98 Eaves soffit ventilation

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

99 Fascias/ barges/ soffits

1. Description: AS specified or as per tender drawings
2. Manufacturer: Contractor's choice
   2.1. Product reference: Submit proposals

3. Material: Softwood
4. Finish: PSE
5. Colour: Decorated black
6. Nominal depth: As specified or as per drawing details
7. Edge profile: removal of harris edges
8. Accessories/ Other requirements: None
9. Support: As shown on drawing details
   9.1. Provide additional support at joints.
10. Fixings: As specified or agreed on site with C/A
11. Installer: A contractor approved by the system manufacturer.

Ω End of Section

H20
Rigid sheet cladding

Clauses

10 Sheet cladding

1. Description: To first floor office
2. Backing wall: Treated 50 x 25mm battens on stone works
3. Board/ Sheet
   - 3.1. Manufacturer: Celenit
     - 3.1.1. Product reference: Wood-wool
   - 3.2. Material: Wood-wool
   - 3.3. Thickness: 15mm
   - 3.4. Finish/ Colour: white /grey as manufactured
   - 3.5. Fasteners: As manufacturers recommendations
     - 3.5.1. Number and location: As manufacturers recommendations
   - 3.6. Joints
     - 3.6.1. Type/ Treatment: Open
     - 3.6.2. Width: Close butted
4. Air gap: 25 mm
5. Support system: Timber battens as clause 30, size 50 x 25 mm
   - 5.1. Fasteners: As manufacturers recommendations
     - 5.1.1. Number and location: As manufacturers recommendations
6. Breather membrane: As manufacturers recommendations

30 Timber battens

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.

60 Cover strips

1. General: Form straight runs in single lengths wherever possible.
2. Location and method of forming joints: Submit proposals where not detailed.

Ω End of Section

H60
Plain roof tiling

Clauses

3 Roof tiling

1. Description: Ridge Tiles plain and cock comb
2. Substrate: Natural slate
3. Pitch: 35°
4. Underlay: Vapour permeable underlay to BS EN 13859, Class W1
   4.1. Recycled content: Submit proposals
   4.2. Head-lap (minimum): 100 mm.
5. Battens
   5.1. Size: 50 x 25 mm
   5.2. Fixing: 65 x 3.35 mm galvanized annular ring shank nails
6. Tiles:
   6.1. Manufacturer: Redland or Marley
      6.1.1. Product reference: Submit proposals
   6.2. Pattern: Plain and cocks comb
   6.3. Colour: Terracotta
   6.4. Size: To match existing
   6.5. Recycled content: Not applicable
   6.6. Head-lap (minimum): 65 mm.
   6.7. Fixing

20 Remove existing tiling

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

25 Underlay

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

32 Batten fixing

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

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.

47 Eaves

1. Ventilation components
   1.1. Manufacturer:
2. Product reference:
3. Underlay support:
   3.1. Continuous to prevent water retaining troughs.
4. Gutter: Dress underlay or underlay support tray to form drip into gutter.
5. Undercourse and first course tiles: Fix with tails projecting 50 mm over gutter or to centre of gutter.

87 Roof slope terminals

1. Ventilator tiles
   1.1. Manufacturer:
2. Product reference:
   2.1. Connect to …….

Ω End of Section

H62
Natural slating

Clauses

3 Roof slating

1. Description: New Delabole or Trevillet Slate
2. Substrate: Slaters battening
3. Pitch: 48
4. Underlay: Vapour permeable underlay to BS EN 13859, Class W1
   - 4.1. Recycled content: Submit proposals
   - 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: Delabole or Trevillet
     - 6.1.1. Product reference: As per schedule of works
   - 6.2. Type: Blue / grey
   - 6.3. Size: AS per schedule of works
   - 6.4. Head-lap (minimum): 98 mm
   - 6.5. Fixing: Two nails each slate.

10 Vertical slating

1. Description: To Dormer cheeks
2. Substrate: Horizontal battening of counter battens
3. Underlay: Vapour permeable underlay to BS EN 13859, Class W1
   - 3.1. Recycled content: Submit proposals
   - 3.2. Horizontal lap (minimum): 150 mm.
4. Battens
   - 4.1. Size: 50 x 25 mm
   - 4.2. Fixing: 65 x 3.35 mm galvanized annular ring shank nails
5. Slates
   - 5.1. Supplier: Delabole or Trevillet (Second Hand)
     - 5.1.1. Product reference: Rag slate
   - 5.2. Type: Blue / grey
   - 5.3. Size: Rag
   - 5.4. Head-lap (minimum): 100mm
   - 5.5. Fixing: Two / three nails each slate depending on size

25 Underlay

1. Laying: Maintain consistent tautness.
2. Vertical laps (minimum): 100 mm wide, coinciding with supports.
3. Fixing: Galvanized steel, copper or aluminium 20 x 3 mm extra large clout head nails.

4. Eaves: Where exposed, use an external grade (UV resistant) underlay or a proprietary eaves support product.
5. Penetrations: Use proprietary underlay seals or cut underlay neatly.

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: as per schedule of works

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 or as per schedule of works
   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.

42 Fire separating walls

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

47 Eaves

1. Ventilation components

1.1. Manufacturer: Manthorpe

1.1.1. Product reference: G502

2. Underlay support: Manthorpe G1281

2.1. Continuous to prevent water retaining troughs.

3. Gutter: Dress underlay or underlay support tray to form drip into gutter.

4. Undercourse and first course slates: Fix with tails projecting 50 mm over gutter or to centre of gutter.

52 Bedded verges with bedded undercloak

1. Underlay: Carry 50 mm onto outer leaf of gable wall and bed on mortar.

2. Undercloak: Slates, sloping towards verge and projecting 38-50 mm beyond face of wall.

2.1. Bedding: On mortar identical to that used in gable walling.

3. Slating battens: Carry onto undercloak and finish 100 mm from verge edge.

4. Verge slates: Bed flush with undercloak on 75 mm wide bed of mortar. Point with flush profile.

53 Bedded verges with nailed undercloak

1. Underlay: Carry over full width of verge.

2. Undercloak: Slates, nail fixed, sloping towards verge and projecting 38-50 mm beyond face of …….

3. Slating battens: Carry onto undercloak and finish 100 mm from verge edge.

4. Verge Slates: Bed flush with undercloak on 75 mm wide bed of mortar. Point with flush profile.

56 Mitred hips

1. Underlay: Lay courses over hip. Overlaps (minimum) 150 mm.

2. Mitred slates: Cut extra wide slates and fix to form a straight, close mitred junction.

3. Soakers: Interleave and turn down over head of mitred slates.

57 Mortar bedded and mechanically fixed tile hips

1. Underlay: Lay courses over hip. Overlaps (minimum) 150 mm.

2. Hip tile fixing battens:

3. Roof slates: Cut and fix closely at hip.

4. Hip irons: Galvanized steel in accordance with BS 5534, clause 4.15.4. Fix to hip rafter or hip batten with not less than two zinc coated steel screws.

