



OUR TOWN HALL

M23 NBS SPECIFICATION

REPAIRING/RENOVATING: PLASTER/RENDER (HISTORIC BUILDINGS) PROJECT - SUPPLEMENTARY SPECIFICATION FOR AREAS TO RECEIVE TERRIX PLASTER

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CLAUSE SUFFIX LETTERS

This Purcell Specification is based upon the National Building Specification (NBS). The Contractor's attention is drawn to the suffix letters **A**, **B** and ***** that occur after some of the clause numbers in the work sections.

These suffix letters are used as follows:

- ☐ ***** is used for a new clause, not found in the NBS
- ☐ **A** is used for an NBS clause which has been altered in the Purcell Standard Specification.
- ☐ **B** is used for a new clause in this particular Job Specification or against an existing clause from the Purcell Standard Specification amended for this project.

No liability is accepted for the incorrect application of this convention in this Specification.

Rev	By	Description	Date	Authorised
-	JC	For Construction	18/02/2022	JC/MG
01	AB	Terrix plaster and related clauses amended	01/04/2022	JC
02	MJBS	Clause 50 'Validation' text removed; Clause 215A regarding Terrix PL-HB-S added; Clause 311*, 535*, 540* as highlighted.	07/10/2022	AB

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**SUPPLEMENTARY SPECIFICATION FOR AREAS TO RECEIVE TERRIX PLASTER REFER TO
SCHEDULE AND DRAWINGS FOR LOCATIONS**

NOTE: CLAUSES ENTITLED IN GREEN ARE INCLUDED FOR INFORMATION AND REFER TO THE SPECIALIST PLASTERING PACKAGE THAT WILL BE UNDERTAKEN IN CONJUNCTION WITH THE TERRIX PLASTER PACKAGE

To be read with Preliminaries/ General conditions.

50 PREPARATION OF MASONRY BACKGROUND FOLLOWING PLASTER REMOVAL

- Preparation: as M23/410, 415, 432, 500, 507, 510, 511, 512 and 513.
- Cracks in background: If cracking is evident within the masonry background, inform Architect prior to proceeding with repairs.
- Generally: as M23/405.
- Dissimilar solid backgrounds: as M23/410 (stainless steel) or M23/470 (brick mesh); to be determined on site following opening up.
- Filling of cracks: as M23/535.
- Repair/filling holes: as M23/540, C41/695B
- Repointing of masonry: as C41/516, C41/805,806

CONSTITUENT MATERIALS

200A LIME RENDER FOR PLASTERING ON BRICKWORK MASONRY WALLS AND CONCRETE SOFFITS (Without water resisting additives)

- PCC Terrix® RN-LP Dry, lime-based restoration plaster based on hydraulic adhesives (lime) and selected aggregates (including light aggregates) for manual or machine application.
- Obtain from:
 - 1. F&T Terrix 298 Langley Rd S, Salford M6 6ST, United Kingdom (Tel: +44 333 320 1513)
- The product should be stored in its original sealed packaging, in a dry frost-protected room. Note: The product must be kept out of the reach of children;

201A LIME RENDER FOR PLASTERING ON BRICKWORK MASONRY WALLS AND CONCRETE SOFFITS (Without water resisting additives)

- PCC Terrix® RN-LP Dry, lime-based restoration plaster based on hydraulic adhesives (lime) and selected aggregates (including light aggregates) for manual or machine application.
- Obtain from:
 - 2. F&T Terrix 298 Langley Rd S, Salford M6 6ST, United Kingdom (Tel: +44 333 320 1513)
- The product should be stored in its original sealed packaging, in a dry frost-protected room. Note: The product must be kept out of the reach of children;

210A TOP COAT FOR PLASTERING

- Terrix® PL-SX-S, ready-to-use plaster coat for machine levelling of interior walls.
- Obtain from:
F&T Terrix 298 Langley Rd S, Salford M6 6ST, United Kingdom (Tel: +44 333 320 1513)
- The product should be stored in its sealed packaging in a cool, but frost-protected room.

