# 1624 Chatham Mill

**09 February 2017**

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# C
# Demolition/ Alteration/ Renovation

# C40
# Cleaning masonry/ concrete

## C40 Cleaning masonry/ concrete

To be read with Preliminaries/ General conditions.

**GENERAL/ PREPARATION**

110 SCOPE OF WORK
- Brickwork in general and the floor of the loading bay .

120 RELATED REPAIR AND REMEDIAL WORKS
- Work to be carried out before cleaning work: Pointing to cracks and joints in masonry, as section C41.

160 PROTECTION
- Surfaces not designated for cleaning: Prevent damage, including marking and staining.
- Openings: Prevent ingress of water, cleaning agents, and detritus.
  - Vents and grilles: Seek instructions before sealing up.
- Temporary mechanical fastenings:
  - In masonry: Locate in joints.
  - In other surfaces: Seek instructions.
- Additional protection: Submit proposals .

175 CONTROL AND DISPOSAL OF WASH WATER AND DETRITUS
- Disposal: Safely. Obtain approvals from relevant Authority.
- Control of wash water: Collect and divert to prevent ingress and damage to building fabric and adjacent areas.
- Above and below ground drainage systems: Keep free from detritus and maintain normal operation.

190 CLEANING GENERALLY
- Operatives: Appropriately trained and experienced for each type of cleaning work.
  - Evidence of training: Submit on request.
- Control of cleaning: Confine cleaning processes and materials to designated areas. Prevent wind drift.
- Detritus: Remove regularly. Dispose of safely.
- Monitoring: Frequently check results of cleaning compared to approved trial samples. If results established by trials are not achieved, seek instructions.
- Modifications to cleaning methods and materials: Seek instructions.

230 TRIAL SAMPLES
- Trial sample reference: Brickwork.
  - Surface: Clay brick.
  - Location/ Size: .5m2.
  - Type of soiling: Paint.
  - Cleaning methods: Pressurized water.
- Records: Maintain written records for each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

231A TRIAL SAMPLES
- Trial sample reference: Concrete.
  - Surface: Concrete.
  - Location/ Size: .5m2.
  - Type of soiling: Paint.
  - Cleaning methods: Pressurized water.
- Records: Maintain written records for each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

**PRODUCTS/ EQUIPMENT**

342 PRESSURIZED WATER CLEANING EQUIPMENT
- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.
- Operational pressure: Contractor's choice.
- Nozzles: Subject to site trials.

352 STEAM CLEANING EQUIPMENT
- Manufacturer: Contractor's choice .
  - Product reference: Contractor's choice .

**APPLICATION**

412 REMOVAL OF LOOSELY ADHERED DEPOSITS
- Timing: Before commencement of other cleaning methods.
- Surfaces: Prevent damage, including abrasion.

432 TOOLING
- Tooling of surfaces: Not permitted.

472 PRESSURIZED WATER CLEANING
- Surfaces: Prevent damage, including abrasion.
- Equipment settings (including nozzle type and distance from surface): Adjust regularly to achieve optimum cleaning performance for each surface.

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

**C41**
**Repairing/ Renovating/ Conserving masonry**

# C41 Repairing/ Renovating/ Conserving masonry

**To be read with Preliminaries/ General conditions**

**GENERALLY/ PREPARATION**

110 SCOPE OF WORK
- Schedule: Repairs to brickwork in general.
- Records of masonry to be repaired: Before starting work, use measurements and photographs as appropriate to record bonding patterns, joint widths, special features, etc.
- 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
- Purpose: To confirm type and extent of repair/ renovation/ conservation work shown on drawings and described in survey reports and schedules of work.
- Parties involved: Contract administrator and Contractor's representative.
- Timing: At least 5 working days before starting each section of work.
- Instructions issued during inspection: Confirm in writing, with drawings and schedules as required, before commencing work.

