Atelier Mb Ltd

1995 Mosley St

1995 Interior Repair Specification

25-11-2024

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C40
Cleaning masonry

Summary

Details of amended clauses

No changes to show.

General/ preparation

001 Methodology

1. Stonemason to meet with CA on site to agree and mark up extent of localised stone cleaning. This survey should determine the characteristics of the existing stone. – and in the case of sandstone particularly, how vulnerable it is to acid attack or damage from abrasives.
2. The scope of cleaning work is limited to soiling which can lead to further damage of the underlying fabric if not removed. Cleaning will not be carried out for aesthetic reasons other than where graffiti has been applied.
3. Soiling sampling is to be undertaken to determine material if deemed necessary.
4. Unless there is unstable stone which is at risk of breaking off and falling, cleaning to be carried out prior to stone repair work - this is to ascertain any further damage to the stone.
5. For sandstone - site trials will be carried out utilising a low pressure heated steam system (DOFF by Stonehealth or similar approved). The intensity will only be increased if deemed necessary, and until the lowest impact solution is determined that removes the stain/crust.
6. If this process does not sufficiently remove the soiling, consider appropriate chemical cleaning trials – such as Proteger ProShield Noir Wash.
7. Contractor must sufficiently protect internal fabric from water ingress prior to carrying out cleaning techniques. Issue proposed methodology for sign off prior to proceeding.

110 Scope of work

1. Removal of biological growths, graffiti, and guano deposits from sandstone.
2. To be read in conjunction with DOFF methodology document.

120 Related repair and remedial works

1. Work to be carried out before cleaning work: Pointing to cracks and joints in masonry - as section C41.

142 Removal of fittings

1. Timing: Before commencement of cleaning work.
2. Disturbance to surfaces: Minimize.
3. Items for disposal: To be agreed
4. Items to be kept for reuse: Iron air vent grills and ground inlet cover. Railings.

160 Protection

1. Additional Notes:: Provide and maintain throughout the cleaning works, effective protection and sealing to prevent:
   · Ingress of water, cleaning agents, debris and dust into the building via windows, doors, vents and other openings.
   · Damage to all components and finishes that can reasonably be protected during cleaning procedures, including lightning conductors, roof coverings, flashings, rainwater goods, glass, metal work, services equipment, signage and pavings.
   · Staining of surfaces from ferrous or other reactive metals.
2. Surfaces not designated for cleaning: Prevent damage, including marking and staining.
3. Openings: Prevent ingress of water, cleaning agents and detritus.
   3.1. Vents and grilles: Protect but do not seal up ventilation grilles, air bricks, or other ventilation openings without first seeking instructions.
4. Temporary mechanical fastenings
   4.1. In masonry: Locate in joints.
   4.2. In other surfaces: Seek instructions.

5. Additional protection:

165 PROTECTIVE MEMBRANES/BOARDS

1. · Use approved protective boards, sheetings, films, sealants and sealing tapes that do not stain protected materials and that can be readily removed after cleaning without damaging or staining the protected material.
   · Do not use temporary fastenings into components, masonry features and fittings without approval. When fixing into masonry, locate fastenings in joints

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. · Discharge wash water to an approved foul drainage system. Check outlets, gullies, etc. regularly to ensure that they are not blocked
4. Above and below ground drainage systems: Keep free from detritus and maintain normal operation.
   4.1. .: · Ensure that drains are clear on completion of cleaning work.

180 Cold weather

1. Cleaning procedures using water: Do not use when air temperature is at or below 5°C. Protect damp surfaces from frost.
2. Chemical cleaning agents: Do not use when surface temperatures are below those recommended by manufacturer.

190 Cleaning generally

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

210 HEALTH AND SAFETY

1. Take all necessary precautions to protect site operatives and the general public from health hazards associated with the materials and procedures for the cleaning method(s) used.

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: Survey before cleaning: Photogrammetric drawings of each elevation
3. Submission: At completion of cleaning works.

220 CONDITION OF SURFACES

1. Before commencing cleaning of each area, ensure that surfaces are in a suitable condition to be cleaned and that:
   - Walling and associated features/components are stable and that preparatory repair works are complete.
   - Fixtures and fittings have been removed.

230 Trial samples

1. Trial sample reference: TS 001 to 003
   1.1. Surface: Sandstone
   1.2. Location/ Size: TBA on site
   1.3. Type of soiling: Biological, guano, graffiti
   1.4. Cleaning methods: Super heated water (DOFF)
2. Records: Maintain written records for each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.
3. · Provide the CA with a copy of trial sample records
   · Make arrangements to enable the CA and all other interested parties including Conservation Officers and other Heritage where listed. The CA should ascertain and take note of the agreed level of clean that all the interested parties have approved.
   · Obtain approval before commencing cleaning.

230 Trial samples Type A

1. Trial sample reference: TS 004 to 006
   1.1. Surface: Sandstone
   1.2. Location/ Size: TBA on site
   1.3. Type of soiling: Biological, guano, graffiti AFTER initial DOFF cleaning has taken place - if required. Seek instructions.
   1.4. Cleaning methods: Proteger ProShield Noir Wash.
2. Records: Maintain written records for each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.
3. · Provide the CA with a copy of trial sample records
   · Make arrangements to enable the CA and all other interested parties including Conservation Officers and other Heritage where listed. The CA should ascertain and take note of the agreed level of clean that all the interested parties have approved.
   · Obtain approval before commencing cleaning.

250 CLEANING GENERALLY

1. · Use operatives who are skilled Stonehealth Approved, having been trained and experienced with the equipment, materials and procedures for the type(s) of cleaning and surfaces specified. Provide evidence of their training and experience to the CA on request.
   · Confine cleaning to designated area(s)/surfaces. Do not allow cleaning agents or residues to stray onto adjacent or protected surfaces.
   · Clean, collect and safely dispose of debris from scaffolding, ledges, etc. at the end of each day. Prevent debris falling to lower levels.
   · Prevent marking of cleaned areas from dirt and debris splashing up from scaffold boards.

260 MONITORING

1. · Regularly monitor effects of each cleaning procedure against the degree of cleaning established by approval trial sample(s). Seek instructions immediately, wherever:
   o Disruption to the surface occurs
   o Anticipated level of surface cleaning is not being achieved

o Discolouration or stains are revealed by cleaning.
· Do not modify cleaning procedures or materials without approval from the CA

270 RECORDING CLEANING METHODS

1. · Maintain records of cleaning methods used for each area/surface. Include details of equipment type, cleaning agents, ambient temperature conditions and other variables as specified in the relevant method(s) of cleaning clauses(s)
   · On completion of cleaning, provide copies of records to the CA

280 CONTROL OF WATER

1. · Provide suitable temporary catchment boards/sheeting, gutters etc. to collect wash water and divert it to suitable discharge points. Location of catchment are(s) TBA
   · Do not let wash water build up at outlets or above levels of flashings or anywhere where there is risk of it penetrating and causing damage to the building fabric.
   · Ensure that water does not penetrate interiors and damage finishes, etc. Monitor interior of building and seek instructions when any signs of damp appear internally.

Products/ equipment

300 Compatibility of chemical products

1. Products: Compatible and produced by the same manufacturer.

310 BRUSHING AND SCRAPING

1. Before commencing any other methods of cleaning, remove loosely adhered deposits and heavy deposits of biological matter using suitable corrosion resistant brushes and scrapers/spatulas that do not abrade or gouge the surface. Do not use brushes with steel bristles.

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.

321 TOOLING

1. To remove thick encrustations of dirt carbon and limescale etc. Is not permitted unless agreed in advance with CA and:
   · The work is carried out by skilled and experienced stone masons.
   · The original surface/detail is not removed unless agreed otherwise with the CA.

322 Abrasive cleaning equipment

1. Manufacturer/ Supplier: Not permitted.

352 Steam cleaning equipment Type A

1. Manufacturer: Stonehealth Ltd
   1.1. Contact details
      1.1.1. Address: G4/5 Draycott Business Park
      Cam
      Dursley
      Gloucestershire
      GL11 5DQ
      1.1.2. Telephone: +44 (0)1453 540600
      1.1.3. Web: www.stonehealth.com

1.1.4. Email: info@stonehealth.com

1.2. Product reference: DOFF Steam Cleaning System

2. Power supply:

362 Chemical agents

1. Description: Specialist commercial grade cleaner for the removal of carbon, soot and black mould from building **façades** and elevations.
2. Manufacturer: https://www.proshieldsolutions.com/

   2.1. Product reference: Proteger ProShield Noir Wash.

372 Plain poultices

1. Description: To graffiti
2. Poulticing medium manufacturer: Barrettine, St. Ivel Way, Warmley, Bristol BS30 8TY.
   T: 0117 960 0060 E: sales@barrettine.co.uk
   www.peelaway.co.uk

   2.1. Product reference: Peelaway no. 1
3. Softening agent: Deionized water.

380 DOFF STEAM CLEANING

1. · Equipment type – Stonehealth DOFF
   · Apply steam at the lowest pressure and allow when removing paint the appropriate temperature that will remove/soften/loosen deposits without abrading or disrupting the surface(s). If a paint softener is required: see also 415. If removing biological growth it may be possible to be removed at a lower temperature but to ensure that the re-growth does not occur, the full temperature of 150ºC should be applied over the whole surface in order to kill off the spores. In such instances there is no need to use a chemical biocide.
   · For each area/surface, establish the optimum settings (temperature, volume and pressure), nozzle type and distance of nozzle from substrate. Keep a written record of these variables but allow an operator to vary
   · Assist removal of softened deposits with suitable corrosion resistant brushes and scrapers/spatulas that do not abrade or gouge the surface.