215A TOP COAT FOR PLASTERING TO CEILINGS

- Terrix® PL-HB-S, ready-to-use plaster coat for machine levelling of interior ceilings.
- Obtain from:
F&T Terrix 298 Langley Rd S, Salford M6 6ST, United Kingdom (Tel: +44 333 320 1513)
- The product should be stored in its sealed packaging in a cool, but frost-protected room.

220A COARSE-GRAINED MORTAR FOR RUNNING CORNICES AND MOULDING

- Terrix® RN-RC 1.2, repair compound for continuous elements 1.2mm.
- Obtain from:
F&T Terrix 298 Langley Rd S, Salford M6 6ST, United Kingdom (Tel: +44 333 320 1513)
- The product should be stored in its sealed packaging in a cool, but frost-protected room.

225* WATER

- Mains supply kept free from impurities.

230* ADMIXTURES

- DO NOT USE (Other than the water resisting additives in the standard Terrix Base Coat Plaster PCC Terrix® RD-LB as clause 200A)

250* RIVEN/SPLIT LATH

- Produced from oak / chestnut / softwood (Pinus Silvestris - European Scots Pine) / or an approved equal, free from knots and defect.
- Obtained from:
 1. Carpenter, Oak and Woodland Limited, Wilts. (Tel: 01225-743089)
 2. I.J.P. Building Products (Tel: 01189-696949, Fax: 01189-697771)
 3. G&N Marsham (Tel: 01798 342427) (For chestnut lath)
 4. Hendry's of Foulsham (Tel: 01362-683249)or other source to be agreed prior to submitting the tender.

260* TIMBER FIRTINGS

- Where specified in the Schedule of Works, firrings to correct line and level to be of treated softwood, 25mm wide, tacked in position before fixing timber lathing. Where fixing timber lathing to thin firrings on ceilings increase length of lath fixings by thickness of firring, unless firrings are more than 16mm in thickness and securely fixed to supporting timber with st nails at 300mm c/c.

265* TIMBER LATHING FOR CEILINGS AND CORNICES

- Supports (not included in this section): Timber joists/firrings at 330mm nominal centres.
- Lathing: Riven/split laths nominal 1/4: (6-7mm) thick, 32mm wide and in length enough to cover 3 or 4 supports. Laths must be straight and evenly spaced 6-10mm apart, fixed at every support with 35mm stainless steel ring shank nails.

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APPLICATION

311* PLASTER REPAIR MIXES & PLASTER REINSTATEMENT TO INTERNAL MASONRY WALLS AND CONCRETE CEILINGS

- Average mix ratio for Terrix® RD-LB (by quantity):
Lime render: Mixing ratio: 5.5÷6.0 litres of water per 25 kg of mortar;
- Top coats: no mixing required
- Tests should be made to agree the final consistency of mix (the product, thoroughly mixed, should not be too dry or wet)

PLASTER REINSTATEMENT:

- Ensure the area is clean and free of all dust and debris from the removal process.
- Apply to a sound and clean substrate (without cracks and delaminations), degreased, even and dry, and biological or chemical efflorescence free). The substrate should be free of algae/fungi growth.
- In case of microbial contamination, the substrate should be mechanically cleaned. Subsequently Terrix®PR-AR solution for removing microbial contamination to be applied as per product manual. Any loose layers that are not bonded to the substrate (such as loose plasters or flaked paint coats) should be removed. Wash and degrease old and/ or dirty substrate with water and product Terrix® PR-CL cleaning agent.
- **Terrix plaster base coat to be butted up neatly to retained, refixed or re-run mouldings in conjunction with the specialist plasterer to seamlessly join both surface finishes.**
- Thoroughly dampen down the area and allow to soak in. Do not over-wet which kills suction or allow to dry out which draws moisture from the plaster. Dependent on the porosity of the substrate and surrounding plaster and ambient environmental conditions multiple applications may be required. Take care that no water collects or pools on any edges. Pat dry with a clean cloth or sponge if necessary.
(After dampening down, the water should remain on the wall surface for about 30 seconds. If this time is significantly shorter, repeat the operation).
- **At junctions with existing plaster, feather back existing over width of 100mm band so that new Terrix overlaps. See Terrix standard detail.**
- Plaster should be mixed to agreed ratios as stated above whilst this process is taking place. To minimise the potential of splashes, mortar will be premixed off site, and applied by render pump approved by the plaster supplier.
- Use a container with a measured amount of fresh water (6÷7l per 25kg of mortar), pour the entire content of the package and mix thoroughly with a mixer /low- speed drill with a basket mixer until homogeneous and lump-free. Leave for approx. 5 minutes to initiate a chemical reaction. Immediately before use mix thoroughly again. Depending on the temperature and humidity ready mix is suitable for use for approx. 2 hours. If required, add a small amount of clean water (max. 0.1l per 20kg of the product).
Quantity of added water may vary for different substrate types, weather conditions and application method. The consistency of the product should be such that it does not dry out very quickly after application, which could indicate a substrate that is too absorbent, a mix that is too dry or a high ambient temperature. The product should remain on the wall surface after application and not run off.
- Due to the thickness of the existing plasterwork (nominal depth 40mm) new plaster is to be applied in 2/3 coats no thicker than 20mm as follows:
- Preparation of masonry substrate following plaster removal as (M23/50) any significant holes in the substrate are to be filled with an appropriate matching material, either full brick, half brick or base coat mortar (dependent on hole size and to be agreed with architect at the hold point above once plaster is removed) and allowed to cure sufficiently so as not to cause differentials in the curing times of subsequent coats.
- 1st coat – ensure the coat is evenly sprayed into the backing taking care not to cause distress to the surrounding plaster. As the coat stiffens (timing depends on ambient conditions), float off with a wooden float to remove laitance and open up the surface, and key the surface horizontally with a devil float or scratch comb. Do not cross the scratches as this creates weak points.
- 2nd and subsequent coat(s) – can be applied after minimum 4h, as above taking care not to damage the previous coats

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- After partial setting, use a felt-trowel to bring out the flat surface and texture of the plaster.
- Drying out and curing process as (M23-546). Lime render is an air lime and only uses water for the initial set and therefore does not require regular wetting down.
- During the drying out of the first layer of plaster, surface cracks may appear. Their occurrence is typical and does not affect the quality of the plastering.
Cracking does not require any action before applying the next layer.
If cracks appear in the final layer of plaster, they should be filled with Terrix RN-LP and then dried before starting the topcoat application.
- For future phases where the heating system has been removed if the temperature is falling below 3 degrees, then some regulation of the ambient temperature of the room will be necessary. A room thermometer will be installed, and daily monitoring of the room temperature will be recorded at the SMART start.
The product must not be applied if the room temperature at the time of application or within 24 hours is below 3 degrees Celsius.
The Rh level of relative humidity of the air does not restrict the application of the product; however, when it is above 80%, the drying process is prolonged. The same applies to low temperatures. In case the room temperature is below 15 degrees Celsius, the drying process is prolonged.

TOP-COAT APPLICATION:

- Ensure the lime plaster (render) coat is cured (minimum 10 days).
- Retain and protect areas of original intact finishes to be presented as historic exemplars in situ according to the schedule and drawings from Purcell identifying locations to not receive the finishing plaster. The preparation of these areas is to be included in the specialist decorations package.
- Preparation for application over existing paint: Before application the paint should be partially removed to ensure vapour permeability. A minimum of 40% of the paint surface should be removed. Preferred method is scarifying which creates a key for plaster and removes existing paint. The equipment used should also collect dust to minimise amount of lead contaminated dust becoming airborne.
- Equipment to be used to be Hilti DGH 150 and Hilti Vacuum VC 40M-X.
- Apply a thin, uniform layer of product on the substrate at a thickness from film to 2 mm, using a spraying machine (airless method). In order to do it, special tools intended for applying spray plasters should be used (e.g. T-MAX of GRACO), as well as suitably powerful devices for the application of paints (e.g. MARK V of GRACO company or SPEEFLO PT6900 XLT DI of WAGNER company). While spraying, the gun should be directed perpendicularly towards the substrate at a distance of ca. 1.0÷1.2 m (T-Max GRACO) and ca. 0.5÷0.6 m (Mark V GRACO)
- If greater unevenness is present, the material should be applied in a few layers after the previous layer hardens. (Approx. 4-5 hours)
- The coat should be sanded when dry with orbital sander with an extractor. Small areas can be sanded by hand.
- Sandpaper 220 should be used for sanding.
- DRYING: Substrate water absorption and air circulation in the room may significantly affect the drying time of the product. The product is ready for sanding when it does not block the sanding paper typically after ca. 48 hours (>8°C, <80% RH) or approx. 12h in summer.
- In case of slow drying, it is recommended to use forced air movement (fans).
Under no circumstances should combustion heaters be used due to the amount of moisture that is produced during operation.