5. Hip tiles

5.1. Manufacturer:

5.1.1. Product reference:

5.2. Bedding: On mortar, continuous to edges and solid to joints.

5.3. Fixing: Secure all hip tiles to hip rafters or hip tile fixing battens with self-sealing non-ferrous through fixings.

5.4. Bottom hip tiles: Shape neatly to align with corner of eaves and fill ends with mortar and slips of tile finished flush.

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.

2.1. Valley width between slates: 150mm

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 and mechanically fixed tile ridges

1. Underlay: Lay courses over ridge. Overlap (minimum) 150 mm.
2. Ridge tile fixing battens: N/A mortar bedded
3. Ridge tiles
   - 3.1. Manufacturer: Redland
     - 3.1.1. Product reference: Submit proposals
   - 3.2. Bedding: On mortar, continuous to edges and solid to joints.
   - 3.3. Fixing: Secure all ridge tiles to ridge boards or ridge tile fixing battens with self-sealing non-ferrous fixings.
   - 3.4. Gable end ridge tiles: Fill ends with mortar and slips of tiles finished flush.
4. Ridge terminals
   - 4.1. Manufacturer: Submit proposals
     - 4.1.1. Product reference: Submit proposals

87 Roof slope terminals

1. Ventilator slates: To provide ventilation to welfare facilities
   - 1.1. Manufacturer: Submit proposals
     - 1.1.1. Product reference: Submit proposals
   - 1.2. Connect to kitchen ventilation pipes and bathroom ventilation pipes.

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 coverings/ flashings

Clauses

10 Gutter linings

1. Substrate: Timber boarding on (50 x 50 mm) treated timber battens forming ventilated cavity
   1.1. Preparation: Not required
2. Sheet underlay: Building paper to BS 1521, Class A1
3. Lead
   3.1. Type: Rolled to BS EN 12588
   3.2. Thickness: 2.00 or 2.24 mm (Code 5)
4. Cross joints: Drips
   4.1. Spacing: At gutter watersheds
5. Outlets: Turn down 75 mm into fascia gutter

15 Valley gutter linings to slate/ tile roofs

1. Sheet underlay: Building paper to BS 1521, Class A1
2. Lead
   2.1. Type: Rolled to BS EN 12588
   2.2. Thickness: 2.65 mm (Code 6).
3. Laying: Over and beyond tilting fillets. In lengths not more than 1500 mm.
4. Cross joints: Lapped not less than 200 mm .
5. Fixing: Welt edges. Nail top edge of each sheet. Dress bottom edge neatly into eaves gutter.

27 Soakers for mitred hips to slate/ plain tile roofs

1. Lead
   1.1. Type:
   1.2. Thickness: 1.80 mm (Code 4).
2. Dimensions
   2.1. Length: Slate/ tile gauge + lap + 25 mm.
   2.2. Underlap: Not less than 150 mm.

30 Apron flashings

1. Description: To Chimneys and wall abutments
2. Lead
   2.1. Type: Rolled to BS EN 12588
   2.2. Thickness: 2.24mm (Code 5).
3. Dimensions
   3.1. Lengths: Not more than 1500 mm.
   3.2. End to end joints: Laps not less than 100 mm.
   3.3. Upstand not less than 75 mm.
   3.4. Cover to abutment: Not less than 220 mm.
4. Fixing
   4.1. Top edge: Lead wedges into bed joint.

4.2. Bottom edge: Clips.
4.3. Material: Lead

35 Cover flashings

1. Lead
   1.1. Type: Rolled to BS EN 12588
   1.2. Thickness: 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. Cover: Overlap to upstand not less than 75 mm.
3. Fixing
   3.1. Top edge: Lead wedges into bed joint.
   3.2. Bottom edge: Clips.
      3.2.1. Material: Lead
      3.2.2. Spacing: Follow the schedule of works

41 Soakers and step flashings

1. Description: To abutment areas of slating and various roofing details
2. Lead soakers
   2.1. Lead:
   2.2. Type: Rolled to BS EN 12588
      2.2.1. Thickness: 2.24 mm (Code 5).
   2.3. Dimensions
      2.3.1. Length: Slate/ tile gauge + lap + 25 mm.
      2.3.2. Upstand: Not less than 75 mm.
      2.3.3. Underlap: Not less than 100 mm.

52 Chimney flashings

1. Lead
   1.1. Type: Rolled to BS EN 12588
   1.2. Thickness: 2.24mm (Code 5).
2. Front apron
   2.1. Dimensions
      2.1.1. Length: Width of chimney plus not less than 150 mm underlap to each side flashing.
      2.1.2. Upstand: Not less than 75 mm.
      2.1.3. Cover to roof: Not less than 220 mm.
   2.2. Fixing: Lead wedges into bed joint.
3. Back gutter
   3.1. Dimensions
      3.1.1. Length: Width of chimney plus not less than 100 mm overlap to each side flashing.
      3.1.2. Upstand: Not less than 100 mm.
      3.1.3. Gutter Sole: Not less than 150 mm.
      3.1.4. Cover up roof: Not less than 225 mm.
4. Back gutter cover flashing

4.1. Dimensions

4.1.1. Length: Width of chimney plus not less than 100 mm overlap to each side flashing.

4.1.2. Cover: Overlap to back gutter upstand not less than 75 mm.

4.2. Fixing: Lead wedges into bed joint.

57 Vertical slating angle soakers

1. Lead
   1.1. Type: Rolled to BS EN 12588
   1.2. 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 at any point.

60 Materials and workmanship generally

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

62 Leadwelding

1. In situ leadwelding: Not permitted.

64 Sheet underlay

1. Manufacturer: Submit proposals
   1.1. Product reference: Submit proposals
2. Weight: 220 g/m²
3. Recycled content: 90% (minimum) to BS EN ISO 14021

75 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.

76 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.

2.3. Turn up at abutments.

3. Wood core rolls: Fixed over underlay.
4. Protection: Keep dry and cover with lead at the earliest opportunity.

77 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%.

78 Fixing lead sheet

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

80 Clips

1. Material
   1.1. Lead clips: Cut from sheets of the same thickness/ code as sheet being secured.
   1.2. Copper clips: Cut from 0.70 mm thick sheet to BS EN 1172, temper R220 (soft) or R240 (half hard) depending on position, dipped in solder if exposed to view.
   1.3. Stainless steel: Cut from 0.38 mm sheet to BS EN 10088-1, grade 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 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.
4. Fixing lead sheet: Welt clips around edges and turn over 25 mm.

83 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:
   3.1. Application: As section Z22.

85 Wedge fixing into damp-proof course joints

1. Joint: Rake/ cut out under damp proof course to a depth of not less than 25 mm.
2. Lead: Dress into joint.

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:

3.1. Application: As section Z22.

92 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 screws at 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.