Application

412 Removal of loosely adhered deposits

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

462 Water spray 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: Seek instructions

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.
   For each area/surface, establish the lowest possible concentration of agent(s) and the shortest dwell times, number of applications, ambient temperatures and rinsing water temperatures.
3. Application: To wetted surfaces.
   Contain chemical agents and rinsing water/sprays within each treatment area. Do not allow agents or rinsing water/sprays to contact surfaces that are either excluded from cleaning or that have already been cleaned. Prevent wind drift.
   Before each application of agent, wet the surface and adjacent areas using clean water applied by low pressure spray. Test for pH of wetted surface as clause 495.
   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.
   Rinse treated surfaces thoroughly and evenly with clean water working from the bottom of each area upwards. Do not use water spray pressures that will drive cleaning agents into, or cause disruption of, the surface material and joints.
   Carry out pH testing and neutralisation procedures as clauses 495.
   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.

520 COMPLETION

1. · Obtain CA's approval of cleaning to each area/surface and before removal of temporary protection.
   · After removal of temporary protection, thoroughly clean all glazing, window frames, doors, sills and other affected surfaces.
   · Check that all gutters, hoppers, downpipes and gullies are free from obstruction and debris arising from cleaning works.
   · Give the CA 1 weeks notice before striking each stage of scaffolding, to allow for final inspections.
   · Refix the following fittings: n/a.
   Complete all necessary documentation, review and record final results with supportive drawings and photographs
2. Check that all gutters, hoppers, downpipes and gullies are free from obstruction and debris arising from cleaning works.
   Give the CA 5 working days notice before striking each stage of scaffolding, to allow for final inspections.
   Complete all necessary documentation, review and record final results with supportive drawings and photographs.
3.

Ω End of Section

C41
Repairing/ renovating/ conserving masonry

Summary

Details of amended clauses

No changes to show.

Generally/ preparation - Not Used

Workmanship generally - Not Used

Materials/ production/ accessories - Not Used

Dismantling/ rebuilding - Not Used

Replacements and insertions - Not Used

Tooling/ dressing stone in situ - Not Used

Mortar repairs - Not Used

Crack repairs/ ties/ reinforcement - Not Used

Grouting rubble filled cores - Not Used

Pointing/ repointing - Not Used

Ω End of Section

C41
Repairing/ renovating/ conserving masonry

Summary

Details of amended clauses

No changes to show.

Generally/ preparation

001 Methodology - Chimney Stack Works

1. Install safe working platform and protective boarding as required prior to commencement
2. Prop existing structure in accordance with S.E. methodology
3. Carefully take down existing chimney pots, and store on site for reuse at a later date if required.
4. Carefully remove haunching material - using hand tools only where possible. Dispose of off site in accordance with site waste management plan.
5. Carefully take down brickwork using hand tools. Clean off lime mortar and retain as much of the original brickwork on site as possible for reuse elsewhere in the building. Take down to a height just beneath the existing floor joists to suit new steelwork levels.
6. Install new sandstone flags across chimney opening, using lime mortar as elsewhere. Thickness as per S.E. details.
7. Take record photographs throughout. Stop work and alert CA as required in accordance with strip-out methodology.
8. All bedding, repointing, and face finishing to be carried out on a like for like basis in the context of the surrounding fabric. Any deviations must be reviewed by the CA prior to proceeding.
9.

110 Scope of work

1. Schedule: Take down and cap off 2 no. existing chimney stacks to underside of existing ceiling joists.

125 Removal of fittings/ fixtures

1. Items to be removed, and reinstated on completion of repair work: Chimney pots
   - 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: Dust down. Where chimney pots are significantly damaged, seek instructions from CA.
   - 1.3. Storage: Protect against damage, and store until required.
     - 1.3.1. Storage location: On site - Submit proposals
2. Items unsuitable or not required for reuse: Cabling, pipes and electrical fittings - TBA on site
   - 2.1. Disposal: Submit proposals
3. Masonry fabric and surfaces: Do not damage during removal and replacement of fittings/ fixtures.

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: Full measured drawings of stones to be replaced. Note bond, joint size, style and texture of pointing and any special or unusual features for replication.
3. Documentation: Submit on completion of the work.
   - 3.1. Number of sets: One - Electronic, pdf format.

Workmanship generally

150 Power tools

1. Usage for removal of mortar: Not permitted

155 Putlog scaffolding

1. Usage: Not permitted

160 Protection of masonry units and masonry

1. Masonry units: Prevent overstressing during transit, storage, handling and fixing. Store on level bearers clear of the ground, separated with resilient spacers. Protect from adverse weather and keep dry. Prevent soiling, chipping and contamination. Lift units at designed lifting points, where provided.
2. Masonry: Prevent damage, particularly to arrises, projecting features and delicate, friable surfaces. Prevent mortar/ grout splashes and other staining and marking on facework. Protect using suitable nonstaining slats, boards, tarpaulins, etc. Remove protection on completion of the work.

165 Structural stability

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

170 Disturbance to retained masonry

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

180 Workmanship

1. Skill and experience of site operatives: Appropriate for types of work on which they are employed.
   - 1.1. Documentary evidence: Submit on request.
   - 1.2. OPERATIVES: Use operatives who are skilled and experienced with the materials and procedures required for the types of repairs specified. Provide evidence of their training and previous experience to the CA 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 hydraulic lime:sand mortars when ambient air temperature is at or below 5°C and falling or unless it is at least 3°C and rising.
   - 2.2. In 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.

Materials/ production/ accessories

231 GUARANTEE

1. Obtain and submit written guarantee that all new stone is from the quarry and bed as specified/agreed following site samples.

232 INSPECTION OF MASONRY UNITS

1. Before dispatch to site, inspect and check units to ensure they match the material sample and comply with drawings and specification
2. Give min 1 weeks notice to allow architect to attend workshop and inspect before site delivery.

233 Transport and Material Handling

1. The contractor must ensure that the stone is carefully stacked and protected during transit to minimise risk of damage.
2. Store stone on a clean, dry, free-draining surface and prevent contact with soil.
3. Fair-faced stone is to be stored in stacks on battens, protected with non-staining materials. Protect from moisture penetration and freezing with non-staining material. Stack stone to minimise handling as pieces are selected and transferred for building in.
4. Provide adequate lifting plant to unload and handle stones into position. Have due regard for H&S/CDM regulations and submit methodology for approval prior to commencing.

240 Stone

1. Standard: To BS EN 771-6
2. Supplier: Submit proposals - ideally from the original quarry if still in operation. Stone from only one quarry bed is to be used throughout.
3. Type: UK sourced sandstone - to S.E. details.
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. Preparation: Stone is to be seasoned at the time of delivery to suit the purpose for which it is to be used.

259 Brick Repair and Replacement

1. Individual facing bricks to be replaced where there is significant cracking or missing material such that the masonry is no longer performing within the wall. Refer to NBS Cl C41

260 Bricks (Repair and Replacement)

1. Standard: To BS EN 771-1.
2. Type: New to match existing – submit samples for approval prior to commencing works. Bricks to match existing as closely as possible in terms of strength, shape, dimensions, texture and colour. Bricks tested to BS EN 771-1:2011
3. Manufacturer: Submit proposals.
   3.1. Product reference: Submit proposals.
4. Size: To match existing

265 Salvaged and second hand bricks

1. Source: TBA with S.E. on individual basis. If agreed, Existing cracked bricks removed, cleaned, bonded with lime mortar and reused. Otherwise replace with matching reclaimed or new(see 260) - submit proposals.
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.

281 Fixings

1. Description: For stone capping

2. Type: Submit proposals.
3. Material: Non-ferrous 304 grade Austenitic stainless steel to BS 8221-2
4. Size, strength and number: As necessary to resist loads likely to occur during the life of the building, and to prevent lateral displacement or pulling apart of the construction.

Dismantling/ rebuilding - Not Used

Replacements and insertions

330 Preparation for replacement masonry

1. Defective material: Carefully remove to the extent agreed to sound hard surfaces. Do not disturb, damage or mark adjacent retained masonry.
   Cut out decayed stonework to accept new stones of minimum depth of 100 mm. Where necessary, stones are to be of sufficient depth to ensure that the existing pattern of joints is preserved and that carved or moulded stones are adequately bedded. In particular, quoins, jambs, copings and the like are to match existing sizes.
   Ensure that no damage occurs to existing adjacent stones that are to be left *in situ*. Techniques that cause excessive vibration should be avoided.
2. Piecing In: Where specified, cut out decayed stonework to specified extent to accept new stone of minimum depth 75 mm and otherwise as necessary to suit the location. Joint widths are to be kept extremely fine.
3. Propping: Stonework is to be adequately propped during the course of the works.
4. Existing metal fixings, frame members, etc.: Report when exposed.
5. Redundant metal fixings: Removal or retention TBC on site.
6. Recesses: Remove projections and loose material by brushing, or vacuuming.; leave joint surfaces in a suitable condition to receive replacement units. Protect from adverse weather if units are not to be placed immediately.
7. REMOVAL OF HARD POINTING OR FILL: Carefully cut out with chisel to reveal original joint or eroded stone surface. drill fine holes along centreline as required to loosen prior to chiselling again. Carry out localised trial and agree with architect prior to proceeding.