WORKMANSHIP GENERALLY

GENERAL REQUIREMENTS FOR PLASTERING

400* PROTECT AREAS

- In addition to general protection adequately protect any areas adjacent to the working area against water during cleaning, plaster droppings during plastering, or, any other damage which might reasonably result from the carrying out of the works described in this section. In particular, carefully protect any decorative plaster, polished or varnished joinery, and marble hearths.

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405* GENERAL REQUIREMENTS FOR WORKMANSHIP

- **CONTROL SAMPLE(S):** Complete sample area(s), being part of the finished work, in approved location(s) as follows, and obtain approval of appearance before proceeding
 - Lime render on lathing and brickwork.
 - Running cornice profiles in situ.
 - Plaster samples to be preserved unpainted as an ongoing benchmark.

UNIFORMITY OF COLOUR AND TEXTURE: Once samples of coatings have been approved do not change type or proportion of constituent materials. Ensure that supplies of materials are sufficient to give consistent and uniform colour and texture. Obtain each material from one source and mix different loads if necessary.

- **ADMIXTURES:**
 - Do not use unless specified or approved.
 - Do not use admixtures of any type with proprietary mixes.
 - Do not use calcium chloride or any admixtures containing calcium chloride.
- **MIXING:**
 - Measure materials accurately by volume using clean gauge boxes.
 - Mix materials thoroughly to a uniform consistency and appearance using suitable mechanical or manual means or, for proprietary mixes, as recommended by the manufacturer.
 - Do not overmix lime plasters or cement gauged mixes containing air entraining admixtures.
- **CONTAMINATION:** Do not allow contamination of one type of material by another, or by any set material.
- **INITIAL SET:** Do not use mixes after initial set has taken place. Do not retemper or reconstitute mixes, unless permitted by the manufacturer of proprietary mixes.
Terrix batches can be topped up after mixing to achieve the required volume to complete the area.
- **SCAFFOLDING:** Use independent scaffolding to avoid putlog holes and other breaks in coatings.
- **CLEANLINESS:** Protect thoroughly all existing work and approaches using suitable boards, sheets, etc. Clean off all droppings on to finished work immediately.
- **WORK TO HISTORIC PLASTER/RENDERS GENERALLY:**
 - Materials, and methods of working for the repair and replacement of plasterwork (decorative and plain) must match that of the original work as closely as possible, unless specified otherwise.
 - Before commencing work, agree mixes, preparation and application methods with the Architect.
 - Use plasterers who are skilled and experienced in the repair and replacement of historic plasterwork including moulded work to cornices, skirtings and the like.

WORKMANSHIP : PREPARATION PREPARING

BACKGROUNDS

415* WALL PAINTINGS

- Notify the Architect immediately if evidence of existing wall paintings is found whilst carrying out preparation work. No further work should be carried out until it has been confirmed by the Architect.

430* TREATMENT OF ORGANIC GROWTHS

- Use only biocides recommended for the purpose and cleared under the Pesticides Safety Precautions Scheme.
- Any partially decayed timbers to be retained should be brush treated with a paste preservative. Remtox K9 (Remtox (Chemicals) Ltd, Tel: 0121-5252299) where rapid and deep penetration is required, or Permatreat Paste (Permaguard Products Ltd, Tel: 01179-381596) where there is a risk that adjacent plaster may be

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stained. (All pastes may carry dirt through to the surface of plaster if they come into contact with it and must be used with caution).

