63094-21

John Burke Associates

CMT

1-2 Bedford Square, London

External Work and Repairs

25-04-2023

Contents

C40
Cleaning masonry/ concrete

General/ preparation

142 Removal of fittings

1. Timing: Before commencement of cleaning work
2. Disturbance to surfaces: Minimize.
3. Items for disposal: None

160 Protection

1. Surfaces not designated for cleaning: Prevent damage, including marking and staining.
2. Openings: Prevent ingress of water, cleaning agents, and detritus.
   2.1. Vents and grilles: Seek instructions before sealing up.
3. Temporary mechanical fastenings
   3.1. In masonry: Locate in joints.
   3.2. In other surfaces: Seek instructions.
4. Additional protection:

175 Control and disposal of wash water and detritus

1. Disposal: Safely. Obtain approvals from relevant Authority.
2. Control of wash water: Collect and divert to prevent ingress and damage to building fabric and adjacent areas.
3. Above and below ground drainage systems: Keep free from detritus and maintain normal operation.

190 Cleaning generally

1. Timing:
2. Operatives: Appropriately trained and experienced for each type of cleaning work.
   2.1. Evidence of training: Submit on request.
3. Control of cleaning: Confine cleaning processes and materials to designated areas. Prevent wind drift.
4. Detritus: Remove regularly. Dispose of safely.
5. Monitoring
   5.1. Frequently check results of cleaning compared to approved trial samples. If results established by trials are not achieved, seek instructions.
   5.2. Works to be inspected and approved in accordance with the requirements of the local planning authority.
6. Modifications to cleaning methods and materials: Seek instructions.

215 Record of cleaning works

1. Written report: Record cleaning methods and procedures used for each type of surface and deposit.
   1.1. Content: Relevant attributes of cleaning methods used including:
      1.1.1. Equipment and settings.
      1.1.2. Dwell times.
      1.1.3. Number of applications.

1.1.4. Ambient temperatures.

2. Additional documentation:
3. Submission: At completion of cleaning works.

230 Trial samples

1. Trial sample reference:
   1.1. Surface:
   1.2. Location/ Size:
   1.3. Type of soiling:
   1.4. Cleaning methods:
2. Records: Maintain written records for each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

Products/ equipment

312 Surface biocides

1. Types: Registered by the Health and Safety Executive (HSE) and listed on the HSE website under non-agricultural pesticides.
2. Compatibility with surface: Free from staining or other harmful effects.

Application

412 Removal of loosely adhered deposits

1. Timing: Before commencement of other cleaning methods.
2. Surfaces: Prevent damage, including abrasion.

422 Biocide application

1. Preparation:
2. Surfaces: Prevent damage, including abrasion.
3. Biocide treatment: Appropriate solutions to kill growths and inhibit further growths.
   3.1. Dead growths: Remove.

462 Water sprayed cleaning (mounted nozzles)

1. Surfaces: Minimize water run-off. Prevent damage.
2. Adjustment of washing cycle and nozzle positions: Regularly to achieve optimum cleaning performance.

472 Pressurized water cleaning

1. Surfaces: Prevent damage, including abrasion.
2. Equipment settings (including nozzle type and distance from surface): Adjust regularly to achieve optimum cleaning performance for each surface.

482 Steam cleaning

1. Surfaces: Prevent damage, including abrasion.
2. Equipment settings (including nozzle type and distance from surface): Adjust regularly to achieve optimum cleaning performance for each surface.

495 Testing pH. values for chemical cleaning

1. pH indicator: To distinguish pH values between 1-14.
2. Testing before cleaning
   2.1. Clean rinsing water, wetted surfaces and joints: Test for pH. Record as 'control' values.
3. Testing after water rinsing and neutralization
   3.1. Wetted surfaces and joints: Record pH values.
   3.2. Acceptance criteria:

500 Chemical cleaning

1. Surfaces: Prevent damage, including discolouration, bleaching and efflorescence.
2. Product variables (including concentrations, dwell times and number of applications): Adjust for each surface to achieve optimum cleaning performance.
3. Application: To wetted surfaces.
   3.1. Drying out: Prevent unless recommended otherwise by cleaning product manufacturer.
4. Removal of chemicals and neutralization: As recommended by product manufacturer, including rinsing with clean water.
   4.1. Additional treatment: Where water rinsing is insufficient to neutralize surface, apply compatible neutralizing agent.
   4.2. Surfaces and joints: Minimize absorption of chemicals. Prevent damage, including abrasion.

515 Plain poulticing

1. Surfaces: Prevent damage, including abrasion.
2. Application: To wetted surfaces. Maintain contact with surfaces as poultice dries out.
3. Poultice reinforcement:
   3.1. Drying: Prevent excessively rapid or localized drying out.
4. Spent poultice material: Do not reuse.

Ω End of Section

C41
Repairing/ renovating/ conserving masonry

Generally/ preparation

110 Scope of work

1. Schedule: See Schedule of Works.
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
3. Timing: At least 7 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:
    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:
    1.3. Storage: Protect against damage, and store until required.
        1.3.1. Storage location:
    1.4. Reinstatement: Refit in original locations using original installation methods.
2. Items unsuitable or not required for reuse:
    2.1. Disposal:
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:
3. Documentation: Submit on completion of the work.
    3.1. Number of sets: Three

Workmanship generally

150 Power tools

1. Usage for removal of mortar: Small hand tools can be used in areas. Use of large power tools, inc angle grinders, are 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: WORKMANSHIP
   • Ensure that competent and trained masons carry out all work.
   BRITISH & European STANDARDS: comply with the following British and European Standards –
   BS EN 459 -1 (2015) Building Lime - Pt.1 Definitions, Specifications and Conformity Criteria.
   BS EN 771-6 - [Code of Practice for Stone Masonry - work on site].
   BS EN 5628-3 (2005) - Code of practice for use of Masonry.
   BS EN 8221-1 (2012) - Code of practice for cleaning and surface repair of buildings. Cleaning of natural stone, brick, terracotta and concrete.
   BS EN 16572 (2015) - Conservation of cultural heritage. Glossary of technical terms concerning mortars for masonry, renders and plasters used in cultural heritage.
   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: repointing.

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: Submit before placing orders.
   1.1. Designated materials: Sands for bedding and pointing
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 match existing
2. Supplier: Contractor to provide details of quarry.
3. Type: To match existing
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: To match existing

245 Replacement stone units

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

250 Stone orientation

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

265 Salvaged and second hand bricks

1. Source: London stock bricks. Bricks to match the size of those removed.
2. Condition
   2.1. Free from matter such as mortar, plaster, paint, bituminous materials and organic growths.
   2.2. Sound, clean and reasonably free from cracks and chipped arrises.

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.

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: See Schedule of Works
2. Stone: As existing
3. Mortar: As section Z21.
4. Joints: Recessed weathered
5. Other requirements: • Use of stone :
   In most cases natural stone should be used for surface repairs. Before starting work, the original stone should be identified, and enquiries should be made to find out if it is still quarried. If available, the
   quality should be checked. If the original stone is not available, a matched alterative should be chosen. It is important to match block size, but stone should primarily be matched on colour, texture, porosity,
   strength, and durability.
   Where a Substitute stone is used, differences between it and the original should be understood. The two stones should be petrographically compatible.
   Stones should be bedded in accordance with BS 5300. Generally, stones should be laid on their natural bed (edge or joint bedding can be used for projecting features and copings). Arch stones should
   be bedded at right angles to the thrust.
   • Full stone replacement :
   Defective stones should be carefully cut or sawn out, without overruns, to a depth sufficient to remove all decay and to give a good sealing for replacements.
   The minimum depth for replacement ashlar units should be 100 mm.
   NOTE - Greater bedding depths may be required for overhanging stones or where a stone is replaced to its full original depth.
   Cavities should be cleared of stone and mortar residues and rinsed with clean water.
   Replacement stones should match the size, profile and finish (surface tooling) of the original

un-weathered face and wall alignment, where these can be established.
Joints to the rear and sides of new ashlar blocks should be filled with mortar slurry of appropriate constituents and softness. The stone should be supported on shims to ensure the original joint widths are maintained. Supports should not impose excessive point loads on the stone. Joints surrounding new stone should be repointed to match the original pointing.
Stones should be secured within the original opening using stainless steel dowel fixings where necessary.
NOTE Replacement of larger stones (e.g. cornice units) may require more elaborate fixing procedures.
• Replacement of carved stone :
Carving of replacement stone should be carried out by a stone carver where appropriate. New pieces should match the features, size, nature, and quality of carving of the original work.
Installation of new
pieces should be undertaken by a mason experienced in fixing techniques.