385 Laying replacement masonry units

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

Tooling/ dressing stone in situ

455 Descaling stone

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

458 Redressing stone

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

Mortar repairs

510 Preparation for mortar repairs

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

540 Applying mortar

1. Surfaces to receive mortar: Clean, and free from dust and debris. Dampen to control suction.
2. Applying coats: Build up in layers to specified thickness. Apply mortar firmly, ensuring good adhesion with no voids. Form a mechanical key to undercoats by combing or scratching to produce evenly spaced lines.
3. Allow each layer to achieve an initial set before applying subsequent coats. Prevent each layer from drying out rapidly by covering immediately with plastics sheeting and/ or dampening intermittently with clean water.
4. Finishing mortar coat: Form accurately to required planes/ profiles, and finish flush with adjacent masonry.
5. Protection: Protect completed repairs from adverse weather/strong sun until mortar has set - upto 14 days. Damp hessian or similar. Any frost-damaged work is to be cut out and replaced at the contractor's own expense.
6. Cleaning: Keep face work clean and free from staining during construction until completion. Clean off and leave stonework clean to the satisfaction of the architect as the scaffolding is taken down. tar or stains caused by the works on the face of the masonry must be completely removed before the mortar hardens.

Crack repairs/ ties/ reinforcement

610 Mortar repair of cracks

1. Description: Cracks over 1.5mm wide only
2. Mortar: As section Z21.
   - 2.1. Standard: BS EN 998-2
   - 2.2. Mix: TBC following site sampling - for pricing: 1:2 Quicklime:Sand
   - 2.3. Sand source/ type: TBC following site sampling - for pricing: lean, well graded sharp - Nostafield sand
3. Preparation: Clean out cracks to remove debris, dust and dirt. Dampen recesses, as necessary, to control suction.
4. Applying mortar: Press well into cracks so that they are fully filled. Ensure that mortar does not encroach upon exposed faces. Finish mortar flush with masonry face.
5. Other requirements: None

Grouting rubble filled cores - Not Used

Pointing/ repointing

810 Preparation for repointing

1. Existing mortar: Working from top of wall downwards, remove mortar carefully, without damaging adjacent masonry or widening joints, to a minimum depth of not less than 18-25mm.
   1.1. Loose or friable mortar: Seek instructions when mortar beyond specified recess depth is loose or friable and/ or if cavities are found.
2. Raked joints: Remove dust and debris.

820 Pointing

1. Description: Stonework and brickwork generally - refer to drawings.
2. Preparation of joints: Carefully brush away loose mortar Dampen joints, as necessary, to control suction, as cl 810.
3. Mortar: As section Z21.
   3.1. Standard: BS EN 998-2
   3.2. Mix: TBC following site sampling - for pricing: 1:2 Quicklime:Sand. To be slightly softer and more porous than the stone.
   3.3. Sand source/ type: TBC following site sampling. Clean, sharp and well graded. Colour and texture such that once dry the mortar matches the existing surrounding mortar.
4. Joint profile/ finish: To match existing
5. Other requirements: Non-hydraulic lime putty may be obtained from an approved supplier or prepared by the traditional method of slaking lump lime. Lime putty must comply with BS 890 and BS 6463. Hydrated non-hydraulic lime is *not* to be used unless specified. No additives of any sort shall be incorporated in the mortar.
6. Samples: Allow for 3 no. samples to be analysed of existing mortar prior to agreeing mixes for sample replacement mortars. Locations to be agreed with CA. These are to be presented as 'biscuit' samples on site for review by CA prior to proceeding. The contractor is to allow for blending and sieving sands from different sources, as necessary, to achieve appropriate grading, colour and texture.

840 Pointing with tools/ Irons

1. Preparation:: Using hand tools only, rake out all loose jointing material to a depth of not less than twice the joint width. All raking/cutting shall leave a clean, square face at the back of the joint, so as to provide optimum contact with the new mortar. Carefully clean out prepared face with bristle brush and flush with clean water - avoid unnecessary saturation, and work from top to bottom. Sound pointing must be left undisturbed. Where cement mortar is to be removed - the technique is to be agreed with the CA and site trials carried out to limit damage to surrounding stone.
2. Dampen:: Thoroughly dampen masonry prior to commencing repointing. Re-wet with hand spray as required - without leaving water to pool in prepared joint.
3. General: Press mortar well into joints using pointing tools/ irons that fit into the joints, so that they are fully filled. Press firmly to ensure full compaction across depth of joint. The contractor should be aware that it may be necessary for him to fabricate pointing irons to undertake the works. Begin at the top of the wall and work downwards. Avoid getting mortar on the finished faces of stonework - clean off immediately to prevent staining.
4. Face of masonry: Keep clear of mortar. Use suitable temporary adhesive tape on each side of joints where necessary. Finish joints neatly.

860 Brushed finish to joints

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

900 Protection and cleaning

1. -Protect works from direct sun and rain, well ventilated and moist min 10 deg C for min 4 weeks until face cured.
   - Turn back scaffold boards adjacent to brick faces at night and during heavy rain.
   -Remove any staining immediately.
   -Do not carry out works below 5deg and falling. Recommence at 3deg and rising.
   -Keep daily max/min temperature records on site during October-April (and beyond should frost be forecast).
   901 Completion
   - Give at least one weeks notice of completion to allow inspection prior to scaffold removal.
   - Remove all tools, plant and equipment and used materials and debris.

Ω End of Section

C49
Repairing/ renovating/ conserving metalwork

Summary

Details of amended clauses

No changes to show.

General

100 Scope

1. Dismantling and storage of iron stair balustrade.

105 Methodology

1. Dismantling and reinstatement of iron balusters.
   - 1.1. Conservation, repair and maintenance shall be as defined in BS 7913
   - 1.2. Full photographic survey of existing members prior to removal.
   - 1.3. Carefully label all members with corresponding locations on the timber stair frame - to facilitate reinstatement
   - 1.4. Carefully unscrew timber handrail and set aside for reinstatement.
   - 1.5. Carefully unscrew vertical cast iron balusters. Carefully transport to safe storage location within the building. Ensure adequate protection to prevent further damage. Label all items to enable reinstatement in the correct locations. Protect areas with barriers and warning tape.
     - 1.5.1. When removing fixings, ensure no damage is caused to the surrounding metalwork/timber so that reassembly is not compromised.
2. For balustrade to be reinstated in a new location:
3. Cleaning:
   - 3.1. Clean any loosely adhered paint from the surface. Sound well adhered coatings to be retained. Proceed on the assumption that lead content is present, and ensure necessary H&S precautions are included within methodology.
     A targeted approach is required to localised areas of damaged metalwork and/or poorly adhered surface coatings. Avoid bruising, distorting or fracturing the metal.
   - 3.2. Low pressure cleaning with water and brush.
   - 3.3. Immediately dry surface.
   - 3.4. Determine scope of repair work, finalise scope and methodology with conservation architect and CA prior to proceeding.
   - 3.5. Repairs:
     - 3.5.1. Scope - Repairs as necessary to enable balustrade to be reassembled.
     - 3.5.2. Repair using traditional forge techniques and the cast iron coping was stripped of paint using light bead blasting.
     - 3.5.3. Record all repair works both written and in photographic form - confirming details of methodology used.
   - 3.6. Reclaim balusters from other flights as required. However, where replica members are required:
     - 3.6.1. a) This can either be fabricated to match the existing exactly and require 1 no. existing spindle to be fully cleaned of existing paint layers in order to form a new mould.
     - 3.6.2. b) simple vertical steel balustrade members fabricated to match the existing sockets in the handrail and step frame. Painted to match existing predominant colour.
   - 3.7. Reinstate balustrade to 3rd floor.
     - 3.7.1. Splice reclaimed stair tread edge pieces to existing timber stair. Allow for replacement timber inserts where required to form new balustrade pockets.
     - 3.7.2. Reinstall balustrade, using replacement screws to match existing.
     - 3.7.3. Reinstall handrail, using replacement screws to match existing.

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: Contract administrator, conservation architect, conservation officer.
3. Timing: At least 10 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

140 STORAGE

1. Ensure frames are securely stored and kept clean and dry to prevent deterioration
2. Store vertically, and do not stack components. Ensure adequate support to prevent bending.
3. Protect from abrasion with padding

149 Wrought Iron and Mild Steel Repairs

1. Non-metallic cold repairs - two-pack epoxy adhesives may be used to make small non structural repairs, to fit small gaps. Repairs to be weaker than the original construction - i.e. sacrificial.
   - 1.1. Two-pack epoxy adhesives may be used to make small non structural repairs, to fit small gaps.
   - 1.2. Repairs to be weaker than the original construction - i.e. sacrificial. Steel plates to be thinner than wrought iron sections due to increased strength.
   - 1.3. Holes drilled into original component to be minimised, small and staggered to minimise weakening fabric.
2. Forge Welding and brazing - contractor to submit proposals
   - 2.1. Surfaces to be joined are to be cleaned and then fluxed prior to flame heating. Non-structural and lightly loaded repairs of wrought iron only.

200 MATERIALS

208 Metal Filling Adhesive

1. Scope: Filling holes and imperfections in wrought iron or steel to prevent water gathering.
2. Materials: www.upol.com - 2 part epoxy adhesive filler - P38 in accordance with manufacturer recommendations, or similar approved.
3. Instructions: Trial small area before wider execution

209 Adhesives

1. Supplier: https://www.belzona.co.uk/en/products/purpose/metal-repair.aspx
   Final specification and methodology to manufacturer recommendations.