94 Drips with splash laps

1. Underlap: Dress into rebate along top edge of drip.

1.1. Fixing: One row of nails on centre line of rebate.

2. Overlap: Dress over drip and form a 40 mm splash lap.

96 Drips with splash laps

1. Underlap: Dress up full height of drip upstand.

1.1. Fixing: Two rows of nails to lower level substrate. Seal over nails with a soldered or leadwelded dot.

2. Overlap: Dress over drip and form a 75 mm splash lap.

2.1. Fixing: Lead clips leadwelded to underlap at bay centres.

98 Welted joints

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

Ω End of Section

M20
Plastered/ rendered/ roughcast coatings

Clauses

10 Cement:lime:sand

1. Description: External render
2. Substrate: Stone
   2.1. Preparation: Removal of all loose and friable material
3. Mortar: NHL2 and CLS 35
4. Sand: To BS EN 13139.
   4.1. Grading: 0/2 or 0/4 (CP or MP); category 2 fines.
5. Lime: Nonhydraulic to BS EN 459-1, type CL 90S.
6. Undercoats
   6.1. Mix (cement:lime:sand): NHL2 and CLS 35 ratio 1/2.5
   6.2. Thickness (excluding dubbing out and keys): TBA
7. Final coat
   7.1. Mix (cement:lime:sand): NHL2 and CLS 35 ratio 1/3
   7.2. Thickness: TBA
8. Finish: troweled / sponge

42 Proprietary plaster

1. Description: Plastering to Celenit Boarding
2. Substrate: 15mm Celenit boarding
   2.1. Preparation: Apply bonding coat
3. Manufacturer: Cornish Lime, Bodmin
4. Undercoats
   4.1. Product reference: As per schedule of works
   4.2. Thickness (excluding dubbing out and keys): First coat 8-12 mm and second coat 6-10 mm
5. Final coat
   5.1. Product reference: Refer to Cornish lime details for Celenit boarding
   5.2. Thickness: 5-8 mm
   5.3. Finish: Smooth

50 Gypsum plaster skim coat on plasterboard

1. Plasterboard manufacturer: Submit proposals
   1.1. Product reference: Submit proposals
2. Plaster: Board finish plaster to BS EN 13279-1, class B.
   2.1. Manufacturer: British Gypsum
      2.1.1. Product reference: Gyproc Thistle Board-Finish
   2.2. Thickness: 2-5 mm
   2.3. Finish: Smooth.

67 Cold weather

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

71 Suitability of substrates

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

74 Existing damp affected plaster/ render

1. Plaster affected by rising damp: Remove to a height of 300 mm above highest point reached by damp or 1 m above dpc, whichever is higher.
2. Perished and salt contaminated masonry
   2.1. Mortar joints: Rake out.
   2.2. Masonry units: Submit proposals.
3. Drying out substrates: Establish drying conditions.

76 Removing defective existing plaster

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

78 Removing defective existing render

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

80 Plasterboard backings

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

82 Beads/ stops

1. Location: External angles and stop ends.
2. Materials
   2.1. External render:
   2.2. Internal plaster/ render:
3. Fixing: Secure and true to line and level.
   3.1. Beads/ stops to external render: Fix mechanically.

87 Application of coatings

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

93 Curing and drying of render coatings

1. Curing: Keep each coat damp by covering with polyethylene sheet and/ or spraying with water
   1.1. Curing period (minimum):
2. Drying: Allow each coat to dry thoroughly, with shrinkage substantially complete before applying next coat.

95 Render final coat – dry dash

1. Aggregate: To BS EN 12620. Well washed.
   1.1. Type/ Size:
2. Application: Achieve firm adhesion and an even overall appearance.

97 Render final coat – scraped finish

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

99 Render final coat – plain floated finish

1. Finish: Even, open texture free from laitance.

Ω End of Section

M60
Painting/ clear finishing

Clauses

10 Emulsion paint

1. Description: Internal decoration
2. Manufacturer: Beeck
   2.1. Product reference: Maxil
3. Surfaces: Masonry
   3.1. Preparation: Thoroughly remove as much old coating without excessive damage
4. Initial coats: 2
   4.1. Number of coats: 4
5. Undercoats: As recommended by manufacturer

12 Gloss paint

1. Description: To external joinery
2. Manufacturer: Dulux
   2.1. Product reference: Weathershield
3. Surfaces: Preprimed and sealed / Previously decorated
   3.1. Preparation: Remove all loose and defective coatings Degrease and provide key Ensure surfaces are clean and dry
4. Initial coats: As recommended by manufacturer
   4.1. Number of coats: 2
5. Undercoats: 2
   5.1. Number of coats: 4
6. Finishing coats: Full gloss
   6.1. Number of coats: 2

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 assessment and method statement for 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.
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. Doors, opening windows and other moving parts

11.1. Ease, if necessary, before coating.

11.2. Prime resulting bare areas.

32 Previously coated surfaces generally

1. Preparation: In accordance with BS 6150, clause 11.5.
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: Apply additional preparatory coats.
9. Completely stripped surfaces: Prepare as for uncoated surfaces.

35 Fixtures and fittings

1. Risk assessment and method statement for hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
2. Removal: Before commencing work: …….
3. Replacement: Refurbish as necessary, refit when coating is dry.

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

41 Masonry and rendering preparation

1. Loose and flaking material: Remove.

43 Plaster preparation

1. Nibs, trowel marks and plaster splashes: Scrape off.
2. Overtrowelled ‘polished’ areas: Provide suitable key.

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:
      3.1.1. Product reference:
   3.2. Preparation and application: As section Z22.

52 Sealing of internal movement joints

1. General: To junctions of walls and ceilings with architraves, skirtings and other trims.
2. Sealant: Water-borne acrylic.
   2.1. Manufacturer:
      2.1.1. Product reference:
   2.2. Preparation and application: As section Z22.

55 Existing gutters

1. Dirt and debris: Remove from inside of gutters.
2. Defective joints: Clean and seal with suitable jointing material.
3. Suspected hazardous materials: submit method statement.

61 Coating generally

1. Application standard: In accordance with BS 6150, clause 9.
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. Priming coats: Apply as soon as possible on same day as preparation is completed.
6. Finish
   6.1. Even, smooth and of uniform colour.
   6.2. Free from brush marks, sags, runs and other defects.
   6.3. Cut in neatly.
7. Doors, opening windows and other moving parts: Ease before coating and between coats.