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: • CUT BACK the section of existing decayed stone to a neat plane at a junction agreed with
   the CA, retaining the maximum original work and clean down surfaces. Provide temporary structural support as necessary during repair work.
   • INSERT stainless steel dowels into pre-drilled locating holes, minimum 25mm depth and set in epoxy resin to tie existing and new work together.
   • LOCATE new stone into existing stone and fix with a thin coating of epoxy resin, to finish well back from the stone face. Clean any resin spillage or seepage immediately from the stone face. Fill joint flush with stone dust mix to match colour of stone.
   • Piecing-in repairs :
   New stone for repair work may gradually tone in as it weathers, but is unlikely to appear exactly the same as the original stone, In the long term, the visual match achievable with new stone is usually better than with a mortar repair.
   Repair of local damage to large stones (e,g. damage caused by rusting cramps or fixings) may be carried out by piecing in matching stone.
   Townsend and Renaudon Draft Pavilion Gardens, Buxton,
   NOTE Piecing in repairs usually require a minimum depth related to the surface area and ranging between 50mm and 100mm. This may also vary depending on the stone, size and extent of the repair and the degree of decay.
   The damaged area should be cut out to a rectilinear surface shape of appropriate depth. The new piece of stone should fit the prepared cavity exactly with no joint between the edges of the repair within the block. No jointing material should be visible at the Interface of the stone with the stone indent. Natural stone indents should not cross over existing joints.
   The rear of stone indents may be secured to the main block with non-ferrous or stainless steel dowels. Epoxy resin should be used only to secure dowels, not to fill the side or rear faces of the repaired area. A fine-grained modification of repair mortar should be used.
   The finished face of the repair should exactly match the original masonry outline. The final profile or surface texture of the repair should be worked in situ to ensure this.
7. Joints: Very fine.
8. Other requirements:

405 Bonded dowels

1. Description:
2. Standard:
3. Dowels:
4. Adhesive:
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.

Tooling/ dressing stone in situ - Not Used

Mortar repairs

510 Preparation for mortar repairs

1. Repair area: Clean out cracks to remove debris, dust and dirt. Dampen recesses, as necessary, to control suction.
2. Precautions: Do not weaken masonry by removing excessive material. Do not damage adjacent masonry.
3. Top and vertical reveals of repair area: Undercut.

540 Applying mortar

1. Surfaces to receive mortar: Clean out cracks to remove debris, dust and dirt. Dampen recesses, as necessary, to control suction.
2. Applying coats: Press well into cracks so that they are fully filled. Ensure that mortar does not encroach upon exposed faces.
3. Finishing mortar coat: Form accurately to required planes/ profiles, and finish flush with adjacent masonry.
4. Protection: Protect completed repairs from adverse weather until mortar has set.
5. Other Requirements:: Exclude isolated hair line cracks (less than about 1.0 mm wide)

Crack repairs/ ties/ reinforcement

675 Stainless steel ribbed bar reinforcement Type A

1. Reinforcement system
    1.1. Manufacturer: Leviat
        1.1.1. Contact details
            1.1.1.1. Address: President Way
            President Park,
            Sheffield
            South Yorkshire
            S4 7UR
            1.1.1.2. Telephone: +44 (0) 114 275 5224
            1.1.1.3. Web: www.leviat.com
            1.1.1.4. Email: info.uk@leviat.com
        1.1.2. Product reference: HeliBar
    1.2. Diameter: 4mm for joints lees than 10mm, 6mm for joints of 10mm.
    1.3. Material:: Helical high grade stainless steel with a central core.

Grouting rubble filled cores - Not Used

Pointing/ repointing

810 Preparation for repointing A

1. Existing mortar: Working from top of wall downwards, remove mortar carefully, without damaging adjacent masonry or widening joints, to a minimum depth of 30 mm.
    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.
3. Inspect: Inspect the work with the CA and agree details of areas to be replaced or repaired, pointing style, method and appearance.
   Sound mortar, which is full in the joint and protecting the edges of the stones, is to be left. Where repointing is specified, this will be to match the weathering of the pointing in the general area, which will vary from flush in unexposed areas to deeply recessed in exposed areas.
4. Inappropriate Mortar: Where specified, carefully prise off hard modern mortar (whether flush or projecting) to behind the existing line of the wall face, avoiding damage to the adjacent stonework. The use of angle grinders for this purpose will not be permitted. Notify the CA if this reveals perished mortar beneath. If removal of mortar cannot be achieved without damage to stone arises, notify the CA for further instructions.

810 Raking Out B

1. Cut Out: Cut out loose and perished mortar with extreme care to avoid damage to adjacent masonry. Fine points between ashlar and dressed stones are to be cut out with a raking tool or hacksaw blade narrower than the joint; other joints are to be cut out by hand using fine tools or a plugging chisel. The use of angle grinders for this purpose will not be permitted.
2. Raked joints: Remove dust and debris.

815 Pointing Stonework Generally

1. Preparation of Joints: Carefully brush away loose mortar and Dampen joints, as necessary, to control suction.
2. Mortar: As Section Z21
    - Mix 1:2:5 NHL hydraulic sand with softer mercaston sand.
3. Manufacturer: Compliance with BS EN 459-1 (2015).
    - Sand source/ type: sharp/grit sand with softer Mercaston sand.

   Recessed back from weathered arrises to retain original joint widths. Excess fines should be removed from the mortar face after initial stiffening using a stick orcoarse sacking. (Alternatively, the face should be stippled or brushed with a natural bristle brush) as clause 860.

4. Other Requirements: TBC

821 Shallow Pointing

1. Description: Shallow Pointing
2. Preparation of joints: Rake out existing mortar to a depth twice their width (for flush pointing) or correspondingly deeper where the pointing is to finish recessed.
3. Mortar: As section Z21. Point up in a single application of repointing mix. Townsend and Renaudon Draft Pavilion Gardens, Buxton,

822 Deep Pointing

1. Description: Deep Pointing

2. Preparation of joints: Where existing mortar is perished or eroded back further than 50-60 mm from the wall face, rake back to sound mortar (subject to a maximum depth of 100-125mm), clean out the joint.
3. Mortar: tamp in general mortar (clause Z21.M180 Mix 1). Force and compress mortar to the back of the joint, to finish 20mm back from the pointing face. (Note: where joints open out within wall to large voids, grouting will be necessary - see section C4OJ). When general mortar has set, point up in a single application of repointing mix.

823 Repointing General

1. Description: Repointing General
2. Preparation of joints: Where existing mortar is perished or eroded back further than 50-60 mm from the wall face,
rake back to sound mortar (subject to a maximum depth of 100-125mm), clean out the joint
3. Mortar: tamp in general mortar (clause Z21.M180 Mix 1). Force and compress mortar to the back of the joint, to finish 20mm back from the pointing face. (Note: where joints open out within wall to large voids, grouting will be necessary - see section C4OJ). When general mortar has set, point up in a single application of repointing mix.