213 Cleaning agents

1. Manufacturer: Johnstone's Trade Paints - a brand of PPG Industries
2. Contact details
   - 2.1. Address: Huddersfield Road
     Birstall
     Batley
     West Yorkshire
     WF17 9XA
   - 2.2. Telephone: +44 (0)1924 354354
   - 2.3. Web: https://ppgac.co.uk/
   - 2.4. Email: specifiers.acuk@ppg.com

3. Product reference: Cleaner and Degreaser.
4. Category: Water-borne, non-hazardous.
5. Form: Liquid.
6. Capacity: 5 L.

215 Solvent-borne metal primers

1. Manufacturer: Johnstone's Trade Paints - a brand of PPG Industries
2. Contact details
   2.1. Address: Huddersfield Road
   Birstall
   Batley
   West Yorkshire
   WF17 9XA
   2.2. Telephone: +44 (0)1924 354354
   2.3. Web: https://ppgac.co.uk/
   2.4. Email: specifiers.acuk@ppg.com
3. Product reference: Johnstone's Trade Quick Dry Zinc Phosphate Primer (Performance Coatings).
4. Colour:
5. Coverage: 11 m²/L.
6. Drying time: Touch-dry in two to four hours. Recoatable after 16 hours.
7. Volume solids: 34%.
8. VOC content: High (25–50%).
9. Film thickness: Dry: 35 µm. Wet: 75 µm.
10. Application method: Brush.
11. Capacity:

217 Solvent-based finishing coats

1. Manufacturer: Johnstone's Trade Paints - a brand of PPG Industries
2. Contact details
   2.1. Address: Huddersfield Road
   Birstall
   Batley
   West Yorkshire
   WF17 9XA
   2.2. Telephone: +44 (0)1924 354354
   2.3. Web: https://ppgac.co.uk/
   2.4. Email: specifiers.acuk@ppg.com
3. Product reference: Johnstone's Trade Steel & Cladding Semi-Gloss Topcoat (Performance Coatings)
4. Composition: Silicone alkyd.
5. Sheen: Semi-gloss.
6. Colour:
7. Coverage: 10 m²/L.
8. Drying time: Touch dry in 3–4 hours.
9. Volume solids: 50%.
10. Film thickness: Dry: 50 µm; Wet: 100 µm.
11. VOC content: High (25–50%).

12. Application method: Brush or roller.
13. Capacity: 5 L.

Structural repairs/ alterations - Not Used

Products

205 Sealant

1. Description: Sealant or flexible joining material as part of metal framed assembly
2. Type: Red or white lead paste from red oxide and boiled linseed oil , or High quality polysulphide mastic (Arbo or similar approved. Product should meet BS EN ISO 11600 F 25 LM / BS 4254:1983.

480 Screws

1. Description: Screws to match existing profile.
2. Standard: As section Z20.
3. Material: Stainless steel grade 316
4. Tensile strength (minimum):
5. Finish as delivered:
6. Notes: Tighten by hand.

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.

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.

640 Prototypes

1. General: Prepare one of each of the following items and arrange for inspection before starting repetitive fabrication: Baluster.

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.

750 Cleaning dirty or stained wood

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

760 Repair of members – cutting out members

1. Extent of timber removal: Cut out full cross section of member where wood is defective or decayed, plus 50 mm of sound wood.

2. Joint profile:

860 Moisture content checking

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

Completion

910 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.

Ω End of Section

C51
Repairing/ renovating/ conserving timber ADDED

Summary

Details of amended clauses

This section has been added to the specification.

General

110 Inspection ADDED

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: Contractor's representative
3. Timing: At least 7 days before starting each section of work
4. Instructions issued during inspection: Confirm in writing, with drawings and schedules as required, before commencing work

150 Timber procurement ADDED

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: In accordance with UK Government Timber Procurement Policy (UKTPP) i.e. FSC, GiB or PEFC
   3.1. Other evidence:

160 Timber supplier ADDED

1. Supplier: Contractor's choice

Structural repairs/ alterations

220 Timber section repair – internal reinforcement ADDED

1. Defective timber: Cut out
2. Replacement timber: The timber species, moisture content, and grain direction of the new timber need to be carefully matched with the old to avoid differential movement.
   -When replacing a whole component, quarter sawn timber is to be used to minimise movement with environmental changes.
   -For clear-finished joinery, the colour of the repair also need to be matched, and the new piece fitted to the old with a hairline joint.
   -Timber to be free from decay, holes, splits, shakes and knots in accordance with BS 1186 : Part 1 Class 1 and with a moisture content of 10% to 12%.
   For structural repairs, generally to BS EN 942.
   2.1. Sectional profiles of mating surfaces: To match cut ends of existing timber.
   2.2. Repair technique: Traditional joinery splicing.
   Split boards - inject glue and clamp, reinforce end with bridging piece screwed in from below - use slotted holes to allow for movement.
   Damaged edges - Cut out damage and insert new dovetail piece - adhesive fix, grain orientation to match existing. End of board reinforced with bridging piece fixed with screws and slotted holes.
   Damaged corners - Glue fix replacement piece. Reinforce joint with biscuits or loose Tongue.

Loseboards - fix with stainless steel screws.
Ensure timber ends are fully supported. Relocate damaged timber if required, to suit existing support locations. Where adequate support cannot be given, utilise steel reinforcement plates to the underside.

2.3. Holes/ slots for reinforcement

2.3.1. Location: Submit proposals.

2.3.2. Size: Submit proposals.

3. Grout: Adhesive (internally)– traditional protein glue, **Titebond III Ultimate Wood Glue** or epoxy resin (Timbabuild by Chemfix or similar approved). **CHEMFIX PRODUCTS LTD,** Mill Street East, Dewsbury, West Yorkshire
WF12 9BQ**,** Telephone +44 (0)1924 453886, Fax +44 (0)1924 431658 **www.chemfix.co.uk**

230 Member strengthening – external reinforcement ADDED

1. Reinforcement: To S.E. details

1.1. Size: To S.E. details

2. Fixing to existing timber: To S.E. details

240 End repairs – lap ADDED

1. Defective timber: Cut out
2. Lap member: To S.E. details

2.1. Size: To S.E. details

3. Fixing to existing timber: To S.E. details

250 Timber section repairs – external splice ADDED

1. Defective timber: Cut out to clean, regular profile.
2. Replacement timber: To match existing (European Oak or slow grown pine).
3. Splice plates

3.1. Material: To S.E. details

3.2. Size: To S.E. details

4. Fixing to existing timber: To S.E. details

Products

330 Structural hardwood (graded direct to strength class) ADDED

1. Description: *FOR STRUCTURAL USE GENERALLY* - To S.E. details
2. Moisture content (maximum) at time of installation: 10-15%. To closely match that of existing timber - take measurements.

360 Softwood for joinery repairs ADDED

1. Description: Generally
2. Species: To match existing (slow grown pine).
3. Quality: Generally to BS EN 942; free from decay and insect attack (except pinhole borers).

3.1. Appearance class: Class J30 or better.

4. Treatment: C7 preservative. Fire retardant if to remain exposed.
5. Moisture content on delivery: 10-15%, To match existing

370 Hardwood for joinery repairs ADDED

1. Description: To flooring and windows.
2. Species: To match existing (European Oak).
3. Quality: Generally to BS EN 942; free from decay and insect attack (except pinhole borers).
   3.1. Appearance class: Class J30 or better.
4. Treatment: C7 preservative. Fire retardant if to remain exposed.
5. Moisture content on delivery: 10-15%, To match existing

470 Nails ADDED

1. Description: *FOR GENERAL USE*
2. Standard: As section Z20.
3. Type: Annular ringed shank and diamond point into pre-drilled holes.
4. Material: Steel.
   4.1. Strength (minimum): Ultimate tensile strength 600 N/mm²
5. Finish as delivered: Sherardized

480 Screws ADDED

1. Description: *FOR GENERAL USE*
2. Standard: As section Z20.
3. Material: Stainless steel
4. Tensile strength (minimum): 550 N/mm²
5. Finish as delivered: Sherardized

Execution

600 Workmanship ADDED

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 ADDED

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 ADDED

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

650 Dimensions generally ADDED

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 ADDED

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 ADDED

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 ADDED

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 ADDED

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 ADDED

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.

710 Reuse of timber sections/ wood components ADDED

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: *Refurbish and repair as necessary*
   - 1.2. Storage: Protect against damage, and store until required.
     - 1.2.1. Storage location: On site
2. Reuse: Adapt sections/ components, as necessary, and install in agreed locations.

720 Temporary removal and reinstatement of fittings/ fixtures ADDED

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. Storage: Protect against damage, and store until required.
     - 1.2.1. Storage location: On site
   - 1.3. Reinstatement: Refit in original locations using original installation methods.
2. Items unsuitable or not required for reuse: Obtain instructions regarding disposal.

750 Cleaning dirty or stained wood ADDED

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.

780 Repair of distorted timber members ADDED

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

850 Glued joints ADDED

1. Adhesive: See above.
   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:

860 Moisture content checking ADDED

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 ADDED

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 ADDED

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 ADDED

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

K21
Wood strip/ board fine flooring/ linings

Summary

Details of amended clauses

No changes to show.

Types of flooring/ lining

110 Wood flooring

1. Description: Reinstatement to basement floor
2. Substrate: Brick sleeper walls
3. Vapour control layer: 1000 gauge polyethylene sheet
4. Strips/ Boards
   - 4.1. Standard: To BS EN 14342.
     - 4.1.1. Evidence of compliance: Submit.
   - 4.2. Wood species: European Oak - To match existing
   - 4.3. Appearance class/ Grade: Rustic
   - 4.4. Finished face width: To match existing
   - 4.5. Finished thickness: To match existing
   - 4.6. Edges: Side and end matched
   - 4.7. Moisture content at time of fixing: To suit unheated space.
5. Method of fixing/ joining: Face nailed

General/ preparation

210 Workmanship generally

1. Moisture content of timber supports: 12-14%.
2. Methods of fixing and fasteners: As section Z20 where not specified.
3. Protection: Protect from dirt, stains and damage using suitable coverings and boards laid as the work proceeds.