65 Concealed joinery surfaces

1. General: After priming, apply additional coatings to surfaces that will be concealed when component is fixed in place.
   1.1. Components:
   1.2. Additional coatings:

66 Concealed metal surfaces

1. General: Apply additional coatings to surfaces that will be concealed when component is fixed in place.
   1.1. Components:
   1.2. Additional coatings:

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

Q22
Asphalt resin roads/ pavings

Clauses

30 Laying generally

1. Preparation: Remove all loose material, rubbish and standing water.
2. Adjacent work: Form neat junctions. Do not damage.
3. Channels, kerbs, inspection covers etc: Keep clean.
4. Permissible deviation from the required levels, falls and cambers (maximum): In accordance with BS 594987, Table 7.
5. New paving
   - 5.1. Keep traffic free until it has cooled to prevailing atmospheric temperature.
   - 5.2. Do not allow rollers to stand at any time.
   - 5.3. Prevent damage.
   - 5.4. Lines and levels: With regular falls to prevent ponding.
   - 5.5. Overall texture: Smooth, even and free from dragging, tearing or segregation.
   - 5.6. Condition on completion: Clean.

Ω End of Section

Q23
Gravel/ hoggin/ woodchip/ resin bound roads/ pavings/ overlays

Types of surfacing

170 Loose gravel overlay

1. Description: Granite chippings
2. Base: Existing
   2.1. Preparation: Clear out all weed growth and apply pet friendly herbicide
3. Gravel: Loose laid and raked to uniform thickness:
   3.1. Type: Granite
   3.2. Source: Locally
   3.3. Colour: Natural
   3.4. Size: Graded 14-19 mm
   3.5. Thickness: 75 mm

Laying

330 Herbicide to paving Q23/

1. Description:
2. Type: Suitable for the application, location and conditions of use.
3. Weeds and moss: Grub up.
4. Application: As section A34, before surfacing.

340 Laying generally

1. Channels, gullies, etc: Keep clear.
2. Finished surfaces
   2.1. Lines and levels: To prevent ponding.
   2.2. Overall texture: Even.
   2.3. State at completion: Clean.

370 Laying granular surfaces in vehicular areas

1. Permissible deviation from required levels, falls and cambers (maximum): ±20mm.
2. General: Spread and level in 150 mm maximum layers. As soon as possible compact each layer.
3. Dry weather: Lightly water layers during compaction.

380 Laying granular surfaces in pedestrian areas and cycle tracks

1. Permissible deviation from required levels, falls and cambers (maximum): ±12 mm.
2. General: Spread and level in 100 mm maximum layers. As soon as possible, compact each layer.
3. Dry weather: Lightly water layers during compaction.

Completion - Not Used

Ω End of Section

Q25
Slab/ brick/ sett/ cobble pavings

General

140 Natural stone sett paving system

1. Description: Granite Sett edging
2. Base: Submit proposals
   2.1. Thickness: 100 mm
3. Laying course: Submit proposals
   3.1. Accessories: None
4. Paving units: Natural stone setts
5. Jointing: Submit proposals
   5.1. Bond: To match existing
6. Accessories: None

System performance - Not Used

Products

380 Lime for site mixed mortar

1. Description:
2. Standard: Nonhydraulic to BS EN 459-1, -2 and -3, type CL 90 or, if ready-mixed lime:sand, to BS EN 998-2.

Execution

695 Site mixed mortar

1. Description: - JOINTING FOR NATURAL STONE SETT PAVING
2. Mix: 1:3 cement:sand
3. Consistency: Stiff plastic
4. Admixtures: None

Completion - Not Used

Ω End of Section

R10
Rainwater drainage systems

Clauses

50 Installation generally

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

60 Gutters laid to fall

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

65 Gutters laid level

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

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

T90
Heating systems - domestic

General

10 Heating system

1. Description: Large domestic
2. System: Two pipe
3. Heat sources: Boilers, gas-fired
4. Flues: Metal flue pipes
5. Feed and expansion cisterns: TBC
6. Pipelines: Copper
7. Valves: Thermostatic radiator valves
8. Circulating pumps: stratification
9. Insulation: Preformed flexible closed cell
10. Heat emitters: Radiators
11. System control: Thermostats
12. Completion: Documentation Labels Setting to work and commissioning Testing

System performance

21 Basic design temperatures

1. Room temperatures: Design the system to provide the following temperatures for the specified air change rates and an external air temperature of -4°C:
    1.1. Living rooms: 21°C, for 1.5 air changes per hour.
    1.2. Dining rooms: 21°C, for 1.5 air changes per hour.
    1.3. Bedsitting rooms: 21°C, for 1.5 air changes per hour.
    1.4. Bedrooms: 18°C, for 1 air changes per hour.
    1.5. Halls and landings: 18°C, for 1.5 air changes per hour.
    1.6. Kitchens: 18°C, for 2 air changes per hour.
    1.7. Bathrooms: 22°C, for 2 air changes per hour.
    1.8. Toilets: 18°C, for 2 air changes per hour.
2. Submittals:

25 Heating system capacity

1. Total heat load: Calculated to BS EN 12831-1.
2. Heat up load:

26 Heating and hot water supply system capacity

1. Total heat load: Calculated to BS EN 12831-1 and -3.
2. Heat-up load:

27 System control

1. Temperature and time control: Fully automatic and independent.
2. Controls: Compatible with each other and with central heating boiler.

28 Combustion air supply to gas appliances

1. Sizes: Existing system
2. Locations:

Products

30 Boilers, gas-fired

1. Description: Existing system
2. Manufacturer:
   2.1. Product reference:

48 Copper pipelines for general use

1. Description:
2. Standard: To BS EN 1057.
3. Third party certification: Kitemark.
4. Temper: Half hard R250.
5. Wall thickness (nominal)
   5.1. OD 6, 8, 10 and 12 mm: 0.6 mm.
   5.2. OD 15 mm: 0.7 mm.
   5.3. OD 22 and 28 mm: 0.9 mm.
   5.4. OD 35 and 42 mm: 1.2 mm.
6. Microbore temper: Soft coil R220.
7. Microbore wall thickness (nominal)
   7.1. OD 6 and 8 mm: 0.6 mm.
   7.2. OD 10 mm: 0.7 mm.
8. Jointing: Integral lead-free solder ring capillary fittings.
   8.1. Standard: To BS EN 1254-1.
9. Connections to appliances and equipment:
10. Supports:

49 Copper pipelines, coated

1. Description:
2. Standards:
3. Plastic coated to BS EN 1057 and BS EN 13349
   3.1. Chrome-plated to BS EN 1057 and BS EN ISO 1456
4. Third party certification: Kitemark.
5. Temper: Half hard R250.
6. Wall thickness (nominal)
   6.1. OD 6, 8, 10 and 12 mm: 0.6 mm.
   6.2. OD 15 mm: 0.7 mm.
   6.3. OD 22 and 28 mm: 0.9 mm.
   6.4. OD 35 and 42 mm: 1.2 mm.
7. Microbore temper: Soft coil R220.
8. Microbore wall thickness (nominal)
   8.1. OD 6 and 8 mm: 0.6 mm.