824 Repointing (Fine Joints)

1. Description: Repointing Fine Joints
2. Other requirements: Where stone joints are very narrow it may be necessary to screen the mortar aggregates to
remove the coarser material. It will also be necessary to protect the adjoining stonework from discolouration from mortar spreading out beyond the sides of the joint. This may be done by:
(a) Taping over the edges of the adjoining stones beforehand; or
(b) Applying a brush-applied latex over the edges of the adjoining stones, which
can be peeled off afterwards with no resulting damage: or
(c) Any other method, subject to approval by the CA.

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. Pointing Finish: At an appropriate stage of setting, either spray the face of the pointing or brush with a bristle brush to expose the aggregate. Leave the surface with a rough or stippled finish, free of brush marks. Clean any 'run off' or mortar from the surrounding stone immediately.

861 Protection

1. Description:: Protect all adjacent surfaces from spillage or materials or damage during cutting out. Do not point in frosty weather or when frost is anticipated during the first 48 hours of setting. Protect from rain during initial setting and protect from excessively fast drying out in hot weather by shading from the sun and/or draping with wet sacking.

Ω End of Section

C51
Repairing/ renovating/ conserving timber

General

110 Inspection

1. Purpose: To confirm nature and extent of repair/ renovation/ conservation work shown on drawings, and described in survey reports and schedules of work.
2. Parties involved:
3. Timing:
4. Instructions issued during inspection:

130 Opening up

1. Purpose: To reveal previously concealed areas of structure or fabric not recorded during initial surveys.
2. Extent:
3. Timing: Give notice before starting opening up.
   3.1. Period of notice:
4. Retained building structure/ fabric: Do not damage or destabilize.

150 Timber procurement

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

160 Timber supplier

1. Supplier: Submit proposals
2. Dimensional Stability : Timber for the repairs is to be radially or quarter sawn to maximize dimensional stability.

Structural repairs/ alterations

221 Timber Section Repair-Resin Repair System

1. • 2 pack epoxy resin system. Contractors choice. Approved
   • Preparation: ensure all decayed timber is cut out to sound timbers
   • Application: Install in strict accordance with manufacturers printed instructions
   • Surface finish: sand to provide a smooth, un pitted surface flush with adjacent wood
   • Sundries: Provide any supporting framework required etc.

222 Timber Section Repair-New Timber Repair

1. Defective timber: Where decayed timber is to be removed to form a splice repair, the minimum amount of existing timber should be removed to allow an effective repair to be formed.
   • Adhesive: Phenol Resorcinol Formaldehyde / Resorcinol Formaldehyde / Phenol Formaldehyde / Epoxy Resin - refer to clause C51.541 below.
   • Brass Screws with pelleted
   • Reinforcement where necessary:
   - Type: Stainless steel dowels.
   - Number/ size: TBA.
   • Replacement timber: PROVISIONAL - European Redwood, or choose from https://scottjameswindows.co.uk/blog/common-timbers-for-windows/
   - Sectional profiles of mating surfaces: To match cut ends of existing timber. NOTE - the timber is to be slow grown with growth rings not exceeding 1.5mm .
   Always work new material to the line of the existing and avoid unnecessary trimming of the original timber. Repairs should be follow any existing deformations in the line of the window.
   • Avoid mixing timber species between new and existing in a repair as the join between the two is likely to fail from different rates of expansion and contraction during dry and damp conditions.
   • When carrying out a repair, try to ensure that the structural integrity of the window is maintained and that the window continues to work as it was designed to do.
   • Where possible, spliced repairs should be designed to ensure that moisture is directed towards the outer face of the timber and that moisture does not lay on the repair join. The length of the splice is governed by the section of timber and the nature of component to ensure an effective bond between the new and existing section of timber.
   • Wherever possible, splice repairs should be formed which include mechanical fixings (e.g. Timber pegs/dowels or non-ferrous screws/pins) as well as adhesive. Screw of pin fixings should ideally be made from the inner face of the window.
   • Well-seasoned timber should be used in forming a repair with the line and density of the grain of the new timber matching the existing as closely as possible. As with all joinery work, timber with shakes, fissures, warping, sapwood or numerous/large knots be avoided for use in repair.
   • Avoid previous design faults when carrying out repairs. Consider modifying a method of construction or previous repair where it is liable to led to further decay.
   • If possible, repair to window frames should be formed in-situ especially where the frame is built-in and cannot be removed without damaging either the window or surrounding wall. In general, casements/sashes can be easily removed without damage to be repaired on site or in a joiner's workshop.
   • Where windows are to be dismantled as part of the repair process, always mark and record the constituent parts before dismantling. Similarly, always number glass panes/quarries before removal.
   Glass replacement. Where possible reuse existing original or 1920 replacement glass. Nonoriginal, broken or poor quality units (such as obscured glass to be replaced. Refer to L40. Allow 50% replacement of glass that is not identified as broken,

223 New Hardwood Timber Replacement

1. • Where new timber elements are required in whole, such as window bays or casements then this clause should be utilised.
   Defective timber elements: Removed, but retained to provide template/profile information. Recycled once used.
   • Size: match existing
   • Profile: match existing unless shown otherwise
   • Appearance Class: A1
   • Adhesive: refer to clause 545
   • Fixings and Ironmongery: Stainless steel or non-ferrous
   -The use of corrosion-proof steel fastenings that conform to EN 10088-1 is recommended such as A2, A4 quality stainless steel.
   • Glass replacement. Where possible reuse existing original or 1920 replacement glass. Nonoriginal, broken or poor quality units (such as obscured glass to be replaced. Refer to L40.

Allow 50% replacement of glass that is not identified as broken,
• Glazing Sealant:
Option 1: A comparability test would be required before proceeding - Repair-Care - Dry-Seal MP

250 Timber section repairs – external splice

1. Defective timber: Cut out to clean, regular profile.
2. Replacement timber: Softwood to match existing
3. Fixing to existing timber: Regular coach screws, 75 each side of joint, 225mm spacings

Products

360 Softwood for joinery repairs

1. Description:
2. Species: Submit proposals
3. Quality: Generally to BS EN 942; free from decay and insect attack (except pinhole borers).
   3.1. Appearance class: Class J10 or better for frames, main members and the like..
   3.2. Appearance class: Class J5 for intermediate sized sections (c50x25mm).
   3.3. Appearance class: Class J2 for beads, drip moulding and the like.
4. Treatment: As G20
5. Manufacturer:: https://www.brookridgetimber.co.uk/wp-content/uploads/2018/10/BS-EN-9422.pdf

470 Nails

1. Description:
2. Standard: As section Z20.
3. Type:
4. Material: Steel.
   4.1. Strength (minimum):
5. Finish as delivered:

480 Screws

1. Description:
2. Standard: As section Z20.
3. Material:
4. Tensile strength (minimum):
5. Finish as delivered:

490 Coach screws

1. Description:
2. Standard:
3. Material:
4. Tensile strength (minimum): 550 N/mm².
5. Finish as delivered:

541 Adhesive Timber Repairs

1. Type: Phenol Resorcinol Formaldehyde / Resorcinol Formaldehyde / Phenol Formaldehyde /Epoxy Resin.

2. Manufacturer: Refer to TRADA adhesives suppliers .
   2.1. Product reference: Contractor to confirm adhesives selection.

545 Adhesive for Hardwood

1. Type: polyurethane (PU), emulsion polymer isocyanate (EPI), epoxy and phenol resorcinol formaldehyde (PRF) adhesives - seek approval before proceeding.
2. Manufacturer: Refer to Accoya for Approved Supplier.
   2.1. Product reference: Insure computability with Resin Repair System and Hardwood Timber Repair Adhesive.