220 Environmental conditions

1. General requirements prior to starting work specified in this section: Building weathertight, wet trades completed and affected areas dried out.
2. Temperature and humidity before, during and after installing strips/ boards: Maintained at levels approximating to those which will prevail after building is occupied.

230 Heating system

1. Operating mode:
2. Room temperatures for which the system has been designed:
3. Operation up to Completion:

250 Fixtures

1. Fixtures around which strip flooring is to be fixed: Installed before starting work specified in this section.

260 Dryness of concrete/ screed substrates for flooring

1. Relative humidity above substrate when tested with a hygrometer to BS 8201, Appendix A (maximum): 75%.
   - 1.1. Test points: All corners, around perimeter, and random points over area being tested.
2. Drying aids: Turned off for not less than four days before testing.

270 Strip/ Board moisture content testing

1. Test regime and equipment: Submit proposals.
2. Test results: Submit record of tests and results.

280 Existing wood flooring

1. Condition: Boards securely fixed and acceptably level. Protruding fasteners punched in or countersunk.

Fixing/ finishing

310 Vapour control layer installation

1. Location: Immediately below …… .
2. Installation
   2.1. Joints: Overlapped by minimum 150 mm and sealed with vapour resistant tape.
   2.2. Treatment of membrane at perimeter of flooring and upstands: Turned up and sealed to top face of flooring using a method approved by the strip/ board manufacturer.
3. Excess material: Trimmed off neatly after fixing skirtings/ cover beads.
4. Condition of membrane before laying flooring: Clean and dry.

330 Fixing battens

1. General: Battens spaced evenly, packed or adjusted as necessary to give a true, level, finished surface, and fixed securely.

335 Treated timber

1. Surfaces exposed by minor cutting and drilling: Treated with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.

350 Fixing strips/ boards

1. Strips/ Boards: Fixed securely to each support with flat, true surfaces free from undulations, splits, hammer marks, scratches and protruding fastenings.
2. Movement of timber: Allowed for when positioning strips/ boards and fastenings to prevent cupping, springing, opening of joints or other defects.
3. Heading joints (where permitted): End matched, butted and, where applicable, positioned centrally over supports and distributed across the flooring to achieve a random effect.
4. Surface fixing:

360 Expansion provision

1. Expansion gaps
   1.1. Edges of flooring: Parallel to lie of strips/ boards and 1.5-3mm mm wide.
   1.2. Ends of flooring: 10 mm wide.
2. Spacer blocks and debris: Removed before fixing skirtings/ cover fillets.
3. Intermediate expansion/ movement joints: Formed as recommended by flooring manufacturer/ supplier.

370 Finish to flooring

1. Exposed fastener heads: Punched or set below surface and filled with stopping to match wood.
2. Strips/ Boards: Sanded to give a clean, smooth and flush surface free from score marks.

Ω End of Section

M10
Cement based levelling/ wearing screeds

Summary

Details of amended clauses

No changes to show.

Types of screed

110 Bonded cement:sand levelling screeds

1. Description: To existing concrete floor
2. Substrate: In situ concrete slab
3. Screed construction: Fully bonded.
4. Thickness
   4.1. Nominal: To manufacturer recommendations
   4.2. Minimum: 25 mm.
   4.3. Maximum: 40 mm.
5. Mix
   5.1. Proportions (cement:sand): To manufacturer recommendations
6. In situ crushing resistance (ISCR) category: B (4 mm maximum indentation)
7. Flatness/ Surface regularity class: SR1
8. Finish: Smooth floated, as clause 530
   8.1. To receive: Varies - to suit cat B tenant requirements.

Generally/ preparation

210 Suitability of substrates

1. General
   1.1. Suitable for specified levels and flatness/ regularity of finished surfaces. Consider permissible minimum and maximum thicknesses of screeds.
   1.2. Sound and free from significant cracks and gaps.
2. Concrete strength: In accordance with BS 8204-1, Table 2.
3. Cleanliness: Remove plaster, debris and dirt.
4. Moisture content: To suit screed type. New concrete slabs to receive fully or partially bonded construction must be dried out by exposure to the air for minimum six weeks.

215 Surface hardness of substrates to receive polymer modified wearing screeds

1. General: Substrates must restrain stresses that occur during setting and hardening of wearing screeds.
2. Test for surface hardness: To BS EN 12504-2 using a rebound hammer with compliance values as follows:
   2.1. Rebound hammer value (minimum)
      2.1.1. Screed thickness 15 mm or less: 25.
      2.1.2. Screed thickness greater than 15 mm: 30.
3. Report: Submit details of areas where substrate surface hardness does not comply with these values.

220 Proprietary levelling/wearing screeds

1. General: Materials, mix proportions, mixing methods, minimum/ maximum thicknesses and workmanship must be in accordance with recommendations of screed manufacturer.
2. Standard:

260 Fully bonded construction

1. Preparation: Generally in accordance with BS 8204-1.
2. Removing mortar matrix: Shortly before laying screed, expose coarse aggregate over entire area of hardened substrate.
3. Texture of surface: Suitable to accept screed and achieve a full bond over complete area.
4. Bonding coat: Manufacturer's standard

Batching/ mixing

302 Cements

1. Cement types: In accordance with BS 8204-1, clause 5.1.3.

305 Aggregates

1. Sand: To BS EN 13139.
   1.1. Grading limits: In accordance with BS 8204-1, Table B.1.
2. Coarse aggregates for fine concrete levelling screeds
   2.1. Standard: To BS EN 12620.
   2.2. Designation: 4/10.
3. Lightweight aggregates: In accordance with BS 8204-1, Annex A.

330 Mixing

1. Water content: Minimum necessary to achieve full compaction, low enough to prevent excessive water being brought to surface during compaction.
2. Mixing: Mix materials thoroughly to uniform consistency. Mixes other than no-fines must be mixed in a suitable forced action mechanical mixer. Do not use a free fall drum type mixer.
3. Consistency: Use while sufficiently plastic for full compaction.
4. Ready-mixed retarded screed mortar: Use within working time and site temperatures recommended by manufacturer. Do not retemper.

335 In situ crushing resistance (ISCR)

1. Standards and category: In accordance with BS 8204-1, table 4.
   1.1. Testing of bonded and unbonded screeds: To Annex D.
   1.2. Testing of floating levelling screeds: To Annex E.

340 Adverse weather

1. Screeds surface temperature: Maintain above 5°C for a minimum of four days after laying.
2. Hot weather: Prevent premature setting or drying out.

Laying

345 Level of screed surfaces

1. Permissible deviation: (allowing for thickness of coverings) ±7 *mm from datum*.

355 Flatness/ Surface regularity of floor screeds

1. Standard: In accordance with BS 8204-1, Table 5.
2. Test: In accordance with BS 8204-1, Annex C.
3. Sudden irregularities: Not permitted.

375 Compaction of screeds

1. General: Compact thoroughly over entire area.
2. Screeds over 50 mm thick: Lay in two layers of approximately equal thickness. Roughen surface of compacted lower layer then immediately lay upper layer.

405 Joints in levelling screeds generally

1. Laying screeds: Lay continuously using 'wet screeds' between strips or bays. Minimize defined joints.
2. Daywork joints: Form with vertical edge.

440 Crack inducing grooves in levelling screeds

1. Groove depth: At least half the depth of screed.
2. Cutting grooves: Straight, vertical and accurately positioned. Select from the following:
   2.1. Trowel cut as screed is laid.
   2.2. Saw cut sufficiently early after laying to prevent random cracking.

460 Strip movement joints

1. Description: Submit proposals. FOR DOOR THRESHOLDS
2. Manufacturer: Contractor's choice
   2.1. Product reference: Contractor's choice
   2.2. Size: As required.
3. Installation: Set securely into screed to exact finished level of floor. Extend joints through to substrate.
   3.1. Secure fixing to substrate: To manufacturer's recommendation.

Finishing/curing

510 Finishing generally

1. Timing: Carry out all finishing operations at optimum times in relation to setting and hardening of screed material.
2. Prohibited treatments to screed surfaces
   2.1. Wetting to assist surface working.
   2.2. Sprinkling cement.

530 Smooth floated finish

1. Finish: Even texture with no ridges or steps.

650 Curing

1. General: Prevent premature drying. Immediately after laying, protect surface from wind, draughts and strong sunlight. As soon as screed has set sufficiently, closely cover with polyethylene sheeting.
2. Curing period (minimum): Keep polyethylene sheeting in position for: *period recommended by screed manufacturer.*.
3. Drying after curing: Allow screeds to dry gradually. Do not subject screeds to artificial drying conditions that will cause cracking or other shrinkage related problems.

Ω End of Section

M20
Plastered/ rendered/ roughcast coatings

Summary

Details of amended clauses

No changes to show.