**WORKMANSHIP GENERALLY**

150 POWER TOOLS
- Usage for removal of mortar: Not permitted.

155 PUTLOG SCAFFOLDING
- Usage: Not permitted.

160 PROTECTION OF MASONRY UNITS AND MASONRY
- 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.
- 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
- 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
- Retained masonry in the vicinity of repair works: Disturb as little as possible.
- Existing retained masonry: Do not cut or adjust to accommodate new or reused units.
- 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

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

185 ADVERSE WEATHER

- General: Do not use frozen materials or lay masonry units on frozen surfaces.
- Air temperature: Do not bed masonry units or repoint:
  - 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.
  - 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.
  - In nonhydraulic lime:sand mortars in cold weather, unless approval is given.
- Temperature of the work: Maintain above freezing until mortar has fully set.
- Rain, snow and dew: Protect masonry by covering during precipitation, and at all times when work is not proceeding.
- Hot conditions and drying winds: Prevent masonry from drying out rapidly.
- New mortar damaged by frost: Rake out and replace.

190 CONTROL SAMPLES

- General: Complete an area of each of the following types of work, and arrange for inspection before proceeding with the remainder: Repointing – for each different type of mix/ pointing profile/ finish prepare sample areas of approximately one square metre; first stage approval – after preparation; second stage approval – after repointing.

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**MATERIAL/ PRODUCTION/ ACCESSORIES**

215 MATERIAL SAMPLES

- Representative samples of designated materials: Submit before placing orders.
  - Designated materials: Sands for mortar repairs.
- Retention of samples: Unless instructed otherwise, retain samples on site for reference. Protect from damage and contamination.

260 BRICKS

- Manufacturer: Recommended by contractor.
  - Product reference: To match Existing.
- Size: To match Existing.
- Special shapes: To match Existing.
- Recycled content: None permitted.

**DISMANTLING/ REBUILDING**

310A DISMANTLING MASONRY FOR REUSE

- Masonry units to be reused: Remove carefully and in one piece.
  - Treatment: Clean off old mortar, organic growths and dirt, and leave units in a suitable condition for rebuilding.
  - Identification: Mark each unit clearly and indelibly on a concealed face, indicating its original position in the construction. Transcribe makings to drawings/ photographs. Refer to Atelier MB D&A Statement: Appendix for Basic Repair Specification

## REPLACEMENTS AND INSERTIONS

330 PREPARATION FOR REPLACEMENT MASONRY

- Defective material: Carefully remove to the extent agreed. Do not disturb, damage or mark adjacent retained masonry.
- Existing metal fixings, frame members, etc: Report when exposed.
- Redundant metal fixings: Remove.
- 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.

365 REPLACEMENT OF BRICKS To rear blocks

- Bricks: Clay as clause 260.
- Mortar: As section Z21.
  - Mix: To match existing.
  - Sand source/ type: To match Existingl.
- Fixings: Not required.
- Joints: To match Existing.
- Other requirements: None.

385 LAYING REPLACEMENT MASONRY UNITS

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

## MORTAR REPAIRS

510 PREPARATION FOR MORTAR REPAIRS

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

520 MORTAR REPAIRS to brickwork where needed

- Undercoats: As section Z21.
  - Mix: To match Existing.
  - Sand source/ type: To match Existing.
  - Building up: In layers where necessary, each layer not exceeding 12 mm.
- Finishing coat: To match approved samples.
  - Mix: To match Existing.
  - Sand source/ type: To match Existing.
  - Finished thickness: To match Existing.
  - Finish: To match Existing.
- Reinforcement: Not required.

540 APPLYING MORTAR

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

550 SCRAPED FINISH TO MORTAR REPAIRS

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

555 FLOAT FINISH TO MORTAR REPAIRS

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

**CRACK REPAIRS/ TIES/ REINFORCEMENT**

610 MORTAR REPAIR OF CRACKS To brickwork where needed

- Mortar: As section Z21.
  - Mix: To match Existing.
  - Sand source/ type: To match Existing.
- Preparation: Clean out cracks to remove debris, dust and dirt. Dampen recesses, as necessary, to control suction.
- Applying mortar: Press well into cracks so that they are fully filled. Ensure that mortar does not encroach upon exposed faces. Finish mortar flush with masonry face.
- Other requirements: Exclude isolated hair line cracks (less than about 1.0 mm wide).

**POINTING/ REPOINTING**

810 PREPARATION FOR REPOINTING

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

820 POINTING Bricks internally

- Preparation of joints: Carefully brush away loose mortar.
- Mortar: As section Z21.
  - Mix: To match Existing.
  - Sand source/ type: To match Existing.
- Joints profile/ finish: To match Existing.
- Other requirements: To match Existing.