432* EXISTING PLASTER/RENDER

- The extent and location of renewal of existing coatings (plain and decorative work) must be agreed with the Architect before the work is started. Remove existing coatings in ways that will reasonably minimise the amount of removal and renewal.

460* BEADS/STOPS

- Do not use metal angle beads. Form external angles with straight, square and plumb screeding rails in floating coat plaster. Ease the arris and finish in setting coat plaster to match existing radius (nominally 1mm). Use timber plaster stops/grounds (not included in this section) at junctions with joinery unless specified otherwise.

500* PREPARE OLD PLASTER ON LATH

- Carefully cut back loose and friable plaster to sound square edges either perpendicular to or parallel with lathing.
- Align perpendicular edges just behind supporting timber to expose lath fixings. Slightly under-cut plaster edges to key in new work. Remove dust by dry brushing.
- depth of cutting - 6-10mm

507* ACCEPTANCE OF BACKGROUNDS

Before preparation or application of coatings ensure that:

- Backgrounds are secure, adequately true and level to achieve specified tolerances, free from contamination and loose areas, reasonably dry and in a suitable condition to receive specified coatings.
- All cutting, chasing, fixing of concealed conduits, service outlets and the like, and making good of the background, is completed.

510* PREPARE OLD PLASTER (PRICKING-UP COAT INTACT)

- Carefully cut back loose and friable plaster to sound edge. Slightly under-cut plaster edges to key in new work.

511* PREPARATION GENERALLY

- Remove efflorescence, dust and other loose material by thoroughly dry brushing.
- Remove all traces of paint, grease, dirt and other materials incompatible with coating by scrubbing with water containing detergent and washing off with plenty of clean water. Allow to dry before applying coatings unless specified otherwise.
- Apply clay pack if specified elsewhere.

512* KEYING/BONDING

- Prepare backgrounds as specified for the type of coating to be applied. Where not specified, comply with BS 8000: Part 10 Clause 2.2.2.2. Methods other than those specified may be submitted for approval.

513* RAKING OUT FOR KEY

- Rake out soft joints in old brickwork to a depth of not less than 10 mm. Brush out joints to remove dust.
DO NOT SCABBLE SURFACE OF BRICKS.

535* FILL CRACKS

- Remove loose materials with a sharp pointed tool, brush and blow out dust and fine debris, dampen both sides of the crack to control suction and neatly fill with Terrix RN-LP.
Omit hair and replace coarse aggregate with fine for very fine filling.

540* FILL HOLES

- Remove loose material with a sharp pointed tool, brush and blow out dust and fine debris, dampen plaster to control suction and neatly fill holes with Terrix RN-LP, omitting hair.

WORKMANSHIP: APPLICATION

PLASTERING GENERALLY

544* APPLICATION GENERALLY

- Apply each coating firmly to achieve good adhesion and in one continuous operation between angles and joints.
- All coatings to be not less than the thickness specified, firmly bonded, of even and consistent appearance, free from rippling, hollows, ridges.
- Any cracks and crazing should be filled and treated before the work completion and handover to decoration package.
- Finish surfaces to a true plane, to correct line and level, with all angles and corners to right angle unless specified otherwise, and with walls and reveals plumb and square.
- If, due to the construction of the building, it is not possible to comply with the above-mentioned requirements, this should always be notified to the client.
- Prevent excessively rapid or localised drying out. (M20/710)

545* DUBBING OUT

- If necessary to correct background inaccuracies, dub out in thicknesses of not more than 10mm in same mix as first coat.
- Allow each coat to set but not dry before the next is applied.

456* SETTING / DRYING

- Leave each coat for at least 3 days in summer and 10 days in winter to ensure that initial shrinkage is over before applying subsequent coats.
These times may be longer depending on temperature and humidity levels.
- Read Note 1

547* CONTROL OF SUCTION

- Lightly dampen dry work with clean water using a small garden spray to control suction and prevent rapid removal of moisture from new plaster.
- After dampening down, the water should remain on the wall surface for about 30 seconds. If this time is significantly shorter, repeat the operation.