8.2. OD 10 mm: 0.7 mm.

9. Jointing: Integral lead-free solder ring capillary fittings.
   9.1. Standard: To BS EN 1254-1.
10. Connections to appliances and equipment:
    10.1. Colour:
11. Supports:

53 Valves generally

1. Types: Approved for the purpose by local water supply undertaker and of appropriate pressure and temperature ratings.
2. Control of valves: Fit with handwheels for isolation and lockshields for isolation and regulation of circuits or equipment.

60 Natural convector heaters

1. Description:
2. Standard: To BS EN 442-1 and -2.
3. Type:
4. Manufacturer:
   4.1. Product reference:
5. Output:
6. Sizes:
7. Casing finish:
8. Features:

61 Radiators

1. Description: Existing System to be reinstated
2. Standard: To BS EN 442-1 and -2.
3. Type: Double panel double convector
4. Manufacturer: Submit proposals
   4.1. Product reference: Submit proposals
5. Output: Submit proposals
6. Sizes: Submit proposals
7. Connections: 15 mm BOE
8. Material: Manufacturer's standard Steel
9. Finish: White stove enamelled

Execution

72 Stripping out

1. Extent of stripping out: To allow proposed refurbishment works

73 Installation generally

1. Standard: To BS EN 14336.
2. Performance: Free from leaks and the audible effects of expansion, vibration and water hammer.
3. Fixing of equipment, components and accessories: Fix securely, parallel or perpendicular to the structure of the building.

4. Preparation: Immediately before installing tanks and cisterns on a floor or platform, clear the surface completely of debris and projections.
5. Corrosion resistance: In locations where moisture is present or may occur, use corrosion resistant fittings/ fixings and avoid contact between dissimilar metals by use of suitable washers, gaskets, etc.

74 Installation of feed and expansion cisterns

1. Outlet positions: Connect lowest outlets at least 30 mm above bottom of cistern.
2. Water level (minimum): 25 mm below the overflow level of the warning pipe.
3. Access: Fix cistern with a minimum clear space of 350 mm above, or 225 mm if the cistern does not exceed 450 mm in any dimension.
4. Mounting height above the highest point of the circulation system (minimum): 1 m.
5. Location: Provide sufficient space for cleaning and maintenance, with enough clearance above the cistern to service the valve and accommodate the expansion pipe.
6. Plinth: Firm, level and continuous.
7. Jointing pipes to thermoplastics cisterns: To BS EN 806-4.
8. Insulation: Where the space below the cistern is heated do not insulate the underside.

75 Pipeline installation

1. Appearance: Install pipes straight, and parallel or perpendicular to walls, floors, ceilings, and other building elements.
2. Pipelines finish: Smooth, consistent bore, clean, free from defects, e.g. external scratching, toolmarks, distortion, wrinkling, and cracks.
3. Concealment: Generally conceal pipelines within floor, ceiling and/ or roof voids.
4. Access: Locate runs to facilitate installation of equipment, accessories and insulation and allow access for maintenance.
5. Arrangement of hot and cold pipelines: Run hot pipelines above cold where routed together horizontally. Do not run cold water pipelines near to heating pipelines or through heated spaces.
6. Electrical equipment: Install pipelines clear of electrical equipment. Do not run pipelines through electrical enclosures or above switch gear distribution boards or the like.
7. Insulation allowance: Provide space around pipelines to fit insulation without compression.

76 Pipeline fixing

1. Fixing: Secure and neat.
2. Joints, bends and offsets: Minimize.
3. Pipeline support: Prevent strain, e.g. from the operation of taps or valves.
4. Drains and vents: Fix pipelines to falls. Fit draining taps at low points and vents at high points.
5. Thermal expansion and contraction: Allow for thermal movement of pipelines. Isolate from structure. Prevent noise or abrasion of pipelines caused by movement. Sleeve pipelines passing through walls, floors or other building elements.
6. Dirt, insects or rodents: Prevent ingress.

77 Joints in copper pipelines

1. Preparation: Cut pipes square. Remove burrs.
2. Joints: Neat, clean and fully sealed. Install pipe ends into joint fittings to full depth.
3. Bends: Do not use formed bends on exposed pipework, except for small offsets. Form changes of direction with radius fittings.
4. Adaptors for connecting dissimilar materials: Purpose designed.

5. Substrate and plastics pipes and fittings: Do not damage, e.g. by heat when forming soldered joints.
6. Flux residue: Clean off.

78 Joints in thermoplastics pipelines

1. Fittings and accessories for joints: Purpose designed.
2. Preparation: Cut pipes square. Remove burrs.
3. Joints: Neat, clean and fully sealed. Install pipe ends into joint fittings to full depth.
4. Compression fittings: Do not overtighten.

79 Installation of oil storage tanks

1. Standard: In accordance with BS 5410-1.

80 Installation of heat pumps generally

1. Standards: To BS EN 378-3 and -4.
2. Fixing of equipment, components and accessories: Fix securely on purpose-made bases or supports.
3. External units: Protect from high winds. Prevent snow from blocking air flow.
4. Access: Provide for inspection and servicing of heat pumps and ancillary equipment.
5. Refrigerant lines: Short and straight.
6. Location of outdoor unit: Away from windows and adjacent buildings.

81 Installation of ground heat exchanger collectors

1. Horizontal loops: Lay on a bed of sand and cover with a further 150 mm layer of sand.
2. Vertical heat exchangers: Backfill with high conductivity grout, e.g. bentonite.
3. Pipelines: Continuous loop.
4. External pipelines: Insulate within 1.5 m of walls, structures or water pipes.
5. Warning tape: Install over buried pipes.
6. Mechanical couplings: Do not use on buried pipelines.

82 Installation of flues and chimneys generally

1. Standards: To BS EN 15287-1 or BS EN 15287-2.
2. Joints and bends: Minimize number.
3. Slope (maximum): 30° from the vertical.
4. Joints: Install with sockets uppermost, fully supported and fixed securely with brackets supplied for the purpose. Do not locate joints within the depth of floors.
5. Sealing of joints: To provide a gas-tight installation.
6. Expansion and contraction: Accommodate thermal movement.
7. Fire safety: Locate a safe distance from combustible materials.
8. Roof junction: Weatherproof. Fit terminal and flashings, collars, and the like.

Completion

90 Testing

1. Standard: To BS EN 14336.
2. Notice (minimum): 3 days.
3. Preparation: Secure and clean pipework and equipment. Fit cistern/ tank covers.

4. Leak testing: Start boiler and run the system until parts are at normal operating temperatures and then allow to cool to cold condition for a period of 3 h.
5. Gas pipelines: Test and purge to BS 6891.
6. Pressure testing: At both hot and cold conditions joints, fittings and components must be free from leaks and signs of physical distress when tested for at least 1 h as follows:
   6.1. Systems fed directly from the mains and systems downstream of a booster pump: Apply a test pressure equal to 1.5 times the maximum pressure to which the installation or relevant part is designed to be subjected in operation.
   6.2. Systems fed from storage: Apply a test pressure equal to the pressure produced when the storage cistern is filled to its normal maximum operating level.
   6.3. Inaccessible or buried pipelines: Carry out hydraulic pressure test to twice the working pressure.