840 POINTING WITH TOOLS/ IRONS

- General: Press mortar well into joints using pointing tools/ irons that fit into the joints, so that they are fully filled.
- 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

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

# C51
# Repairing/ Renovating/ Conserving timber

## C51 Repairing/ Renovating/ Conserving timber

**To be read with Preliminaries/ General conditions**

**GENERAL**

110 INSPECTION
- Purpose: To confirm nature and extent of repair/ renovation/ conservation work shown on drawings and described in survey reports and schedules of work.
- Parties involved: Contract administrator and Contractor's representative.
- Timing: At least 5 working days before starting each section of work.
- Instructions issued during inspection: Confirm in writing, with drawings and schedules as required, before commencing work.

150 TIMBER PROCUREMENT
- Timber (including timber for wood based products): Obtained from well managed forests and/ or plantations in accordance with:
  - The laws governing forest management in the producer country or countries.
  - International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
- Documentation: Provide either:
  - Documentary evidence (that has been or can be independently verified) regarding the provenance of all timber supplied.
  - Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.
- Certification scheme: UK Timber Procurement Policy Category A evidence certification scheme..
  - Other evidence: None.

160 TIMBER SUPPLIER
- Supplier: Contractor's choice.

**PRODUCTS**

350 UNGRADED SOFTWOOD FOR INTERNAL NONSTRUCTURAL USE
- Quality of timber: Free from decay, insect attack (except pinhole borers) and with no knots wider than half the width of the section.
- Surface finish: Sawn generally.
- Treatment:
  - Preservative treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C8.
    Design service life: 20 years.
  - Fire retardant treatment: None required.

390 NON-STRUCTURAL PLYWOOD For roofing
- Standard: To an approved national standard.
- Thickness: 18mm.
- Appearance class to BS EN 635: III.
- Bond quality to BS EN 314-2: Class 3.
- Finish: Unsanded.
- Edges: Tongued and grooved all edges.
- Treatment:
  - Preservative treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C11.
    Design service life: Not applicable.
  - Fire retardant treatment: None required.

480 SCREWS For general use
- Standard: As section Z20.
- Material: Stainless steel.
- Tensile strength (minimum): 550 N/mm².
- Finish as delivered: None.

540 RESIN GROUT/ ADHESIVE For surface repairs generally
- Type: Gap filling epoxy resin.
- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.

**EXECUTION**

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

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

620 PROTECTION OF TIMBER AND WOOD COMPONENTS BEFORE AND DURING INSTALLATION
- Storage: Keep dry, under cover, clear of the ground and with good ventilation. Support sections/ components on regularly spaced, level bearers on a dry, firm base.
- Handling: Do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing.

630 MATERIAL SAMPLES
- Representative samples of designated materials: Submit before placing orders.
  - Designated materials: Floor boards, skirting.

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

660 CROSS SECTION DIMENSIONS OF STRUCTURAL SOFTWOOD AND HARDWOOD

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

665 CROSS SECTION DIMENSIONS OF NON-STRUCTURAL SOFTWOOD

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

670 CROSS SECTION DIMENSIONS OF NON-STRUCTURAL HARDWOOD

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

690 PROCESSING TREATED TIMBER

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

700 WOOD COMPONENTS - AS DELIVERED FINISH

- Components to be painted: Primed.
- Components to be clear finished: None.

720 TEMPORARY REMOVAL AND REINSTATEMENT OF FITTINGS/ FIXTURES

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

750 CLEANING DIRTY OR STAINED WOOD

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

760 REPAIR OF MEMBERS - CUTTING OUT MEMBERS

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

780 REPAIR OF DISTORTED TIMBER MEMBERS

- Generally: Repair to shape that member has assumed.

840 FIXING FRAMING ANCHORS AND CLEATS

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

860 MOISTURE CONTENT CHECKING

- Procedure: When instructed, check moisture content of timber sections with an approved electrical moisture meter.
- Test results: Keep records of all tests. If moisture content falls outside specified range obtain instructions.

870 MOISTURE CONTENT TESTING

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

**COMPLETION**

910 MECHANICALLY FASTENED JOINTS

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

# M
# Surface finishes

# M60
# Painting/ clear finishing

## M60 Painting/ clear finishing

To be read with Preliminaries/ General conditions.