Execution

600 Workmanship

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

610 Temporary supports/ propping

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

620 Protection of timber and wood components before and during installation

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

630 Material samples

1. Representative samples of designated materials: Submit before placing orders.
   1.1. Designated materials:

650 Dimensions generally

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

660 Cross section dimensions of structural softwood and hardwood

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

665 Cross section dimensions of non-structural softwood

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

670 Cross section dimensions of non-structural hardwood

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

680 Warping of timber

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

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

700 Wood components – as delivered finish

1. Components to be painted:
2. Components to be clear finished:

710 Reuse of timber sections/ wood components

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

720 Temporary removal and reinstatement of fittings/ fixtures

1. Items to be removed, and reinstated on completion of repair work
    1.1. Identification: Attach labels or otherwise mark items using durable, non-permanent means, to identify location and refixing instructions, where applicable.
    1.2. Treatment following removal:
    1.3. Storage: Protect against damage, and store until required.
        1.3.1. Storage location:
    1.4. Reinstatement: Refit in original locations using original installation methods.
2. Items unsuitable or not required for reuse: Obtain instructions regarding disposal.

730 Partial removal of existing decorative/ protective finish

1. Description:
2. Extent: Remove minimum necessary to expose damaged or decayed wood. Feather the edge of remaining coating around repair site.
3. Method:

740 Removal of existing decorative/ protective finish

1. Description:

2. Extent: Remove completely back to bare wood.
3. Method:

750 Cleaning dirty or stained wood

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

760 Repair of members – cutting out members

1. Refer to SPAB Guidance: Technical Pamphlet 13-The Repair of Wood Windows 1998.
2. Extent of timber removal: Cut out full cross section of member where wood is defective or decayed, plus 50 mm of sound wood.
3. Distance from face of support to cut end of existing timber: Obtain instructions if dimension exceeds maximum shown on drawing.
4. Joint profile: As drawings

770 Repair of compression members – piecing in

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

780 Repair of distorted timber members

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

790 Pegs for mortise and tenon joints in structural timber

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

800 Condition of dowels to be bonded into timber

1. Condition at time of installation
    1.1. Dowels generally: Free from corrosive pitting, loose mill scale, loose rust and contaminants that may adversely affect dowels, adhesive, or bond between the two.
    1.2. Carbon steel dowels: As above, and free from corrosive pitting, loose mill scale and loose rust.

810 Bolted joints with connectors

1. Connector location: Where not otherwise shown, spacings, end and edge distances are to be not less than Standard values to BS EN 1995-1-1, section 8.9 for split ring and shear plate connectors, and BS EN 1995-1-1, section 8.10 for toothed plate connectors.
2. Centres of bolt holes: Not more than 2 mm from positions shown on drawings.
3. Assembly: Do not crush timber, deform washers or overstress bolts.

830 Critical dimensions for fasteners

1. Critical dimensions:

840 Fixing framing anchors and cleats

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

850 Glued joints

1. Adhesive:
   1.1. Compatibility: Where relevant, obtain manufacturer's confirmation that adhesive is compatible with preservative/ fire-retardant treatment.
2. Glued structural components: Fabricated to BS 6446 in clean, controlled workshop conditions.
3. Anticipated equilibrium moisture content of timber in service: Within 5% and differing from each other by no more than 3%.

860 Moisture content checking

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

870 Moisture content testing

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

Completion

910 Mechanicallyfastened joints

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

920 Dating timbers used in structural repairs

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

Ω End of Section

G20
Carpentry/ timber-framing/ first fixing

General

105 Timber procurement

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

160 Grading and marking of softwood

1. Timber of a target/ finished thickness less than 100 mm and not specified for wet exposure: Graded at an average moisture content not exceeding 20% with no reading being in excess of 24% and clearly marked as 'DG' (dry-graded).
2. Timber wet-graded and specified for installation at higher moisture contents: graded at an average moisture content above 20% and unmarked.
3. Structural timber members cut from large graded sections: Regraded to approval and marked accordingly.

Products - Not Used

Workmanship generally

402 Cross section dimensions of non-structural softwood

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

403 Cross section dimensions of non-structural hardwood

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

420 Warping of timber

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

430 Selection and use of timber

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

435 Notches, holes and joints in timber

1. Notches and holes
    1.1. General: Avoid if possible.
    1.2. Sizes: Minimum needed to accommodate services.
    1.3. Position: Do not locate near knots or other defects.
    1.4. In same joist: Minimum of 100 mm apart horizontally.
    1.5. Notches in joists
        1.5.1. Position: Locate at top. Form by sawing down to a drilled hole.
        1.5.2. Depth (maximum): 0.15 x joist depth.
        1.5.3. Distance from supports: Between 0.1 and 0.2 x span.
    1.6. Holes in joists
        1.6.1. Position: Locate on neutral axis.
        1.6.2. Diameter (maximum): 0.25 x joist depth.
        1.6.3. Centres (minimum): Three x diameter of largest hole.
        1.6.4. Distance from supports: Between 0.25 and 0.4 of span.
    1.7. Notches in roof rafters, struts and truss members: Not permitted.
    1.8. Holes in struts and columns: Locate on neutral axis.
        1.8.1. Diameter (maximum): 0.25 x minimum width of member.
        1.8.2. Centres (minimum): Three x diameter of largest hole.
        1.8.3. Distance from ends: Between 0.25 and 0.4 of span.
2. Scarf joints, finger joints and splice plates: Do not use without approval.

440 Processing treated timber

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

450 Moisture content

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

451 Moisture content testing

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

510 Protection

1. Generally: Keep timber dry and do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing.
2. Timber and components: Store under cover, clear of the ground and with good ventilation. Support on regularly spaced, level bearers on a dry, firm base. Open pile to ensure free movement of air through the stack.
3. Trussed rafters: Keep vertical during handling and storage.

520 Exposed end grain protection

1. Components: Seal exposed end grain of the following before delivery to site: softwood.
2. Sealer: An extra coat of primer

530 Painted finishes

1. Structural timber to be painted: Primed as specified before delivery to site.

540 Clear finishes

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

550 Exposed timber

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

Jointing timber

570 Jointing/ fixing generally

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

615 Bolt/ screw assemblies

1. Description:
2. Designation:
3. Size:
4. Coating applied by manufacturer:
5. Nuts and washers: Material grade and finish to suit bolts.
6. Washer dimensions: Diameter/ side length of washers in contact with timber faces to be a minimum of three times bolt diameter, with a thickness of not less than 0.3 times bolt diameter.

650 Glued joints

1. Adhesive:
    1.1. Compatibility: Where relevant, obtain manufacturer's confirmation that adhesive is compatible with preservative/ flame-retardant treatment.
2. Glued structural components: Fabricated to BS 6446 in clean, controlled workshop conditions.
3. Anticipated equilibrium moisture content of timber in service:

Erection and installation

750 Modifications/ Repairs

1. Defects due to detailing or fabrication errors: Report without delay.

2. Methods of rectification: Obtain approval of proposals before starting modification or remedial work.
3. Defective/damaged components: Timber members/ components may be rejected if the nature and/or number of defects would result in an excessive amount of site repair.

950 Fascias/ barges/ soffits

1. Description:
2. Manufacturer: Contractor's choice
   2.1. Product reference: Contractor's choice
3. Material: Veneered plywood
4. Finish: As existing
5. Colour: As existing
6. Nominal depth: As existing
7. Edge profile: As existing

Ω End of Section

H62
Natural slating

To be read with preliminaries/ general conditions.

