OUR TOWN HALL PROJECT

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## M41 NBS SPECIFICATION
## TERRAZZO TILING/ IN SITU TERRAZZO

Document reference: OTH-PUR-TH-ZZ-SPE-A-5930

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Status: For Construction

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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 |
|---|---|---|---|---|
| - | VT | FOR TENDER | 27/03/2020 | NM |
| 01 | VT | Clause 113 added | 06/11/2020 | NM |
| 02 | VT | Clause 112A - References amended. Sign off procedures added. Clause 113 – References amended. Sign off procedures added. Clause 161 - References amended. Sign off procedures added. Clause 162 – Added. | 14/04/2021 | NM |
| 03 | MJBS | Clause 161 and 162 notes on Ardex screed type amended. | 17/07/2026 | GO |
| 04 | ANB | Clause 112A updated generally. Reference to Ardex S21 removed bedding mortar. | 13/08/2026 | GO |

# M41 Terrazzo tiling/ in situ terrazzo

To be read with Preliminaries/ General conditions.

## TYPES OF TERRAZZO

112A TERRAZZO FLOOR TILING TO EXISTING HERITAGE WCS AND NEW CORES

- Antistatic requirements: to BS 5385-4:2009.
- Tiles:
  - To: BS EN 13748-1 for internal use.
  - To: BS EN 13748-2 for external use.
  - Manufacturer: Quiligotti.
    Product reference: Standard Terrazzo. Work Package Contractor to provide samples for Architect, Client and LPA sign off prior to ordering via sample approval process.
  - Recycled content: 30% (minimum) to BS EN ISO 14021.
  - Size: 300x300x28mm.
- Substrate: If existing floor: Following removal of existing floor finish, ensure existing substrate is level with no major irregularities. If new floor: Pre-cast concrete slabs to Structural Engineer's details.
  - Preparation for bedding: The concrete sub-base should be swept clean with a stiff wire brush to remove any laitance and then hoovered to remove any remaining dust.
  - OPC slurry/ primer then applied to slab using a brush or trowel and allowed to dry
- Bedding for floor tiling in new cores and Heritage WCs:
  - Mix (cement:sand): Use a semi-dry Cement:Sand 1:4 bedding screed using a sharp washed grit sand. Mix thoroughly in a forced action mechanical mixer to a uniform consistency. Do not use a free fall (tilting drum) type mixer. The bedding screed should have a water content such that a sample squeezed in the hand will retain its shape and not crumble. Use a suitable retarder to maintain workability during the working day.
  - Screed mix to be spread using a trowel. Galvanised steel D49 reinforcing wire mesh to be installed within the bedding compound and bed to be finished to correct height to receive tiles.
  - Attachment to substrate: Bonded.
- Bedding within Heritage WCs:
  - Movement joints in bedding (where required) to be sealed with Schlüter-KERDI-KEBA (tape) using Schlüter-KERDI-COLL (adhesive) installed to manufacturers recommendations.
    Name: Schlüter-Systems Ltd
    Web: www.schluter.co.uk Tel:
    +44 (0)1530 813396
- Slurry coat to form bond between the tile and the tile bedding: Once the bedding screed has been placed on the floor and spread to the correct level, spread an even layer of a neat cement slurry (1 part water to 1 part portland cement) and using a hand trowel/rubber mallet & spirit level the tile is to be installed to the correct level/location, the above is repeated until the area is completed and allowed to cure (24 – 48hours)
- Joint width: 2-3 mm. Joints are to be true to line, continuous and without steps and parallel to the main axis of the space.
  - Cut tiles are to be kept to a minimum and be as large as possible. Cut tiles neatly and accurately with grinder fitted with diamond blade or a wet bench saw. Positions of division strips to be agreed.
  - Fix tiles so that there is adhesion over the whole of the background / base.
  - Tiles to be laid with a 2-3mm wide joint.
- Grouting of tiles:
  - Once laid, grout tiles as soon as the bedding has cured sufficiently to prevent disturbance of the tiles (normally 24 – 48 hours after the tiles have been laid).
  - Flood grout the tiles using a neat cement grout with water reducing agent if required) to match as closely as possible to the matrix of the tile.
  - The grout should be passed continuously over the floor with a squeegee until all the joints are full and any surplus grout removed from the surface of the tiles with a sponge.
  - The grout should be left to cure until it is hard enough to allow grinding of the surface of the tiles to an 80-grit finish (typically 4 – 5 days).
- Movement joints: Refer to M40 825, 825A, 826, 827- Refer to drawing OTH-PUR-TH-ZZ-DWG-A-8161 for details.
  - Where there are movement joints within the concrete sub-base, there should be a corresponding joint in the terrazzo tiling fixed directly above the joint in the sub-base where possible.