**COATING SYSTEMS**

110 EMULSION PAINT To internal plastered surfaces
- Manufacturer: Contract administrator's choice.
  - Product reference: Contract administrator's choice.
- Surfaces: Internal.
  - Preparation: Remove existing gloss paint .
- Initial coats: As recommended by manufacturer.
  - Number of coats As recommended by manufacture.
- Undercoats: As recommended by manufacturer.
  - Number of coats: As recommended by manufacture.
- Finishing coats: As recommended by manufacture.
  - Number of coats: As recommended by manufacture.

110A PRIMER To plastered walls and ceilings
- Manufacturer: Johnstone's Trade - a brand of PPG Industries.
  - Web: www.johnstonestrade.com.
  - Email: specifiers.acuk@ppg.com.
  - Product reference: Johnstone's Trade Stain Block Primer (Performance Coatings)

110B EMULSION PAINT
- Manufacturer: Johnstone's Trade - a brand of PPG Industries.
  - Web: www.johnstonestrade.com.
  - Email: specifiers.acuk@ppg.com.
  - Product reference: Johnstone's Trade Jonmat Premium Contract Matt (Ecological Solutions)
- Colour: To be advised.

130 GLOSS PAINT To internal exposed steel columns and beams
- Manufacturer: Contract administrator's choice.
  - Product reference: Contract administrator's choice.
- Surfaces: Previously decorated.
  - Preparation: Remove existing gloss paint .
- Initial coats: As recommended by manufacturer.
  - Number of coats: As recommended by manufacture.
- Undercoats: As recommended by manufacturer.
  - Number of coats: As recommended by manufacture.
- Finishing coats: As recommended by manufacture.
  - Number of coats: As recommended by manufacture.

170 MASONRY COATING To exposed concrete flooring .

- Manufacturer: Contract administrator's choice.
  - Product reference: Contract administrator's choice.
- Surfaces: Loading bay/ bridge link floor.
  - Preparation: Remove loose and spalled material and wash down.
- Initial coats: As recommended by manufacturer.
  - Number of coats: As recommended by manufacture.
- Undercoats: As recommended by manufacturer.
  - Number of coats: As recommended by manufacture.
- Finishing coats: As recommended by manufacture.
  - Number of coats: As recommended by manufacture.

175 PROTECTIVE COATING To floor surfaces

- Manufacturer: Contract administrator's choice.
  - Product reference: Contract administrator's choice.
- Surfaces: Internal concrete, plaster, wood surfaces.
  - Preparation: Surfaces to be carefully rubbed down.
- Initial coats: As recommended by manufacturer.
  - Number of coats: As recommended by manufacture.
- Undercoats: As recommended by manufacture.
  - Number of coats: As recommended by manufacture.
- Finishing coats: As recommended by manufacture.
- Application: Brush.
  - Number of coats: As recommended by manufacture.
  - Slip resistance value - water wet (minimum): PTV to BS 7976 of 49.

180 FLOOR COATING To loading bay and bridge link

- Manufacturer: Contract administrator's choice.
  - Product reference: Contract administrator's choice.
- Surfaces: Exposed concrete.
  - Preparation: Dustproofed and sealed.
- Initial coats: As recommended by manufacturer.
  - Number of coats: As recommended by manufacture.
- Finishing coats: Epoxy resin.
  - Number of coats: As recommended by manufacture.
  - Slip resistance value - water wet (minimum): PTV to BS 7976 of 49.

195 SPECIAL COATING - ANTI-SLIP TO RAMP.

- Manufacturer: Contract administrator's choice.
  - Product reference: Contract administrator's choice.
- Surfaces: Concrete ramp in bridge link.
  - Preparation: Wash down and degrease.
- Initial coats: As recommended by manufacturer.
  - Number of coats: As recommended by manufacture.
- Undercoats: As recommended by manufacturer.
  - Number of coats: As recommended by manufacture.
- Finishing coats:
  - Type: As recommended by manufacture.
  - Number of coats: As recommended by manufacture.
  - Slip resistance value - water wet (minimum): PTV to BS 7976 of 49.

## GENERAL

215 HANDLING AND STORAGE

- Coating materials: Deliver in sealed containers, labelled clearly with brand name, type of material and manufacturer's batch number.
- Materials from more than one batch: Store separately.