91 Setting to work and commissioning

1. Equipment: Check and adjust operation of equipment, controls and safety devices.
2. Outlets: Check operation of outlets for satisfactory rate of flow and temperature.

92 Documentation

1. Manufacturers' operating and maintenance instructions: Submit for equipment and controls.
2. System operating and maintenance instructions: Submit for the system as a whole giving optimum settings for controls.
3. Record drawings: Submit drawings showing the location of circuits and operating controls.

93 Labels

1. Valve labels: Provide labels on isolating and regulating valves on primary circuits, stating their function.

Ω End of Section

V90
Electrical systems - domestic

General - Not Used

System performance

240 Design of general lighting system

1. Purpose: Reinstate existing lighting
2. Design and detailing: Complete for the general lighting system.
3. Standard: To SLL 'Code for lighting'.
4. Room: 3rd Floor
   4.1. Maintained average illuminance: 300 lux
   4.2. Glare index: 19
5. Maintenance: Submit proposals for the maintenance/ relamping regime.

265 Design and lighting calculations

1. Proposals: Submit drawings, technical information, calculations and manufacturers' literature.
2. Lighting calculations
   2.1. Type: Computer generated point calculations.
3. Submit the following
   3.1. Luminaire layout drawings.
   3.2. Luminaire photometric data including flux fraction ratios and polar intensity curves.
   3.3. Lamp technical information.
   3.4. Maintenance factor calculations, including proposals for luminaire maintenance and lamp replacement.
   3.5. Reflectance values used for all wall, ceiling and floor surfaces.
   3.6. Isolux contour plots for all relevant working planes, horizontal and vertical.
   3.7. Schedule of design and calculated maintained average illuminance values.
   3.8. Schedule of design and calculated uniformity values.

280 Earthing and bonding design

1. Design: Complete the design of the earthing and bonding systems.
2. Earthing, main protective bonding, supplementary bonding and protective conductors: In accordance with BS 7671 and BS 7430.
3. Requirements: Submit proposals.

Products

310 Products generally

1. Standard: In accordance with BS 7671.
2. CE marking: Required.

320 Distribution boards

1. Standards: To BS EN 61439-1 and BS EN 61439-3.
2. Manufacturer: Existing system
   2.1. Product reference:

3. Third-party certification: ASTA certified.
4. Rated operational voltage (Ue): 250 V
5. Rated operational frequency: Submit proposals
6. Rating: Submit proposals
7. Number of phases: Single
8. Incoming devices: Submit proposals
9. Number of outgoing ways: Submit proposals
10. Outgoing devices: Submit proposals
11. Enclosure
    11.1. Ingress protection to BS EN 60529: Submit proposals
    11.2. Material: Submit proposals

342 Rigid conduit and fittings

1. Description: Only where surface mounting is the only option
2. Standards: To BS 4607-5 or BS EN 61386-1 and BS EN 61386-21.
3. Manufacturer: Submit proposals
    3.1. Product reference: Submit proposals
4. Resistance to compression: Medium / Heavy
5. Resistance to impact: Medium / Heavy
6. Transport, installation and application
    6.1. Lower temperature range (minimum): -5°C
    6.2. Upper temperature range (maximum): 90° C
7. Resistance to bending: Rigid.
8. Electrical characteristics: Submit proposals
9. Resistance to external influences
    9.1. Protection against ingress of solid objects (minimum): To BS EN 60529, IP3X.
    9.2. Protection against ingress of water (minimum): To BS EN 60529, IPX0.
10. Resistance against corrosion: Submit proposals
11. Tensile strength: Submit proposals
12. Resistance to flame propagation: Submit proposals
13. Suspended load capacity: Submit proposals
14. Colour: As supplied
15. Sizes: Submit proposals
16. Accessories and fittings: Factory made by the conduit manufacturer of the same material type and finish as the conduit.

350 Cable trunking and cable ducting for wall and ceiling mounting

1. Description: Only where surface mounting is the only option
2. Standards: To BS EN 50085-1 and BS EN 50085-2-1.
3. Manufacturer: Submit proposals
    3.1. Product reference: Submit proposals
4. Installation position: Surface-mounted on the wall
5. Type: Submit proposals
6. Resistance to compression: Submit proposals
7. Resistance to impact: Submit proposals

8. Temperature properties
   8.1. Storage and transport temperature (minimum): -5°C
   8.2. Installation temperature (minimum): 5°C
   8.3. Application temperature (maximum): 90°C
9. Resistance to flame propagation: Submit proposals
10. Electrical continuity properties: Submit proposals
11. Electrical insulating properties: Submit proposals
12. Protection by enclosure
    12.1. Protection against ingress of solid objects (minimum): To BS EN 60529, IP4X.
    12.2. Protection against ingress of water (minimum): To BS EN 60529, IPX1.
    12.3. Protection against access to hazardous parts (minimum): To BS EN 60529, IPXX-D.
13. Means of opening access covers: Submit proposals
14. Sizes: Submit proposals
15. Compartments: Submit proposals
16. Accessories and fittings: Factory made by the cable trunking or ducting manufacturer and of the same material type and finish as the cable trunking or ducting.
    16.1. Types:

355 Plastics mini trunking

1. Description: Only where surface mounting is the only option
2. Standard: To BS EN 50085-1.
3. Manufacturer: Submit proposals
   3.1. Product reference: Submit proposals
4. Sizes: Submit proposals
5. Compartments: Submit proposals
6. Accessories and fittings: Factory made of the same material type, finish and thickness as cable trunking.
7. Resistance to flame propagation: Submit proposals
8. Colour: White
9. Fixing method: Self-adhesive backing strip

410 Cables generally

1. Approval: British Approvals Service for Cables (BASEC) certified.
2. Cable sizes not stated: Submit proposals and calculations.

420 Protective conductors

1. Type: Cable conductors with yellow/ green sheath.

511 Lamps generally

1. Standards
   1.1. Compact fluorescent lamps: To BS EN 60901 and BS EN 61199.
   1.2. High-pressure mercury lamps: To BS EN 60188 and BS EN 62035.
   1.3. High-pressure sodium lamps: To BS EN 62035.
   1.4. Light-emitting diodes (LEDs): To BS EN 62031.
   1.5. Metal halide lamps: To BS EN 62035.
   1.6. Tubular fluorescent lamps

1.6.1. Single-capped lamps: To BS EN 60901 and BS EN 61199.

1.6.2. Double-capped lamps: To BS EN 60081 and BS EN 61195.

1.7. Tungsten halogen lamps: To BS EN 60432-2 and BS EN 60357.

2. Manufacturer:

2.1. Lamps of the same type and rating: Same manufacturer.

580 Earthing and bonding equipment

1. Earth electrodes: In accordance with BS 7430.
2. Electrode type:
3. Earth clamps: To BS 951.

Execution

610 Electrical installation generally

1. Standard: In accordance with BS 7671.

615 Installing connection to incoming supply

1. Main switchboard/ distribution board: Connect to main incoming metering equipment.
2. Nature of connection: Liaise with the DNO to ensure the correct size, quantity and type of cable is provided for connection to their equipment.