COMPLETION GENERALLY

549* COMPLETION

- On completion remove guide rails and make good wall and ceiling plaster.

DECORATIVE PLASTER : SPECIFIC APPLICATION (to be by specialist plasterer in conjunction with flat plaster work)

570* RUNNING A CORNICE OR MOULDING Run floating coat(s)

- Gradually bring forward the required profile in thin layers of plaster (coarse stuff and hair) roughly applied by hand profile to be shaped with a purpose-made timber profile (horsed mould) drawn across the work and kept true to line and level with timber guide rails top and bottom.
- Score all over each layer to provide a key for the next and allow each to develop an adequate set before continuing.
- Ensure that guide rails are accurately set out and firmly secured, packing and scribing locally where necessary, to produce a true and even line exactly matching the original.
- Ensure that each timber profile is kept vertically plumb and perpendicular to the work by fixing a brace to one side.
- Include the timber profile slightly forward to produce a swell in the plaster firmly pressing each new layer into the scoring/scratching of the previous layer.
- Allow for adjusting the brace to suit the radii of cylindrical work.
- Finish junctions and angles free-hand.
- Gently roughen the surface of the last base coat with a stiff bristle brush once the initial set has taken place to provide a key for the setting coat.

575* RUN TOP (FINAL) COAT

- Form the finishing profile (horsed mould) from Tin or Zinc sheet supported by a timber profile and brace generally as described above.
- Apply the TOP coat in one smooth operation leaving the work clean and true to line and level with no ripples, ridges, plaster splashes, or indentations.
- Finish junctions and angles free-hand. Allow for purpose made profiling knife cut from Tin or Zinc sheet and run along a hand-held rule or guide rail.

580* MODEL IN MISSING SECTION(S)

- Dampen existing plaster to control suction and model in missing feature(s) free-hand with setting coat plaster (two or more coats) to match original detail.
- Allow for purpose made profiling knife cut from Tin or Zinc sheet and run along a hand-held rule or guide rail.

585* MODEL IN MISSING FEATURE(S)

- Dampen existing plaster to control suction and model in missing feature(s) free-hand with setting coat plaster (two or more coats) to match original detail.
- Allow for purpose made profiling knife cut from Tin or Zinc sheet and run along a hand-held rule or guide rail.

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591B IN-SITU DADO, CORNER ROLLS AND ARCHED WINDOW HEAD MOULDING REPAIRS

- In situ repairs to plaster strap-work and mouldings to match existing profile.
- Within rooms of high significance and designated as refurbishment. Refer to schedule.
- Decoration Restoration strategy to be established following intrusive surveys.
- Specification and methodology to be subject to intrusive survey trails including paint analysis and specialist recommendations.

593B IN SITU REPAIRS TO CORNICE AND BEAM CASINGS

- In situ repairs to corridor cornice to damaged and defective areas caused by impact, damp water, thermal movement etc.
- Located in areas of high significance, **refer to schedule**.
- Purpose is to retain significance and appearance of areas.
- Method to be like for like repair and include stripping and repainting for even and renewed appearance.

Note 1

Due to the characteristics of lime-based products, it is not possible to give more precise data on drying times.

It is not possible to determine the moisture level with typical moisture meters. They measure relative humidity based on the electrical resistance between two electrodes. This method is very inaccurate and does not measure the moisture in the whole layer, which in this case is more than 30 mm thick.

There are devices for measuring the moisture in such situations, but they are costly and must be operated by qualified personnel. This makes it an impractical solution.

The drying speed of the plaster is dependent on 4 variables: coat thickness, moisture content of the substrate, ambient temperature and relative atmospheric humidity. For these reasons, it is not possible to accurately determine when the coating has dried sufficiently.

Times given in the technical documentation is for information purposes only. The contractor shall control the drying process and the occurrence of cracks.

Before applying the topcoat, check for and fill any cracks.

If only few cracks appear after the topcoat has been applied, they should only be filled and lightly sanded. If there are a large number of cracks, prolong the drying process of the plaster.