280 PROTECTION

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

## PREPARATION

400 PREPARATION GENERALLY

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

425 IRONMONGERY

- Removal: Before commencing work remove ironmongery from surfaces to be coated.
- Hinges: Do not remove.
- Replacement: Refurbish as necessary; refit when coating is dry.

430 EXISTING IRONMONGERY

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

440 PREVIOUSLY COATED SURFACES GENERALLY

- Preparation: In accordance with BS 6150, clause 11.5.
- Contaminated or hazardous surfaces: Give notice of:
  - Coatings suspected of containing lead.
  - Substrates suspected of containing asbestos or other hazardous materials.
- Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
- Significant rot, corrosion or other degradation of substrates.
- Removing coatings: Do not damage substrate and adjacent surfaces or adversely affect subsequent coatings.
- Loose, flaking or otherwise defective areas: Carefully remove to a firm edge.
- Alkali affected coatings: Completely remove.
- Retained coatings:
  - Thoroughly clean to remove dirt, grease and contaminants.
  - Gloss coated surfaces: Provide key.
- Partly removed coatings:
  - Additional preparatory coats: Apply to restore original coating thicknesses.
  - Junctions: Provide flush surface.
- Completely stripped surfaces: Prepare as for uncoated surfaces.

461 PREVIOUSLY COATED WOOD

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

471 PREPRIMED WOOD

- Areas of defective primer: Take back to bare timber.

481 UNCOATED WOOD

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

490 PREVIOUSLY COATED STEEL

- Defective paintwork: Remove to leave a firm edge and clean bright metal.
- Sound paintwork: Provide key for subsequent coats.
- Corrosion and loose scale: Take back to bare metal.
- Residual rust: Treat with a proprietary removal solution.
- Bare metal: Apply primer as soon as possible.
- Remaining areas: Degrease.

500 PREPRIMED STEEL

- Areas of defective primer, corrosion and loose scale: Take back to bare metal. Reprime as soon as possible.

511 GALVANIZED, SHERARDIZED AND ELECTROPLATED STEEL

- White rust: Remove.
- Pretreatment: Apply one of the following:
  - Mordant solution to blacken whole surface.
  - Etching primer recommended by coating system manufacturer.

521 UNCOATED STEEL - MANUAL CLEANING
- Oil and grease: Remove.
- Corrosion, loose scale, welding slag and spatter: Remove.
- Residual rust: Treat with a proprietary removal solution.
- Primer: Apply as soon as possible.

570 UNCOATED MASONRY/ RENDERING
- Loose and flaking material: Remove.

580 UNCOATED PLASTER
- Nibs, trowel marks and plaster splashes: Scrape off.
- Overtrowelled 'polished' areas: Key lightly.

590 UNCOATED PLASTERBOARD
- Depressions around fixings: Fill with stoppers/ fillers.

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

631 PREVIOUSLY PAINTED WINDOW FRAMES
- Paint encroaching beyond glass sight line: Remove.
- Loose and defective putty: Remove.
- Putty cavities and junctions between previously painted surfaces and glass: Clean thoroughly.
- Finishing:
  - Patch prime, reputty as necessary, and allow to set.
  - Seal and coat as soon as fully set.

645 SEALING INTERNAL MOVEMENT JOINTS
- General: To junctions of walls and ceilings with architraves, skirtings and other trims.
- Sealant: Water-borne acrylic.
  - Manufacturer: Contract administrator's choice.
    Product reference: Contract administrator's choice.
  - Preparation and application: As section Z22.

**APPLICATION**

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

730 WORKSHOP COATING OF CONCEALED JOINERY SURFACES

- General: Apply coatings to all surfaces of components.

# Z
# Building fabric reference specification

**Z12**
**Preservative/ fire retardant treatment**

## Z12 Preservative/ fire retardant treatment

To be read with Preliminaries/ General conditions.

110 TREATMENT APPLICATION

- Timing: After cutting and machining timber, and before assembling components.
- Processor: Licensed by manufacturer of specified treatment solution.
- Operatives: WPA certified.
- Certification: For each batch of timber provide a certificate of assurance that treatment has been carried out as specified.