Types of coating

310 Lime:sand

1. Description: Localised repair and reinstatement to thick coat wall plaster.
2. Substrate: Existing brickwork
   2.1. Preparation: - Rake out mortar joints to a depth of 10mm where loose/friable.
   - Re point any deep recesses using a weaker mix of Lime putty mortar than that specified for the render.
   - Thoroughly clean down the substrate to ensure all loose particles and dirt are removed.
   - Thoroughly dampen down the substrate before application.
   - For particularly indented substrates, provide a dubbing out coat of lime putty
3. Lime manufacturer: Contractor's choice
   3.1. Application: Application is to take place in three coats.
   Undercoat – apply render coat to dampened down and prepared surface.
   Render coat is to be reinforced with hair well beaten in, at a rate of 4.5 kg/m³.
   1:2.5 lime putty:sand
   Where haired lime plaster is to be applied to a masonry background, the plaster relies largely upon suction for its bond, so it does not need as much hair as a plaster which is to be applied to lath. Hair should be added to plaster just before spreading to avoid disintegration due to lime alkelinity.
   Coat to be nominally 10mm thick and no more than 20mm thick. Undercoat is to be cross keyed with a lath scratcher or single lath to form a pattern of 25mm – 35mm diamonds.
   The scratch coat should then be left to dry and shrink before attempting to apply the next coat. In most circumstances it will need two weeks to dry out, but can take up to four weeks in some cases . Cover with hessian were exposed such as adjacent to open windows to prevent drying out too quickly.
   hand spray to lightly Dampen down before application of next coat.
   Float Coat – 1: 3 lime putty:sand.
   Float coat to be nominally 6mm max 15mmthick. Use floating rule to level surface.
   Check for shrinkage over the first 2 days curing. If any shrinkage cracks appear, dampen down, scour back and re-key to the affected area.
   Once it has begun to stiffen up, consolidate by 'rubbing up' the surface using a wooden float to counteract shrinkage – 1-2 times on the day of application. It may be necessary on the following day as well. Sprinkling the surface with water, using a brush, assists the circular rubbing action if it has dried out too much.
   Once the surface has been compacted, rub devil float over the surface to form a key for the finish coat. Leave for 7 days and dampen down before application of next coat.
   Finishing Coat – apply over the Float Coat after it has been allowed to set for 3-7 days to achieve a smooth finish and finished using a wooden float, to be nominally 3mm thick. 1:1 lime putty:sand unless samples suggest otherwise. Apply in 2-3 thin layers.
   When the work is firm enough it should then be scoured to compact and consolidate the surface using a straight grain float. Apply water to edges of existing plaster to control suction. Wood/sponge float finish.
   Apply all renders firmly to exclude any air and excessive moisture. Suction to be carefully controlled at all times. Re-work coats as necessary to control shrinkage and to achieve a smooth finish in the Finishing Coat.
   3.2. Materials:
      3.2.1. Sand: Sands for lime mortars/plasters must be washed, well- graded, sharp and with the largest particles being just under 1/3 the thickness of the joint bed. All sand shall be to BS 1200. Sand to be sourced from a local quarry to the satisfaction of the Architect.
      3.2.2. Lime: mature slaked lime putty Lime putty shall be made from quick lime which has been freshly burned
      and properly slaked, run to putty and matured for not less than two weeks. Lime putty

made from dry hydrate or an acetylene by-product (Lamotex)
is not acceptable. Before ordering the contractor is to gain confirmation that the putty has been prepared from Quicklime (Lump Lime).

3.2.3. Water: Water for the works shall be clean and fresh without pollutants.

310 Lime:sand Type A

1. Description: Localised repair and reinstatement to existing lath and plaster ceilings and lightwell partitions.
2. Substrate: Timber joists/studs
   2.1. Preparation: Plaster key and laths are to be inspected and checked throughout the specified area. Allow time for detailed inspection by the Architect to enable final instructions to be issued for the work.-
   -All timbers including joists and laths are to be inspected for decay by specialist timber preservation company and a report issued to the Architect for consideration of further treatment.
   -Where existing lath and plaster is poorly adhered or damaged, carefully remove. Remove sufficient perimeter plaster to facilitate repair/installation of laths. Clean down reveals to surround framing including removal of any remaining nail fixings.
3. Lime manufacturer: Contractor's choice
   3.1. Application: Fix new riven oak plaster laths to support structure. New laths should be spaced 1cm apart. Where existing laths are broken or decayed, these are to be cut out with a hacksaw. blade and snapped off
   Allow for pre-drilling both the laths, and supports where applicable. The contractor is to determine the final nail type, gauge and length in accordance with BS 5534 to suit site exposure and withdrawal resistance.
   Setting out: Align parallel wall.
   Lath length (minimum): Sufficient to span over three supports.
   Joints in length: Square cut. Butt centrally on supports. Joints must not occur more than once in any group of four laths on one support. Where the batten gauge is less than 200mm, joints must not occur more then three times within twelve consecutive laths on one support.
   Additional battens: Provide additional battens and ridge and eaves to allow double slating, and where unsupported laps in underlay occur between battens, where applicable.
   Nails are to be positioned down the middle of each lath and rafter, and at batten ends are to be driven in at a slight angle towards the centre of the rafter, to minimise the risk of splitting the rafters, and improve pull-out holding. Any laths split during nailing are to be replaced.
   Old plaster and laths are to be thoroughly cleaned and treated with a thin coating of PVA solution (1 part PVA to 10 parts / water) in order to control suction and prevent rapid removal of water from the new plaster.
   3.2. Coats: Render coat lime plaster (9mm) 1 part lime putty 3 parts sand. Coarse stuff is to be reinforced with hair well beaten in, at a rate of 7 kg/m3. Render coat is to be cross keyed with a lath scratcher.
   Floating coat (6mm) 1 part lime putty to 3 parts sand reinforced with hair as above. Floating coat to be keyed with a devils float.
   Setting coat (3mm); 3 parts lime putty to 2 parts sand setting coat is to be laid on with a laying on trowel, trowelled and floated and made compact by scouring with a cross grained wood float lubricated with water to prevent shrinkage cracking.
   3.3. Materials:
      3.3.1. Fixings: grade 304 stainless steel annular ring shank nails to BS EN 1008-3, minimum 8 gauge (2.65mm dia) and 50mm long.
      3.3.2. Laths: Laths are to be riven from straight-grained oak heartwood, approximately 6mm x 32mm. Laths are to be individually inspected for straightness, knots, wanes, fissures and splits prior to use. Untreated to prevent leaching into plasterwork.
      3.3.3. Plaster: Plaster - mature slaked lime putty Lime putty shall be made from quick lime which has been freshly burned and properly slaked, run to putty and matured for not less than two weeks. Lime putty made from dry hydrate or an acetylene by-product

(Lamotex)
is not acceptable. Before ordering the contractor is to gain confirmation that the putty has been prepared from Quick Lime.
Sand – well graded, sharp aggregate ranging from up to 3mm through to fines.
Hair reinforcement :
Hair should be strong, long and free from grease or other impurities. Well mixed with no clumps of hair.

General

424 Special protection of historic plasterwork

1. General: Prevent damage and disturbance to retained plasterwork.
2. Protection methods: Submit proposals.

Materials and marking of mortar

443 Lime for cement gauged mortars

1. Standard: To BS EN 459-1.
   1.1. Type: CL 90S.

481 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/L.
2. Maturation period before use (minimum): 90 days.
3. Storage: Prevent drying out or wetting: Protect from frost.

492 Hair reinforcement

1. Manufacturer/ Supplier: Contractor's choice
   1.1. Product reference: Contractor's choice
2. Proportions (approximate): 5 kg hair to 1 m^3 of coarse stuff.
3. Condition: Clean, free from grease and other impurities. Well teased before adding to the mix.
4. Distribution: Evenly throughout with no balling into lumps.
5. Storage period for haired mortar (maximum): Four weeks.

495 Mixing

1. Render mortars (site prepared)
   1.1. Batching: By volume. Use clean and accurate gauge boxes or buckets.
   1.2. Mix proportions: Based on damp sand. Adjust for dry sand.
   1.3. Lime:sand: Mix thoroughly. Allow to stand, without drying out, for at least 16 hours before using.
2. Mixes: Of uniform consistence and free from lumps. Do not retemper or reconstitute mixes.
3. Contamination: Prevent intermixing with other materials.

497 Cold weather

1. General: Do not use frozen materials or apply coatings on frozen or frost bound substrates.
2. External work: Avoid when air temperature is at or below 5°C and falling or below 3°C and rising. Maintain temperature of work above freezing until coatings have fully hardened.

3. Internal work: Take precautions to enable internal coating work to proceed without detriment when air temperature is below 3°C.

Preparing substrates

510 Suitability of substrates

1. Soundness: Free from loose areas and significant cracks and gaps.
2. Cutting, chasing, making good, fixing of conduits and services outlets and the like: Completed.
3. Tolerances: Permitting specified flatness/ regularity of finished coatings.
4. Cleanliness: Free from dirt, dust, efflorescence and mould, and other contaminants incompatible with coatings.

527 Raking out for key

1. Joints in existing masonry: Rake out to a depth of 13 mm (minimum).
    1.1. Dust and debris: Remove from joints.

531 Roughening for key

1. Substrates: Roughen thoroughly and evenly.
    1.1. Depth of surface removal: Minimum necessary to provide an effective key.

536 Splatterdash key

1. Materials
    1.1. Cement: To BS EN 197-1.
    1.2. Sand: Clean, coarse.
    1.3. Admixtures:
2. Mix proportions (cement:sand): 1:1.5-2.
3. Consistency: Thick slurry, well stirred.
4. Application: Throw onto dampened background and leave rough.
    4.1. Thickness: 3-5 mm.
5. Curing: Controlled to achieve a firm bond to substrate.