20 Removing existing slating

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

35 Slate fixing

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

40 Mortar bedding/ Pointing

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

Ω End of Section

J31
Liquid-applied waterproof roof coatings

Types of coating

120 Liquid-applied warm roof covering systems Type A

1. Manufacturer: IKO PLC
2. Contact details
   2.1. Address: Appley Lane North
   Appley Bridge
   Wigan
   Lancashire
   WN6 9AB
   2.2. Telephone: +44 (0)1257 255 771
   2.3. Web: www.ikogroup.co.uk
   2.4. Email: technical.uk@iko.com
3. Product reference: Single-Component Cold Applied Liquid System for Flat and Pitched Roofs - IKO Tanetech R EC/UV (IKO tanetech R-EC)
4. Carrier membrane
5. Liquid-applied waterproofing
   5.1. Type: IKO Tanetech R-EC.
   5.2. Reinforcement: IKO Glass Fleece 225.
6. Colour: Dark grey.
7. Basecoat: IKO tanetech R-EC.
8. Density: +/- 1,4 g/cm³.
9. Water vapour resistance: 3.939.
10. Storage: 12 months in the hermetically sealed packaging, when stored in a dry, cool and frost-free place.
11. Third-party certification: ETA-13/0168 according to ETAG 005; BROOF(t1) & BROOF(t4) according to EN13501-5; Production ISO 9001 & 14001.
12. Flashings:: IKO Flash as per manufacturers instructions and skirting detail.

Performance

210 Roof performance

1. General: Firmly adhered, free-draining and weathertight.

225 Avoidance of interstitial condensation

1. Risk of interstitial condensation in roof construction: Assess in accordance with BS 5250.

230 Thermal performance

1. Requirement: Determine type and thickness of insulation and integral or separate overlay to satisfy the following criteria:
   1.1. Thermal transmittance of roof (maximum):
   1.2. Compressive strength of insulation (minimum) at 10% compression:
   1.3. Substrate surface: Suitably even, stable and robust to receive roof coatings.
   1.4. Insulation compliance: To a relevant European Standard, or Agrément-certified.

Products - Not Used

Execution generally

410 Adverse weather

1. Do not apply coatings
   1.1. In wet conditions or at temperatures below 5°C, unless otherwise permitted by coating manufacturer.
   1.2. In high winds (speeds > 7 m/s), unless adequate temporary windbreaks are erected adjacent to working area.
2. Unfinished areas of roof: Keep dry.

420 Suitability of substrates

1. Substrates generally
   1.1. Secure, clean, dry, smooth, free from frost, contaminants, loose material, voids, protrusions and organic growths.
   1.2. Compatible with coating system.
2. Preliminary work: Complete, including:
   2.1. Formation of upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
   2.2. Fixing of battens, fillets and anchoring plugs/ strips.
3. Moisture content and stability: Must not impair integrity of roof.

Existing substrates

510 Removing existing coverings

1. Mechanical stripping: Permitted
2. Exposed substrate: Do not damage.

515 Existing flashings

1. General: Raise to facilitate cleaning of surfaces to receive coatings.
2. Timing: Leave raised during coating application and lower only after full curing.
3. Damaged lengths: Replace with new, specified in section: …….

New substrates/ vapour control layers/ warm deck roof insulation - Not Used

Roof coating system

710 Adhesion tests

1. Requirement: Carry out a trial coating to determine priming requirements and/ or system suitability.
2. Nature of test:
3. Test results: Submit and arrange for inspection.

720 Applying primers/ conditioners

1. Coverage per coat (minimum):
2. Surface coverage: Brushed well in to ensure local or full area coverage according to type.
3. Coats: Allow to dry before overcoating.

760 Application of roof coatings

1. Thickness: Monitor by taking wet/ dry film thickness readings.
2. Continuity: Maintain full thickness of coatings around angles, junctions and features.
3. Rainwater outlets: Form with watertight joints.
4. Drainage systems: Do not allow liquid coatings to enter piped rainwater or foul systems.
5. Edge trims: Apply coatings over horizontal leg of trim and into recess.

770 Skirtings and upstands

1. Top edges of coatings: As per IKO instructions
2. Completion of chases: When coatings are fully cured, prepare chase and apply sealant as section Z22.
    2.1. Sealant: To BS EN ISO 11600
        2.1.1. Colour: As coating

Surfacing

860 Laying paving tiles

1. Condition of substrate: Clean.
2. Setting out: Minimize cutting.
3. Joints: Open.
    3.1. Width: 3 mm
4. Completion: Tiles must be level and stable.

Completion

910 Inspection

1. Coating surfaces: Check when cured for discontinuities.
    1.1. Defective areas: Apply another coating.

930 Flood test

1. Condition of roof prior to testing
    1.1. Coating: Complete to a stage where integrity can be tested.
    1.2. Surface: Clean.
2. Outlets: Externally cover and seal. Protect against damage from water pressure using temporary kerbs. Do not use plugs to seal outlets.
3. Flood levels: Submit proposals. In no case higher than existing kerbs.
4. Flood duration:
5. Inspection: Regular to detect leaks.
6. Completion of test: Slowly drain roof. Do not overload or flood outlets.
7. Test results: Submit.

940 Completion

1. Roof areas: Clean.
    1.1. Outlets: Clear.
    1.2. Flashings: Dressed into place.
2. Work necessary to provide a weathertight finish: Complete.

3. Storage of materials on finished surface: Not permitted.
4. Completed coatings: Protect against damage.

Ω End of Section

J42
Single-layer polymeric sheet roof coverings

To be read with preliminaries/ general conditions.

10 Single layer sheet warm roof covering systems Type A

1. Roof covering system
   - 1.1. Manufacturer: IKO PLC
     - 1.1.1. Contact details
       - 1.1.1.1. Address: Appley Lane North
         Appley Bridge
         Wigan
         Lancashire
         WN6 9AB
       - 1.1.1.2. Telephone: +44 (0)1257 255 771
       - 1.1.1.3. Web: www.ikogroup.co.uk
       - 1.1.1.4. Email: technical.uk@iko.com
     - 1.1.2. Product reference: Ballasted Single Ply Roofing System - IKO Armourplan P - 20/25 Year Guarantee
   - 1.2. Air and vapour control layer
     - 1.2.1. Type: IKO Spectravap PE AVCL.
     - 1.2.2. Attachment: Loose laid with 150 mm side and end laps taped with Spectravap jointing tape.
   - 1.3. Insulation
     - 1.3.1. Type:
     - 1.3.2. Attachment: Loose laid.
   - 1.4. Separating layer:
   - 1.5. Waterproof covering
     - 1.5.1. Type:
     - 1.5.2. Attachment: Loose laid and secured at perimeters, penetrations and changes of angle with IKO Toothed Flatbar.
     - 1.5.3. Joints: Hot Air Welded.
   - 1.6. Upper protection layer: Spectratex 300 gsm fleece protection layer.
   - 1.7. Surface protection: 40 mm paving slabs on proprietary support pads.
   - 1.8. Weight: To EN 1849-2, 1700 g/m².
   - 1.9. TensileStrength: To EN 12311-2, ≥ 1500 N/50 mm.
   - 1.10. Elongation at break: To EN 12311-2, ≥ 15%.
   - 1.11. Tear resistance: To EN 12310-2, ≥ 150 N.
   - 1.12. ShearStrength: To EN 12317-2, ≥ 1200 N.
   - 1.13. Impact resistance: To EN 12691, ≥ 1100 mm soft; to EN 12691, ≥450 mm hard.
   - 1.14. Static load resistance: To EN 12730, ≥ 20 kg.
   - 1.15. Dimensional stability: To EN 1107-2, ≤ 0.5%.
   - 1.16. Flexibility at low temperature: To EN 495-5, ≤ -30°C.

15 Roofing generally

1. Surfaces to be covered: Secure, clean, dry, smooth, free from frost, contaminants, voids and protrusions.

2. Preliminary work: Complete, including:
   2.1. Grading to correct falls.
   2.2. Formation of upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
   2.3. Fixing of battens, fillets and anchoring plugs/ strips.
3. Moisture content and stability of substrate: Must not impair integrity of roof.
4. Adverse weather: Do not lay membrane at temperatures below 5°C in high winds, wet or damp conditions, unless effective temporary cover is provided over working area.
5. Unfinished areas of roof: Keep dry and protect edges of laid membrane from wind action.
6. Completed coverings: Firmly attached, fully sealed, smooth, weatherproof and free-draining.