630 Installing switchgear

1. Orientation: Accurate and square to vertical and horizontal axis. Align adjacent items of switchgear on the same horizontal axis.
2. Clearance in front of switchgear (minimum): 1 m.
3. Labelling: Permanently label each way, identifying circuit function, rating and cable size.

635 Installing cables directly in the ground

1. Cables: Lay on newly prepared bedding.
2. Cable bedding: 75 mm of sand.
3. Cable pulling: Prevent kinks and twisting of the cable.
4. Installation method: Submit proposals.
5. Cable formation within trench:
6. Cables below roads and hard-standings: Duct and derate if longer than 10 m. Extend ducts 1 m each side of hardstanding.
7. Cable marker tape:
8. Backfilling: 75 mm of sand over cables, then as-dug material.

640 Installing cables entering buildings from below ground

1. Pipeducts: Seal at both ends.
2. Proposals: Submit drawings.

665 Installing conduit in concrete

1. Fixing: Fix conduit securely to reinforcement. Fix boxes to formwork to prevent displacement.
2. Concrete cover to conduit (minimum):
3. Draw wires: Install to all conduit runs and confirm integrity immediately after the concrete pour.

670 Installing trunking/ ducting systems

1. Positioning: Accurate with respect to equipment served and parallel with other services, and where relevant, floor level and other building lines.
2. Access: Provide space encompassing cable trunking to permit access for installing and maintaining cables.
3. Jointing
   3.1. Number of joints: Minimize.
   3.2. Lengths of trunking/ ducting: Maximize.
   3.3. Steel systems: Mechanical couplings. Do not weld. Fit a copper link at each joint to ensure that satisfactory electrical continuity is maintained between the separate sections of trunking, equipment and accessories.
4. Movement: Fix securely. Restrain floor-mounted systems during screeding.
5. Junctions and changes of direction: Proprietary jointing units.
6. Cable entries: Fit grommets, bushes or liners.
7. Internal fire barriers: Provide to maintain integrity of fire compartment.
8. Protection: Fit temporary blanking plates. Prevent ingress of screed and other extraneous materials.
9. Service outlet units: Fit when cables are installed.

675 Partial installation

1. Equipment to be installed only: Only to the ground/first and third floor areas
2. Provide power supplies and final connections to the following equipment: TBC
3. Containment: Provide for the following: …….
   3.1. Draw cords: Required.
   3.2. Proposals: Submit.

680 Cable routes

1. Cables generally: Conceal wherever possible.
   1.1. Concealed cable runs to wall switches and outlets: Align vertically or horizontally with the accessory.
2. Exposed cable runs: Submit proposals.
   2.1. Orientation: Straight, vertical and/ or horizontal and parallel to walls.
3. Distance from other services running parallel: 150 mm minimum.
   3.1. Heating pipes: Position cables below.

685 Installing cables

1. General: Install cables neatly and securely. Protect against accidental damage, adverse environmental conditions, mechanical stress and deleterious substances.
2. Timing: Do not start internal cabling until building enclosure provides permanently dry conditions.
3. Jointing: At equipment and terminal fittings only.
4. Cables passing through walls: Sleeve with conduit bushed at both ends.
5. Cables surrounded or covered by thermal insulation: Derate accordingly.

690 Installing cables in plaster

1. Protection: Cover with galvanized steel channel nailed to substrate.

695 Installing cables in vertical trunking/ ducts

1. Support: Pin racks or cleats at each floor level or at 5 m vertical centres, whichever is less.
2. Heat barrier centres (maximum): 5 m.
3. Heat barriers: Required except where fire resisting barriers are not provided.

700 Installing cables in accessible roof spaces

1. Cables running across ceiling joists: Fix to timber battens which are secured to joists.

705 Installing armoured cable

1. Temperature: Do not start installation if cable or ambient temperature is below 0°C, or has been below 0°C during the previous 24 hours.
2. Galvanized steel guards: Fit where cables are vulnerable to mechanical damage.
3. Earthing: Bond armour to equipment and main earthing system.
4. Connections to apparatus: Moisture proof, sealed glands and shrouds.

710 Installing PVC-sheathed cable

1. Temperature: Do not install cables if ambient temperature is below 5°C.

715 Installing MICC cable

1. Bending: Do not corrugate sheath.
2. Sealing cable ends: Fit terminations as soon after cable installation as practicable. Temporarily seal open cable ends to prevent the ingress of moisture where terminations are not fitted immediately.
3. Connection to equipment and boxes: Fit shrouded glands.
4. Testing: Test each length immediately after fixing. Repeat test 24-48 hours later.

720 Installing electrical accessories and equipment

1. Location:
2. Arrangement: Coordinate with other wall- or ceiling-mounted equipment.
3. Positioning: Accurately and square to vertical and horizontal axes.
4. Alignment: Align adjacent accessories on the same vertical or horizontal axis.
5. Mounting:
6. Mounting heights (finished floor level to underside of equipment/ accessory):
7. Accessory face plates: Free from any traces of plaster, grout and paint or similar.

725 Final connections

1. Size: Determine.
2. Cable: Heat resisting white flex.
3. Length: Allow for equipment removal and maintenance.

730 Installing multigang switches

1. General: Connect switches so that there is a logical relationship with luminaire positions. Fit blanks to unused switch spaces.
2. Segregation: Internally segregate each phase with phase barriers and warning plates.

735 Installing luminaires

1. Location:

2. Orientation: Parallel with ceiling.
3. Supports: Adequate for weight of luminaire.

740 Installing emergency luminaires

1. Permanent electrical supplies: Derive from adjacent local lighting circuit.
2. Charge indicator: Position in a conspicuous location.

745 Installing external luminaires

1. Locations: Submit proposals.
2. Seals: Check for particle ingress and clean.

750 Installing lighting columns

1. Standard: To Highways England Specification for highway works Vol 1, series 1300, clauses 1305–1311.

755 Installing earth bars

1. Location: At incoming electrical service position.
2. Mounting: Wall-mounted on insulated supports.

760 Equipment labelling

1. Electrical equipment: Install labels indicating purpose.
2. Voltage warning notices
   2.1. Location: Apply to equipment in a position where it can be seen prior to gaining access to live parts when the voltage within exceeds 230 V.
   2.2. Format: To BS EN ISO 7010, functional reference number, W012, include warnings of the voltage present.
3. Distribution boards: Card circuit chart within a reusable clear plastic cover. Fit to the inside of each unit. Include typed information identifying the outgoing circuit references, their device rating, cable type, size, circuit location and details. Label each outgoing way corresponding to the circuit chart.
4. Sub-main cables: Label at both ends with circuit reference using proprietary cable marker sleeves.