538 Stipple key

1. Materials
    1.1. Cement: To BS EN 197-1.
    1.2. Sand: Clean, coarse.
    1.3. Admixture:
2. Mix proportions (cement:sand): 1:1.5–2.
3. Consistency: Thick slurry, well stirred.
4. Application: Brushed and stippled to form deep, close textured key.
5. Curing: Controlled to achieve a firm bond to substrate.

541 Bonding agent application

1. General: Apply evenly to substrate to achieve effective bond of plaster/ render coat. Protect adjacent joinery and other surfaces.

549 Zinc oxychloride plaster

1. Manufacturer:

1.1. Product reference:

2. Application
   2.1. Coverage: Extend beyond infected area by not less than 300 mm.
   2.2. Thickness (minimum): 6 mm.
   2.3. Keying: Do not penetrate through to substrate when cross scratching for key.

551 Removal and renewal of existing plaster/ render

1. Location and extent: Agree, at least on a provisional basis, before work commences. Minimize extent of removal and renewal.

566 Removing defective existing plaster

1. Plaster for removal: Detached, soft, friable, badly cracked, affected by efflorescence or otherwise damaged.
   1.1. Hollow, detached areas: Remove where area of detachment is more than 300x300mm
2. Stained plaster: Submit proposals
3. Removing defective plaster. Cut back to a square, sound edge.
4. Faults in substrate (structural deficiencies, damp, etc.): Submit proposals.
5. Cracks
   5.1. Fine hairline cracking/ crazing: Leave.
   5.2. Other cracks: *Cracks 1–2 mm wide: Scribe ready for filling with nonhydraulic lime putty.*
6. Dust and loose material: Remove from exposed substrates and edges.

568 Existing damp affected plaster/ render

1. Plaster affected by rising damp: Remove to a height of 300 mm above highest point reached by damp or 1 m above dpc, whichever is higher.
2. Perished and salt contaminated masonry
   2.1. Mortar joints: Rake out.
   2.2. Masonry units: Submit proposals.
3. Faults in substrate (structural deficiencies, additional sources of damp, etc.): Submit proposals.
4. Drying out substrates: Establish drying conditions. Leave walls to dry for as long as possible before plastering.
5. Dust and loose material: Remove from exposed substrates and edges.

584 Record castings

1. Timing: Make castings before commencing repair work, to enable accurate reproductions to be made.
2. Items for casting: Cornice
3. Identification: Mark clearly to identify original location.

587 Replacing timber laths

1. Defective plaster and laths: Remove. Prevent disturbance to adjacent sound plaster.
   1.1. Defective laths: Cut back to supporting timbers.
   1.2. Cavities: Keep clear of debris.
2. Supports for laths: Sound and firmly fixed. Provide additional supports where necessary.
3. New lathing:

589 Refixing sound timber laths through plaster

1. Application of repair: To loose but otherwise sound laths on sound framework.
2. Method: Cut out plaster patches to sound, undercut edges. Screw laths back to framework using screws and washers.
   - 2.1. Screws: Brass or stainless steel.
   - 2.2. Washers: Metal to match screws.
     - 2.2.1. Inner washer: *25 mm diameter.*
     - 2.2.2. Outer washer: *38 mm diameter; mesh size 1.5 mm.*
   - 2.3. Fixing centres: Submit proposals.
3. Replastering: As above.
   - 3.1. Finish: Flush with existing.

592 Consolidating existing timber lath and plaster ceilings

1. General: Achieve effective consolidation of plasterwork to supporting structure.
2. Methods: From above. Submit proposals.

Backings/ beads/ joints

600 Additional framing supports for backings

1. Framing: Accurately position and securely fix to give full support to fixtures, fittings and service outlets.
2. Support board edges and perimeters: As recommended by board manufacturer to suit type and performance of board.

626 Timber lathing

1. Type/ Section size: To match existing
   - 1.1. Quality of timber: Free from decay, insect attack (except pinhole borers), splits, shakes. No knots wider than half the width of the section.
2. Preservative treatment: *Submit proposals*
3. Moisture content at time of installation (maximum): 16%.
4. Installation: Space laths 8-10 mm apart in straight lines.
   - 4.1. Joints: 3 mm wide centred over supports. Stagger at not more than every eighth lath.
   - 4.2. Nails: At every support.
     - 4.2.1. Type: 25 mm (minimum) galvanized clout nails
   - 4.3. Counter laths: To faces or sides of timber supports wider or deeper than 75 mm.

646 Crack control at junctions between dissimilar solid substrates

1. Locations: Where defined movement joints are not required. Where dissimilar solid substrate materials are in same plane and rigidly bonded or tied together.
2. Crack control materials
   - 2.1. Isolating layer: Building paper to BS 1521.
   - 2.2. Metal lathing:
3. Installation: Fix metal lathing over isolating layer. Stagger fixings along both edges of lathing.
4. Width of installation over single junctions
   - 4.1. Isolating layer: 150 mm.
   - 4.2. Lathing: 300 mm.

5. Width of installation across face of dissimilar substrate material (column, beam, etc. with face width not greater than 450 mm)
    5.1. Isolating layer: 25 mm (minimum) beyond junctions with adjacent substrate.
    5.2. Lathing: 100 mm (minimum) beyond edges of isolating layer.

Mouldings/ decorative plasterwork

680 Fibrous plaster mouldings

1. Description: Generally - beneath new ceiling.
2. Type: *Reproduction of existing*
3. Noggings, bearers, etc. to support mouldings: Accurately position and securely fix.
4. Installation: True to line and level.
    4.1. Fixing: Submit proposals.
    4.2. Framing, fixing points and joints: Reinforce.
5. Finishing: Smooth, to correct profile and with flush joints.

692 Refixing existing plaster mouldings

1. Substrates: Accurate, secure and clean.
    1.1. Suction control: Dampen or apply suitable sealer.
2. Installation: True to line and level with abutting mouldings, on solid bed of gypsum based adhesive.
    2.1. Additional fixings: *Stainless steel dowels located into rear of moulding and substrate*
3. Finishing: Smooth, to correct profile and with flush joints.
    3.1. Filler: Plaster of Paris

695 Reproduction of existing plaster mouldings

1. Moulds and casts generally: Prepare moulds from original plaster face. Reproduce profiles and details accurately.
2. Quantity of moulds: Sufficient to complete the required number of casts and maintain a consistent appearance.
3. Casting material: Plaster of Paris.
4. Inserts: As necessary to give strength and rigidity to the mouldings and provide secure fixings.

697 Repairing cracks/ steps in plaster mouldings

1. Preparation: Remove applied ornament and keep for reuse. Cut back plasterwork each side of cracks. Replace defective timber laths. Remove dust.
    1.1. Suction control: Dampen repair area or apply suitable sealer.
2. Plaster: Follow, and finish flush with, existing moulding profile.
    2.1. Undercoat: *Gypsum gauged coarse stuff compatible with existing*
        2.1.1. Key to receive final coat.
    2.2. Final coat: *1:1 gypsum:lime putty.*
3. Applied ornaments: Fix accurately using gypsum based adhesive.

Internal plastering

710 Application generally

1. Application of coatings: Firmly and in one continuous operation between angles and joints. 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.

715 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.

718 Junction of new plasterwork with existing

1. New plasterwork: Finish flush with original face of existing plasterwork to form a seamless junction.

720 Dubbing out

1. General: Correct substrate inaccuracies.
2. New smooth dense concrete and similar surfaces: Dubbing out prohibited unless total plaster thickness is within range recommended by plaster manufacturer.
3. Thickness of any one coat (maximum): 10 mm.
4. Mix: As undercoat.
5. Application: Achieve firm bond. Allow each coat to set sufficiently before the next is applied. Cross scratch surface of each coat.

725 Undercoats generally

1. General: Rule to an even surface. Cross scratch to provide a key for the next coat.
2. Undercoats on metal lathing: Work well into interstices to obtain maximum key.
3. Undercoats gauged with Portland cement: Do not apply next coat until drying shrinkage is substantially complete.

742 Thin coat plaster

1. Preparation for plasters less than 2 mm thick: Fill holes, scratches and voids with finishing plaster.

777 Smooth finish

1. Appearance: A tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks. Avoid water brush, excessive trowelling and over polishing.

External rendering

885 Curing and drying nonhydraulic 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.

886 Plaster and lath mesh reinforcement

1. General: Prior to installation of new fire and acoustic rated ceilings beneath existing lath and plaster ceilings.
2. Material: Stainless steel mesh - to S.E. details and in accordance with fire certificate for floor build up.
3. Application: To S.E. details.

Ω End of Section

M60
Painting/clear finishing

Summary

Details of amended clauses

No changes to show.