Ω End of Section

L10
Windows/ rooflights/ screens/ louvres

General

110 Evidence of performance

1. Certification: Provide independently certified evidence that all incorporated components comply with specified performance requirements.

115 Timber procurement

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

120 Pre-construction survey

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

140 Control samples

1. Procedure
   1.1. Finalize component details.
   1.2. Fabricate one of each of the following designated items as part of the quantity required for the project.
   1.3. Obtain approval of appearance and quality before proceeding with manufacturer of the remaining quantity.
2. Designated items:

Products

250 Replacement Sash Windows

1. Standard: Non-fire-rated window to BS EN 14351-1 and BS 644
2. Manufacturer: Submit proposals
3. Operation and strength characteristics: To BS 6375-2.
4. Timber: Generally to BS EN 942.

4.1. Species:

5. Appearance class: J10 for glazing beads, drip mouldings, etc. J40 or better for all other members.
6. Moisture content on delivery: 12-19%.
7. Preservative treatment: Organic solvent as section Z12 and WPA Commodity Specification C5; Desired service life 30 years
8. Finish as delivered: Prepared and primed as section M60
9. Thermal performance (U-value maximum): 1.4 W/m²K
10. Glazing details: Double glazed
11. Beading: As existing
12. Ironmongery/ accessories: As existing
13. Fixing: Screwed to timber framing

420 Wood subframes

1. Timber: To BS EN 942.
   1.1. Species: Softwood as Table NA.1
   1.2. Appearance Class: Manufacturer's standard
   1.3. Moisture content on delivery: 12-19%.
2. Assembly adhesive: Thermosetting resin to BS EN 12765, Class C4
3. Joinery workmanship: As section Z10.
4. Preservative treatment: Organic Solvent as section Z12 and WPA Commodity Specification C5; Desired service life 30 years

460 Framed rooflights R6

1. Manufacturer: VELUX Company Ltd
   1.1. Contact details
      1.1.1. Address: Woodside Way
      Glenrothes
      Fife
      KY7 4ND
      1.1.2. Telephone: +44 (0)1592 778225
      1.1.3. Web: www.velux.co.uk
      1.1.4. Email: sales@velux.co.uk
   1.2. Product reference: Fixed Heritage Conservation Window
2. Type: Rectangular
3. Frame: Manufacturer's standard
   3.1. Finish: As existing
   3.2. Colour: As existing
4. Thermal performance (U-value maximum): 1.4 W/m²K
5. Fire performance
   5.1. Fire resistance: BS EN 13501-5, Class Broof(t4)
   5.2. Reaction to fire: Manufacturer's standard
6. Glazing details: RE30

480 Wood frame roof window units R5

1. Manufacturer: VELUX Company Ltd
   1.1. Contact details

1.1.1. Address: Woodside Way
Glenrothes
Fife
KY7 4ND

1.1.2. Telephone: +44 (0)1592 778225

1.1.3. Web: www.velux.co.uk

1.1.4. Email: sales@velux.co.uk

1.2. Product reference: VFA/VFB Side-Hung Additional Vertical Element

2. Product performance

2.1. Whole window U-value: 1.0–1.3 W/m²K.

3. Glazing or infill

3.1. Composition: Argon filled cavity.

4. Operation

4.1. Type: Operation is via a handle positioned on the bottom of the sash. The VFA is hinged on the left (when viewed from inside) and the VFA is hinged on the right (when viewed from inside) meaning they are suitable for emergency escape.

5. Accessories:

6. Execution: Fixing of wood frames.

7. Internal frame and sash: White painted.

8. External cladding: Grey aluminium; colour reference NCS S-7500-N.

9. Frame: Manufacturer's standard

9.1. Finish: As existing

10. Fire performance (minimum): Broof(t4) when classified to BS EN 13501-5

11. Glazing details: RE30

Execution

710 Protection of components

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

2. Stored components: Stack vertical or near vertical on level bearers, separated with spacers to prevent damage by and to projecting ironmongery, beads, etc.

730 Priming/ sealing

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

750 Building in

1. General: Not permitted unless indicated on drawings.

1.1. Brace and protect components to prevent distortion and damage during construction of adjacent structure.

765 Window installation generally

1. Installation: Into prepared openings.

2. Gap between frame edge and surrounding construction

2.1. Minimum: 3mm

2.2. Maximum: 10mm

3. Distortion: Install windows without twist or diagonal racking.

4. Sealed:: Fully sealed and mastic applied externally.

780 Fixing of wood frames

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

820 Ironmongery

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

Ω End of Section

L20
Doors/ shutters/ hatches

To be read with preliminaries/ general conditions.

10 Timber procurement

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

30 Wood doors

1. Description:
2. Materials: Generally to BS EN 942.
   2.1. Species: Softwood as Table NA1
   2.2. Appearance Class: J10
3. Panels: Not applicable
4. Assembly
   4.1. Adhesive: Thermosetting resin to BS EN 12765, Class C4
   4.2. Joinery workmanship: As section Z10.
   4.3. Accuracy: To BS 4787-1.
5. Preservative treatment: Organic solvent as section Z12 and WPA Commodity Specification C5; desired service life: 30 years
6. Moisture content on delivery: 13-19%
7. Finish as delivered: Prepared and primed, as section M60
8. Glazing/ infill details: Not applicable
9. Thermal performance (U-value maximum): 1.8 W/m²K

52 Wood door frames

1. Description: See Schedule of Works
2. Materials: Generally to BS EN 942.
   2.1. Species: Softwood
   2.2. Appearance Class: As existing
3. Assembly
   3.1. Adhesive: Thermosetting resin to BS EN 12765, Class C4
   3.2. Joinery workmanship: As section Z10
4. Preservative treatment: Organic solvent as section Z12 and WPA Commodity Specification C5; desired service life: 30 years

5. Moisture content on delivery: 13-19%
6. Finish as delivered: Prepared and primed, as section M60
7. Perimeter seals: Not required
8. Fixing: Plugged and screwed, as section Z20
   8.1. Spacing of fixings (frames not predrilled): Maximum 150 mm from ends of each jamb, adjacent to each hanging point and at 600 mm maximum centres.

80 Sealant joints

1. Sealant
   1.1. Manufacturer: Submit proposals
      1.1.1. Product reference: Submit proposals
   1.2. Colour: As existing
   1.3. Application: As section Z22 to prepared joints. Triangular fillets finished to a flat or slightly convex profile.

85 Fixing ironmongery generally

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

Ω End of Section

L40
General glazing

General requirements

50 Normative References

1. Comply with the following:: • BS 952-1:1995 - Glass for glazing. Classification
   • BS 6262-1:2005 - Glazing for buildings. General methodology for the selection of glazing
   • BS 6262-3:2005 Glazing for buildings. Code of practice for fire, security and wind loading.
   • BS 6262-4:2005 Glazing for buildings. Code of practice for safety related to human impact.
   • BS 6262-6:2005 Glazing for buildings. Code of practice for special applications.
   • BS 6262-7:2005 Glazing for buildings. Code of practice for the provision of information.
   • BS 8000-7: 1990 Workmanship on building sites - CoP Glazing.