765 Engraving

1. Metal and plastic accessories: Engrave, indicating their purpose.
2. Emergency lighting test key switches: Describe their function.
3. Multigang light switches: Describe the luminaire arrangement.

Completion

810 Final fix

1. Accessory faceplates, luminaires and other equipment: Fit after completion of building painting.

820 Cleaning

1. Electrical equipment: Clean immediately before handover.
2. Equipment not supplied but installed and electrically connected: Clean immediately before handover.

830 Inspection and testing generally

1. Standard: In accordance with BS 7671.
2. Notice before commencing tests (minimum): 24 hours.
3. Labels and signs: Fix securely before system is tested.
4. Certificates: Submit.
   4.1. Number of copies:

860 Inspection and testing of emergency lighting systems

1. Standard: In accordance with BS 5266-1.
2. Certificate of testing: Submit.
   2.1. Standard:
   2.2. Number of copies:
3. System log book: To BS 5266-1.

880 Documentation

1. Timing: Submit at practical completion.
2. Contents
   2.1. Full technical description of each system installed.
   2.2. Manufacturers' operating and maintenance instructions for fittings and apparatus including relamping instructions for luminaire types. Identify hazardous lamps that require specialist disposal.
   2.3. Recommended frequency of testing and inspection, both for electrical safety and for matters such as the corrosion and security of lighting columns and luminaire fixings.
   2.4. Manufacturers' guarantees and warranties.
   2.5. As-installed drawings showing circuits and their ratings and locations of fittings and apparatus.
   2.6. List of normal consumable items.

890 Maintenance

1. Servicing and maintenance: Undertake.
   1.1. Duration:

Ω End of Section

Z11
Purpose made metalwork

Clauses

31 Metal products

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

50 Preparation for application of coatings

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

51 Fabrication generally

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

52 Cold formed work

1. Profiles: Accurate, with straight arrises.

53 Welding and brazing generally

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

54 Welding of steel

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

56 Finishing welded and brazed joints visible in complete work

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

58 Galvanizing

1. Standard: To BS EN ISO 1461.
2. Vent and drain holes
   2.1. Location:
   2.2. Sealing after galvanizing: Required. Submit proposals.

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. Processor: Licensed by manufacturer of specified treatment solution.
   2.1. Operatives:
3. Certification: For each batch of timber provide a certificate of assurance that treatment has been carried out as specified.

120 Commodity specifications

1. Standard: In accordance with the Wood Protection Association (WPA) publication 'Industrial wood preservation specification and practice'.

130 Preservative treatment solution strengths/ treatment cycles

1. General: Select to achieve specified service life and to suit treatability of specified wood species.

140 Copper-organic preservative treatment

1. Solution
   1.1. Manufacturer:
      1.1.1. Product reference:
   1.2. Colour:
   1.3. Application: High-pressure impregnation.
2. Moisture content of wood
   2.1. At time of treatment: Not more than 28%.
   2.2. After treatment: Timber to be surface dry before using.

150 Water-based organic preservative treatment

1. Solution
   1.1. Manufacturer:
      1.1.1. Product reference:
   1.2. Application: High-pressure impregnation.
2. Moisture content of wood
   2.1. At time of treatment: Not more than 28%.
   2.2. After treatment: Timber to be surface dry before use.

160 Organic solvent preservative treatment

1. Solution
   1.1. Manufacturer:
      1.1.1. Product reference:
   1.2. Application: Double vacuum + low-pressure impregnation, or immersion.
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.

165 Water-based microemulsion preservative treatment

1. Solution
   1.1. Manufacturer:
      1.1.1. Product reference:
   1.2. Application: Double vacuum + low-pressure impregnation.
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.

167 Boron compound preservative treatment

1. Solution
   1.1. Manufacturer:
      1.1.1. Product reference:
   1.2. Application: High-pressure impregnation.
2. Moisture content of wood
   2.1. At time of treatment: Not more than 28%.
   2.2. After treatment: Timber to be surface dry before using.

180 Recycled treated timber

1. Usage:

210 Flame-retardant treatment

1. Standard: In accordance with the Wood Protection Association (WPA) publication 'Industrial flame retardant treatment of wood and wood-based panel products'.
2. Solution type:
   2.1. Manufacturer:
      2.1.1. Product reference:
   2.2. Application: Vacuum +-pressure impregnation.
3. Moisture content of wood
   3.1. At time of treatment:
   3.2. After treatment: Timber to be redried slowly at temperatures not exceeding 60°C to minimize distortion and degradation.

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

Z20
Fixings and adhesives

Clauses

10 Fixings and fasteners generally

1. Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support.
2. Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers or sleeves to avoid bimetallic corrosion.
3. General usage: To recommendations of fastener manufacturers and/ or manufacturers of components, products or materials fixed and fixed to.
4. Fixings: To be in straight lines, at regular centres.

25 Fastener durability

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

30 Fixings through finishes

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

35 Packings

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

40 Cramp fixings

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

50 Pelleted countersunk screw fixings

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

55 Plugged countersunk screw fixing

1. Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
2. Plugs: Glue in to full depth of hole.
3. Finished level of plugs: Projecting above surface.

60 Applying adhesives

1. Surfaces: Clean. Regularity and texture to suit bonding and gap filling characteristics of adhesive.
2. Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.
3. Finished adhesive joints: Fully bonded. Free of surplus adhesive.

Ω End of Section

Z22
Sealants

Clauses

31 Joints

1. Description: To gutters and fittings
2. Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.

Execution

61 Suitability of joints

1. Presealing checks
   1.1. Joint dimensions: Within limits specified for the sealant.
   1.2. Substrate quality: Surfaces regular, undamaged and stable.
2. Joints not fit to receive sealant: Down pipes where male and female sockets are made

62 Preparing joints

1. Surfaces to which sealant must adhere
   1.1. Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.
   1.2. Clean using materials and methods recommended by sealant manufacturer.
2. Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.
3. Backing strip and/ or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.
4. Protection: Keep joints clean and protect from damage until sealant is applied.

63 Applying sealants

1. Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.
2. Environmental conditions: Do not dry or raise temperature of joints by heating.
3. Sealant application: Fill joints completely and neatly, ensuring firm adhesion to substrates.
4. Sealant profiles
   4.1. Butt and lap joints: Slightly concave.
   4.2. Fillet joints: Flat or slightly convex.
5. Protection: Protect finished joints from contamination or damage until sealant has cured.

Ω End of Section

Specification created using NBS Chorus