Coating systems

110 Breathable Plaster Coating Type B

1. Description: Breathable finish to existing and repaired lime plaster and new plasterboard to external walls.
2. Manufacturer: Keim Mineral Paints Ltd
   2.1. Contact details
      2.1.1. Address: Santok Building
      Deer Park Way
      Donnington Wood
      Telford
      Shropshire
      TF2 7NA
      2.1.2. Telephone: +44 (0)1952 231250
      2.1.3. Web: https://www.keim.com/en-gb/
      2.1.4. Email: sales@keimpaints.co.uk
   2.2. Product reference: KEIM Innostar
3. Surfaces: To existing and repaired lime plaster
   3.1. Preparation: Ensure surfaces are clean and dry
4. Initial coats: None
5. Number of coats:
6. Undercoats: As recommended by manufacturer
   6.1. Number of coats:
7. Finishing coats: KEIM Innostar
   7.1. Number of coats: 1

150 Eggshell/Satin Type A

1. Description: For internal woodwork
2. Manufacturer: Dulux Trade, brand of AkzoNobel
   2.1. Contact details
      2.1.1. Address: AkzoNobel Decorative Paints
      Wexham Road
      Slough
      Berkshire
      SL2 5DS
      2.1.2. Telephone: +44 (0)333 222 7070
      2.1.3. Web: www.duluxtradepaintexpert.co.uk
      2.1.4. Email: project.support@akzonobel.com
   2.2. Product reference: Dulux Trade Diamond Eggshell
3. Composition: Acrylic copolymer.
4. Sheen: Eggshell.
5. Colour: TBC
6. Form: Liquid.
7. Surfaces: Preprimed and sealed or Previously decorated
   7.1. Preparation: As Clause 400 or 440 as appropriate
8. Initial coats: As recommended by manufacturer
9. Undercoats: As recommended by manufacturer

10. Finishing coats: To be agreedr
    10.1. Number of coats: 1

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.

240 Surfaces not to be coated

1. Components supplied pre-finished.

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.

320 Inspection by coating manufacturers

1. General: Permit manufacturers to inspect work in progress and take samples of their materials from site if requested.

Preparation

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.

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.

490 Previously coated steel

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

511 Galvanized, sherardized and electroplated steel

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

521 Uncoated steel – manual cleaning

1. Oil and grease: Remove.
2. Corrosion, loose scale, welding slag and spatter: Remove.
3. Residual rust: Treat with a proprietary removal solution.
4. Primer: Apply as soon as possible.

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.

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:
   1.2. Additional coatings:

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.

800 Glazing

1. Etched, sand blasted and ground glass: Treat or mask edges before coating to protect from contamination by oily constituents of coating materials.

810 Water repellent

1. Application: Liberally flood surface, giving complete and even coverage.

Ω End of Section

M61
Intumescent coatings for fire protection of steelwork

Summary

Details of amended clauses

No changes to show.

Protective coating systems

115 On-site coating to galvanized steel

1. Description: INTERNALLY
2. Use/ location: TBC pending S.E. proposals.
3. Fire performance: As clause 202
4. Preparation: Degrease and clean thoroughly.
5. Pretreatment: 'T wash' or mordant solution recommended by intumescent coating manufacturer.
6. Intumescent coating system
   - 6.1. Manufacturer: Submit proposals
     - 6.1.1. Product reference: Submit proposals
   - 6.2. Primer
     - 6.2.1. Type: Submit proposals
   - 6.3. Intumescent coat
     - 6.3.1. Type: Submit proposals
     - 6.3.2. Finish: Visible areas: normal decorative Non-visible areas: basic
   - 6.4. Top sealer coat
     - 6.4.1. Type: Submit proposals
     - 6.4.2. Colour: TBC
7. Bolt head/ nut protection: Fire insulating caps

140 On-site overcoating to existing steel

1. Description: INTERNALLY
2. Use/ location: Exposed internal faces of columns, beams and purlins, but excluding cladding rails - steel/iron.
3. Fire performance: As clause 202
4. Preparation: As clause 340.
5. Intumescent coating system
   - 5.1. Manufacturer: Submit proposalsTo be compatible with existing paint finish.
     - 5.1.1. Product reference: Submit proposals
   - 5.2. Intumescent coat
     - 5.2.1. Type: Submit proposals
     - 5.2.2. Finish: Visible areas: normal decorative
   - 5.3. Top sealer coat
     - 5.3.1. Type: Submit proposals
     - 5.3.2. Colour: TBC
6. Bolt head/ nut protection: Fire insulating caps

Performance and general requirements

202 Fire performance

1. Reaction to fire: TBC
2. Fire resistance to BS EN 13501-2: To BS 476, 60 minutes

204 Exposure and durability

205 Validation of materials

1. Project-specific evaluation of intumescent coating materials
   1.1. Standard: In accordance with BS EN 16623, clause 4.
   1.2. Test results: Submit on request.

210 Working procedures

1. Standard: In accordance with BS EN 16623.
2. Give notice: Before commencing surface preparation and coating application.
3. Quality control: Record project specific procedures for surface preparation and coating application.

215 Working conditions

1. General: Maintain manufacturer's recommended temperature, humidity and air quality conditions during application and drying.
2. Surface condition: Clean and dry at time of application.

220 Applicator's personnel

1. Operatives: Trained/ experienced in anticorrosive and intumescent coatings.
2. Evidence of training/ experience: Submit on request.

250 Sprayed coating application on site

1. Standard: In accordance with BS EN 16623.
2. Spray drift: Minimize.
3. Uncoated areas of steel:
4. Masking: Protect designated adjacent surfaces.
   4.1. Designated surfaces:

270 Inspection

1. Permit intumescent manufacturer to
   1.1. Inspect work in progress.
   1.2. Inspect quality control records.
   1.3. Take dry film thickness and other measurements.
   1.4. Take samples of products.
2. Intumescent manufacturer's inspection reports: Submit without delay.

Preparation of surfaces

315 New steel – blast-cleaning

1. Preparation: Remove oil, grease and contaminants.
2. Blast-cleaning
   2.1. Atmospheric condition: Dry.
   2.2. Abrasive: Suitable type and size, free from fines, moisture and oil.
   2.3. Finish: To BS EN ISO 8501-1, preparation grade SA2½, with an average profile of approximately 75 micrometres.
   2.4. Abrasive residues and moisture: Remove.
3. Primer: Apply as soon as possible after cleaning and before gingering or blackening appears.

330 Existing steel – manual cleaning

1. Preparation: Remove oil, grease and contaminants.
2. Loose or unsound coatings: Remove to a firm edge.
3. Finish: To BS EN ISO 8501-1, preparation grade St2. Leave a clean but unpolished dry surface.
4. Primer: Apply as soon as possible after cleaning and before gingering or blackening appears. Remove coating edges that lift as a result of priming, and reprime.

340 Existing steel – preparation for overcoating

1. Preparation: Remove oil, grease and contaminants.
2. Loose or unsound coatings: Remove to a firm edge.
3. Exposed steel finish: Manually clean to BS EN ISO 8501-1, grade St2. Leave a clean but unpolished dry surface.
4. Existing coatings finish: Abrade to give a good key. Leave a clean, dry surface.
5. Primer: Apply one brush coat to bare steel areas. Remove coating edges that lift as a result of priming, and reprime.

Application of castings - Not Used

Application of coatings

410 Intumescent coating dry film thickness (dft)

1. Applicable coatings: *Primer, intumescent and top sealer coat.*
2. Required dft: Determine for every steel member to give specified period of fire resistance. Use intumescent coating manufacturer's current published loading tables.
   - 2.1. Special sections and partial fire exposure conditions: Obtain required dft in writing from manufacturer.
3. Schedule and drawings: Submit at least two weeks before starting work.
   - 3.1. Schedule content: Member sizes, weights/ thicknesses, loading conditions, etc. showing, for each variant, the exposed perimeter/ sectional area (Hp/A) ratio and required dft.
   - 3.2. Drawing content: Steelwork drawings marked in colour to show required dft for each member.

420 Measurement of intumescent dft

1. Primer dft: Determine average dft (for deduction from total dft after application of intumescent).
2. Intumescent dft: Determine at:
   - 2.1. 500 mm centres along each coated plane of universal sections (8 planes), and rectangular hollow sections (4 planes).
   - 2.2. 125 mm centres along coated circular hollow sections, spread evenly around circumference.
3. Acceptance standard
   - 3.1. Average intumescent dft: Not less than required dft (exclusive of primer and top sealer).
   - 3.2. Local intumescent dft: Not less than 80% of required dft. Areas greater than 100 mm equivalent diameter with a dft of less than 80% of required dft must be brought up to thickness.

440 Basic finish

1. Definition: Reasonably smooth and even. Orange peel, other texture, minor runs and similar minor defects are acceptable.

450 Normal decorative finish

1. Definition: Good standard of cosmetic finish generally, when viewed from a distance of 5 m or more. Minor orange peel or other texture is acceptable.

490 Top sealer coat

1. Application: To achieve dft recommended by manufacturer and to give an even, solid, opaque appearance, free from runs, sags and other visual defects.

Completion

530 Records of intumescent application

1. On completion of intumescent work, submit
   1.1. Accurate surface preparation, coating and intumescent application records.
   1.2. Fire resistance certificates.
   1.3. Intumescent manufacturer's recommendations for maintenance and overcoating.

Ω End of Section

Z21
Mortars

Summary

Details of amended clauses

No changes to show.

Cement gauged mortars - Not Used

Lime:sand mortars

310 Lime:sand mortar mixes

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

320 Sand for lime:sand masonry mortars

1. Type: Sharp, well graded.
   1.1. Quality, sampling and testing: To 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):

340 Pozzolanic additives for nonhydraulic lime:sand mortars

1. Manufacturer/ Supplier: Submit proposals
   1.1. Product reference:
2. Mixing: Mix thoroughly into mortar during knocking up.

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.

370 Site prepared nonhydraulic lime:sand mortars

1. Mixing: Mix materials thoroughly by compressing, beating and chopping. Do not add water.
   1.1. Equipment: Roller pan mixer or submit proposals.
2. Maturation period before use (maximum): Seven days

390 Knocking up nonhydraulic lime:sand mortars

1. Knocking up before and during use: Achieve and maintain a workable consistency by compressing, beating and chopping. Do not add water.
   1.1. Equipment: Roller pan mixer or submit proposals.

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

Specification created using NBS Chorus