111 Pre-glazing

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

130 Removal of glass/ plastics for reuse

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

140 Material samples

1. Representative samples of designated materials: Submit before cutting panes.
   1.1. Sample size (minimum): 150 x 150 mm

150 Workmanship and positioning generally

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

151 Preparation

1. Surrounds, rebates, grooves and beads: Cleaned and prepared by others.

152 Preparation

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

155 Glass generally

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

180 Bead-fixing with pins

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

181 Bead-fixing with screws

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

Types of glazing

210 Putty-fronted single-glazing

1. Description: Replacement Glazing to Timber Windows and Doors
2. Pane material: 4.5mm Toughened goethe-Machine-Drawn-Glass
3. Surround: Existing, Refurbished and New timber window surrounds
4. Type of putty: Refer to clauses 400A & 400B .
5. Glass installation
   5.1. Glass: Located centrally in surround using setting and location blocks, and secured with glazing sprigs/ cleats/ clips at 300 mm centres.
   5.2. Finished thickness of back bedding after inserting glazing (minimum): 1.5 mm.
   5.3. Front putty: Finished to a smooth, neat triangular profile stopping 2 mm short of sight line. Surface lightly brushed to seal putty to glass and left smooth with no brush marks.
6. Sealing putty: Seal as soon as sufficiently hard but not within 7 days of glazing. Within 28 days apply either:
   6.1. Painting: Refer to M60 for paint finish.
7. Opening lights: Keep in closed position until putty has set sufficiently to prevent displacement of glazing when opened.

400 Putty-Linseed Oil Type A

1. Where part repair/replacement of putty, Linseed Oil Putty should be used. Where full replacement around whole glass unit, refer to clause 400B.
   • Reference product:
   Arbo Linseed Oil Putty
   Traditional linseed oil putty manufactured in accordance to BS544.
   Intended for hand or knife application for bedding and front puttying of glass to frame.

Protective treatment with a paint system and regular subsequent maintenance is essential to the long term performance of the putty.
Main Applications
Recommended for face glazing of primed softwood and absorbent hardwood frames.
Softwood frames should be primed with a suitable
primer to BS7956. Maximum recommended fillet size 30mm x 13mm.
Not recommended for use with laminated glass or flush edged double glazed units.
• Application Instructions
Joint preparation
All glazing surfaces must be clean, dry and free from all contamination.
-Arbo Linseed Oil Putty may be applied by hand or knife. Glazing should be carried out in accordance with BS8000 Part 7:1990 and the relevant clauses of BS6262
Colour: Natural
Application Temperature: + 5º C to + 30º C
Painting: Paint within 4 weeks of application after the putty has sufficiently skinned and firmed up to accept the paint finish. Both undercoat and final paint coats must be applied within this 4 week period.
Trial area is recommended to ensure compatibility.
Service Life: 20 years + when applied in accordance with established best practise and with regular maintenance of the paint finish.

400 B Putty-Whole Panel Replacement

1. Townsend and Renaudon Draft Pavilion Gardens, Buxton,
   For reinstallation of complete panes (i.e. no existing putty is retained).
   Approved multi-purpose glazing sealant: Contractor’s choice.
   Preparation: Ensure all loose putty / paint is removed from existing frames.
   All glazing surfaces must be clean, dry and free from all contamination.
   Installation: Glazing sealant in strict accordance with manufacturers written instructions

Ω End of Section

M20
Plastered/ rendered/ roughcast coatings

To be read with preliminaries/ general conditions.

10 Cement:lime:sand

1. Description: EXTERNAL RENDER
2. Substrate: To existing
   2.1. Preparation: Remove existing render
3. Mortar: Ready-mixed lime:sand
4. Sand: To BS EN 13139.
   4.1. Grading: 0/2 or 0/4 (CP or MP); category 2 fines.
5. Lime: Non-hydraulic to BS EN 459-1, type CL 90S.
6. Undercoats
   6.1. Mix (cement:lime:sand): First and second coats 1:1:5-6
   6.2. Thickness (excluding dubbing out and keys): First coat 8-12 mm (exclusive of keys) and second coat 6-10 mm
7. Final coat
   7.1. Mix (cement:lime:sand): 1:2:8-9
   7.2. Thickness: 6-8 mm
8. Finish: To match existing
9. Accessories:

67 Cold weather

1. General: Do not use frozen materials or apply coatings on frozen or frost bound substrates.
2. Internal work: Take precautions to prevent damage to internal coatings when air temperature is below 3°C.
3. External work: Avoid when air temperature is at or below 5°C and falling or below 3°C and rising.

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 edges.
   2.1. Horizontal and vertical edges: Square cut or slightly undercut.
   2.2. Bottom edges to external render: Do not undercut.
   2.3. Render with imitation joints: Cut back to joint lines.
3. Cracks (other than hairline cracks): Cut out to a width of 75 mm (minimum).
4. Dust and loose material: Remove from exposed substrates and edges.

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, to correct line and level, with angles and corners to a right angle unless specified otherwise, and 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.

92 Curing and drying non-hydraulic lime render

1. General: Prevent premature setting and uneven drying of each coat.
2. Curing coatings: Keep each coat damp by covering with sheeting hung clear of coating. Spray with water until sufficiently firm.
   2.1. Sheeting:
3. Shrinkage: Thoroughly consolidate/ scour each coat one or more times as necessary to control shrinkage.

93 Curing and drying of render coatings

1. General: Prevent premature setting and uneven drying of each coat.
2. Curing: Keep each coat damp by covering with polyethylene sheet and/ or spraying with water.
   2.1. Curing period (minimum):
3. Drying: Allow each coat to dry thoroughly, with shrinkage substantially complete before applying next coat.

94 Flatness/ surface regularity

1. Sudden irregularities: Not permitted.
2. Deviation of plaster surface: Measure from underside of a straight edge placed anywhere on surface.
   2.1. Permissible deviation (maximum) for plaster not less than 13 mm thick: 3 mm in any consecutive length of 1800 mm.

99 Render final coat – plain floated finish

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

Ω End of Section

M60
Painting/clear finishing

Coating systems

12 Solvent-based finishing coats Gloss

1. Manufacturer: Dulux Trade, brand of AkzoNobel
   1.1. Contact details
      1.1.1. Address: AkzoNobel Decorative Paints
      Wexham Road
      Slough
      Berkshire
      SL2 5DS
      1.1.2. Telephone: +44 (0)333 222 7070
      1.1.3. Web: www.duluxtradepaintexpert.co.uk
      1.1.4. Email: project.support@akzonobel.com
   1.2. Product reference: Dulux Trade Weathershield Exterior High Gloss
2. Composition: Alkyd and fungicide.
3. Sheen: High gloss.
4. Colour: White
5. Execution: Applying coating.
6. System code:
7. Capacity:
8. Form: Liquid.
9. Surfaces: Previously decorated
   9.1. Preparation: Degrease and provide key
10. Initial coats: As recommended by manufacturer
11. Undercoats: As recommended by manufacturer
   11.1. Number of coats: 2
12. Finishing coats: Weathershield Exterior High gloss
   12.1. Number of coats: 1

12 Solvent-based finishing coats Gloss-Existing paint finish not removed

1. Manufacturer: Dulux Trade, brand of AkzoNobel
   1.1. Contact details
      1.1.1. Address: AkzoNobel Decorative Paints
      Wexham Road
      Slough
      Berkshire
      SL2 5DS
      1.1.2. Telephone: +44 (0)333 222 7070
      1.1.3. Web: www.duluxtradepaintexpert.co.uk
      1.1.4. Email: project.support@akzonobel.com
   1.2. Product reference: Dulux Trade Weathershield Exterior High Gloss
2. Composition: Alkyd and fungicide.
3. Sheen: High gloss.
4. Colour: As existing

5. Execution: Applying coating.
6. System code:
7. Capacity:
8. Form: Liquid.
9. Surfaces: Previously decorated
   9.1. Preparation: Remove all loose and defective coatings, sand down. Ensure surfaces are clean and dry.
10. Undercoats: As recommended by manufacturer
    10.1. Number of coats: 2
11. Finishing coats: Weathershield Exterior High Gloss
    11.1. Number of coats: 1