130 PRESERVATIVE TREATMENT SOLUTION STRENGTHS/ TREATMENT CYCLES

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

210 FIRE RETARDANT TREATMENT

- Solution type: Dry interior.
  - Manufacturer: Contract administrator's choice.
    Product reference: Contract administrator's choice.
  - Application: Vacuum + pressure impregnation.
- Moisture content of wood:
  - At time of treatment: As specified for the timber/ component at time of fixing.
  - After treatment: Timber to be redried slowly at temperatures not exceeding 65°C to minimize distortion and degradation.

610 MAKING GOOD TO PRESERVATIVE TREATMENT ON-SITE

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

# Z20
# Fixings and adhesives

## Z20 Fixings and adhesives

To be read with Preliminaries/ General conditions.

**PRODUCTS**

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

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

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

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

390 ADHESIVES GENERALLY
- Standards:
  - Hot-setting phenolic and aminoplastic: To BS 1203.
  - Thermosetting wood adhesives: To BS EN 12765.
  - Thermoplastic adhesives: To BS EN 204.

410 POWDER ACTUATED FIXING SYSTEMS
- Types of fastener, accessories and consumables: As recommended by tool manufacturer.

**EXECUTION**

610 FIXING GENERALLY
- Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support.
- Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers/ sleeves to avoid bimetallic corrosion.
- Appearance: Fixings to be in straight lines at regular centres.

620 FIXING THROUGH FINISHES
- Penetration of fasteners and plugs into substrate: To achieve a secure fixing.

630 FIXING PACKINGS
- Function: To take up tolerances and prevent distortion of materials and components.
- Limits: Do not use packings beyond thicknesses recommended by fixings and fasteners manufacturer.
- Locations: Not within zones to be filled with sealant.

640 FIXING CRAMPS

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

670 PELLETED COUNTERSUNK SCREW FIXING

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

680 PLUGGED COUNTERSUNK SCREW FIXING

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

690 USING POWDER ACTUATED FIXING SYSTEMS

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

700 APPLYING ADHESIVES

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

# Z21
# Mortars

## Z21 Mortars

To be read with Preliminaries/ General conditions.

**CEMENT GAUGED MORTARS**

131 READY-MIXED LIME:SAND FOR CEMENT GAUGED MASONRY MORTARS
- Standard: To BS EN 998-2.
- Lime: Nonhydraulic to BS EN 459-1.
  - Type: CL 90S.
- Pigments for coloured mortars: To BS EN 12878.

160 CEMENTS FOR MORTARS
- Cement: To BS EN 197-1 and CE marked.
  - Types: Portland cement, CEM I.
    Portland limestone cement, CEM ll/A-L or CEM ll/A-LL.
    Portland slag cement, CEM II/B-S.
    Portland fly ash cement, CEM II/B-V.
  - Strength class: 32.5, 42.5 or 52.5.
- White cement: To BS EN 197-1 and CE marked.
  - Type: Portland cement, CEM I.
  - Strength class: 52.5.
- Sulfate resisting Portland cement:
  - Types: To BS EN 197-1 Sulfate resisting Portland cement, CEM I/SR and CE marked.
    To BS EN 197-1 fly ash cement, CEM ll/B-V and CE marked.
  - Strength class: 32.5, 42.5 or 52.5.
- Masonry cement: To BS EN 413-1 and CE marked.
  - Class: MC 12.5.

**LIME:SAND MORTARS**

310 LIME:SAND MORTAR MIXES
- Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

320 SAND FOR LIME:SAND MASONRY MORTARS
- Type: Sharp, well graded.
  - Quality, sampling and testing: To BS EN 13139.
  - Grading/ Source: As specified elsewhere in relevant mortar mix items.

345 ADMIXTURES FOR HYDRAULIC LIME:SAND MORTARS
- Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
- Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.

# Z22
# Sealants

## Z22 Sealants

To be read with Preliminaries/General conditions.

**PRODUCTS**

310 JOINTS between steel frames and plasterboard

- Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.

**EXECUTION**

610 SUITABILITY OF JOINTS

- Presealing checks:
  - Joint dimensions: Within limits specified for the sealant.
  - Substrate quality: Surfaces regular, undamaged and stable.
- Joints not fit to receive sealant: Submit proposals for rectification.

620 PREPARING JOINTS

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

630 APPLYING SEALANTS

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