170 Water-based masonry paints Type A

1. Manufacturer: Dulux Trade, brand of AkzoNobel
   1.1. Contact details
      1.1.1. Address: AkzoNobel Decorative Paints
      Wexham Road
      Slough
      Berkshire
      SL2 5DS
      1.1.2. Telephone: +44 (0)333 222 7070
      1.1.3. Web: www.duluxtradepaintexpert.co.uk
      1.1.4. Email: project.support@akzonobel.com
   1.2. Product reference: Dulux Trade Weathershield Smooth Masonry Paint
2. Texture: Smooth.
3. Colour: As existing
4. Additives: Fungicide.
5. Form: Liquid.
6. Surfaces:
   6.1. Preparation: Brush down to remove surface contaminants. Ensure surfaces are clean and dry. Remove loose and spalled material and wash down
7. Initial coats: As recommended by manufacturer
8. Undercoats: As recommended by manufacturer

Generally

215 Handling and storage

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

220 Compatibility

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

280 Protection

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

Preparation

32 Previously coated surfaces generally Chemical Stripping

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

32 Previously coated surfaces generally Railing Finials & Stone Detailing

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

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

400 Preparation generally

1. Standard: In accordance with BS 6150.
2. Refer to any pre-existing CDM Health and Safety File.
3. Refer to CDM Construction Phase Plan where applicable.
4. Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
5. Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
6. Substrates: Sufficiently dry in depth to suit coating.
7. Efflorescence salts: Remove.
8. Dirt, grease and oil: Remove. Give notice if contamination of surfaces/ substrates has occurred.
9. Surface irregularities: Remove.
10. Joints, cracks, holes and other depressions: Fill flush with surface, to provide smooth finish.
11. Dust, particles and residues from preparation: Remove and dispose of safely.
12. Water based stoppers and fillers
    12.1. Apply before priming unless recommended otherwise by manufacturer.
    12.2. If applied after priming: Patch prime.
13. Oil based stoppers and fillers: Apply after priming.
14. Doors, opening windows and other moving parts
    14.1. Ease, if necessary, before coating.
    14.2. Prime resulting bare areas.

420 Fixtures and fittings

1. Removal: Before commencing work remove: Coverplates, grilles, wall clocks, and other surface mounted fixtures.
2. Replacement: Refurbish as necessary, refit when coating is dry.

425 Ironmongery

1. Removal: Before commencing work: Remove ironmongery from surfaces to be coated.
2. Hinges: Remove
3. Replacement: Refurbishment as necessary; refit when coating is dry.

430 Existing ironmongery

1. Refurbishment: Remove old coating marks. Clean and polish.

440 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. Suspected existing hazardous materials: Prepare risk assessments and method statements covering 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 to remove dirt, grease and contaminants.
   7.2. Gloss-coated surfaces: Provide key.
8. Partly removed coatings
   8.1. Additional preparatory coats: Apply to restore original coating thicknesses.
   8.2. Junctions: Provide flush surface.
9. Completely stripped surfaces: Prepare as for uncoated surfaces.

461 Previously coated wood

1. Degraded or weathered surface wood: Take back to provide suitable substrate.
2. Degraded substrate wood: Repair with sound material of same species.
3. Exposed resinous areas and knots: Apply two coats of knotting.

471 Preprimed wood

1. Areas of defective primer: Take back to bare wood and reprime.

481 Uncoated wood

1. General: Provide smooth, even finish with arrises and moulding edges lightly rounded or eased.
2. Heads of fasteners: Countersink sufficient to hold stoppers/fillers.
3. Resinous areas and knots: Apply two coats of knotting.

611 Wall coverings

1. Retained wall coverings: Check that they are in good condition and well adhered to substrate.
2. Previously covered walls: Wash down to remove paper residues, adhesive and size.

622 Organic growths

1. Dead and loose growths and infected coatings: Scrape off and remove from site.
2. Treatment biocide: Apply appropriate solution to growth areas and surrounding surfaces.
3. Residual effect biocide: Apply appropriate solution to inhibit re-establishment of growths.

631 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 set.
4.2. Seal and coat as soon as fully set.

651 Existing gutters

1. Dirt and debris: Remove from inside of gutters.
2. Defective joints: Clean and seal with suitable jointing material.

Application

711 Coating generally

1. Application standard: In accordance with BS 6150, clause 9.
2. Conditions: Maintain suitable temperature, humidity and air quality during application and drying.
3. Surfaces: Clean and dry at time of application.
4. Thinning and intermixing of coatings: Not permitted unless recommended by manufacturer.
5. Overpainting: Do not paint over intumescent strips or silicone mastics.
6. Priming coats
   6.1. Thickness: To suit surface porosity.
   6.2. Application: As soon as possible on same day as preparation is completed.
7. Finish
   7.1. Even, smooth and of uniform colour.
   7.2. Free from brush marks, sags, runs and other defects.
   7.3. Cut in neatly.
8. Doors, opening windows and other moving parts: Ease before coating and between coats.

720 Priming joinery

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

730 Workshop coating of concealed joinery surfaces

1. General: Apply coatings to all surfaces of components.

731 Site-coating of concealed joinery surfaces

1. General: After priming, apply additional coatings to surfaces that will be concealed when fixed in place.
   1.1. Components: External door frames. Built in window frames
   1.2. Additional coatings: One undercoat

780 Bead glazing to coated wood

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

790 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

Z20
Fixings and adhesives

Products

310 Fasteners generally

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.

320 Packings

1. Materials: Non-compressible, corrosion proof.
2. Area of packings: Sufficient to transfer loads.

340 Masonry fixings

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

350 Plugs

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

390 Adhesives generally

1. Standards
   1.1. Hot-setting phenolic and aminoplastic: To BS 1203.
   1.2. Thermosetting wood adhesives: To BS EN 12765.
   1.3. Thermoplastic adhesives: To BS EN 204.

410 Powder actuated fixing systems

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

Execution

610 Fixing 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/ sleeves to avoid bimetallic corrosion.
3. Appearance: Fixings to be in straight lines at regular centres.

620 Fixing through finishes

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

630 Fixing packings

1. Function: To take up tolerances and prevent distortion of materials and components.
2. Limits: Do not use packings beyond thicknesses recommended by fixings and fasteners manufacturer.

3. Locations: Not within zones to be filled with sealant.

640 Fixing cramps

1. Cramp positions: Maximum 150 mm from each end of frame sections and at 600 mm maximum centres.
2. Fasteners: Fix cramps to frames with screws of same material as cramps.
3. Fixings in masonry work: Fully bed in mortar.

670 Pelleted countersunk screw fixing

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

680 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.

690 Using powder actuated fixing systems

1. Powder actuated fixing tools: To BS 4078-2 and Kitemark certified.
2. Operatives: Trained and certified as competent by tool manufacturer.

700 Applying adhesives

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

Ω End of Section

Z21
Mortars

Cement gauged mortars

135 Site made lime:sand for cement gauged masonry mortars

1. Permitted use: Where a special colour is not required and in lieu of factory made ready-mixed material.
2. Lime: Hydrated nonhydraulic lime to BS 890.
   Townsend and Renaudon Draft Pavilion Gardens, Buxton,
   2.1. Type: CL 90S.
3. Mixing: Thoroughly mix lime with sand, in the dry state. Add water and mix again. Allow to stand, without drying out, for at least 16 hours before using.

Lime:sand mortars

310 Lime:sand mortar mixes

1. Specification: Colour of mortar to match existing mortars.

320 Sand for lime:sand masonry mortars

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

330 Ready prepared lime putty

1. Type: Slaked directly from CL 90 quicklime to BS EN 459-1, using an excess of water.
   1.1. Maturation: In pits/ containers that allow excess water to drain away.
   1.2. Density of matured lime putty: 1.3-1.4 kg/litre.
2. Maturation period before use (minimum): 180 days

345 Admixtures for hydraulic lime:sand mortars

1. Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
2. Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.

360 Making lime:sand mortars generally

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

400 Making hydraulic lime:sand mortars

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

Ω End of Section

Z22
Sealants

Products

310 Joints

1. Description:
2. Manufacturer: Contractor's choice
   2.1. Product reference: Contractor's choice
3. Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.

Execution

610 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:

620 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.

630 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