- The type of joint shall be determined by the amount of movement anticipated (by the Structural Engineer) and a joint chosen should be able to accommodate the amount of movement.
- When matching up to existing terrazzo, the joint selected should, where possible match the existing. If there are no joints in the concrete sub-base then there would be no requirement for a joint in the terrazzo flooring. However if the floor size was greater than 6m x 6m then it would be good practice to incorporate rigid plastic crack inducer strips (3mm or 6mm wide) into the floor at approx 6m centres in both directions.
- Crack inducer strips could be plastic, brass or aluminium.
- Provide 6mm wide polystyrene perimeter expansion strip where terrazzo tiles abut perimeter walls.

• Finishing:
- Grinding: For slip resistance.
- Mechanically grind the surface of the tiles to an 80-grit finish, using floor wet polishing machine fitted with grinding pads to remove all surface grout, to correct any unevenness and remove any lipping between tiles.
- Remove any grinding slurry created with wet vacuum and sponge clean area of any residue.
- Fill any holes and depressions in the surface with matching grout and allow to harden for at least 24 hours.
- Wash the surface clean.
- Finish: Seal the terrazzo tiles.
- Apply 3 coats of 'Lapidolith' with roller, brush or squeegee, in accordance with manufacturer's instructions (Lapidolith manufactured and supplied by Conren Ltd in Wrexham).

• Other requirements: Terrazzo tiles are to be manufactured to meet the performance requirements of BS EN 13748-1:2004 (European standard for manufacture of terrazzo tiles for internal use) Refer to drawings OTH-PUR-TH-ZZ-DWG-A-8152 to 8155 for tiling location in WCs;to drawings OTH-PUR-TH-ZZ-DWG-A-8147 to 8151 for tiling location in cores.

113 TERRAZZO TILING To interior of lift car

- Antistatic requirements: [to BS 5385-4:2009].
- Tiles:
  - To: BS EN 13748-1 for internal use.
  - To: BS EN 13748-2 for external use.
  - Manufacturer: [Quiligotti].
    Product reference: [Honed Standard Terrazzo - to match M41 112A. Work Package Contractor to provide samples for Architect, Client and LPA sign off prior to ordering via sample approval process].
  - Recycled content: [30% (minimum) to BS EN ISO 14021].
  - Size: [300x300x28mm].
- Substrate: [Lift platform - depth and tray edge subject to specialist lift manufacturer input].
  - Bedding: [Ardex X77].
  - Attachment to substrate: [Fully bonded - R1 Resin].
    Joint width: 2-3 mm. Joints are to be true to line, continuous and without steps and parallel to the main axis of the space.
  - Cut tiles are to be kept to a minimum and be as large as possible. Cut tiles neatly and accurately. Positions of division strips to be agreed.
  - Fix tiles so that there is adhesion over the whole of the background / base.
  - Tiles to be laid with a 2-3mm wide joint.
    Grouting of tiles:
  - Grout tiles as soon as the bedding has cured sufficiently to prevent disturbance of the tiles (normally 24 – 48 hours after the tiles have been laid).
  - Flood grout the tiles using a neat cement grout with water reducing agent if required) to match as closely as possible to the matrix of the tile.
  - The grout should be passed continuously over the floor with a squeegee until all the joints are full and any surplus grout removed from the surface of the tiles.
  - The grout should be left to cure until it is hard enough to allow grinding of the surface of the tiles (typically 4 – 5 days).
    Finishing:
  - To avoid requirement for tiles to be ground on site, tiles to receive honed finish off site.
    Other requirements: [Terrazzo tiles are to be manufactured to meet the performance requirements of BS EN 13748-1:2004 (European standard for manufacture of terrazzo tiles for internal use)
    Refer to drawings OTH-PUR-TH-ZZ-DWG-A-8169 for tiling in lift cart].

161 PRECAST TERRAZZO TREADS TO NEW STAIRCASES

- Standard:
  - To: BS EN 13748-1 for internal use.
  - To: BS EN 13748-2 for external use.
- Manufacturer: Quiligotti.
  - Product reference: Bespoke Precast Terrazzo Tread with String Edge machine made, fully vibrated and fully machine polished. Joints to be grouted in a neat matching cement grout and wiped clean on completion. - Refer to details OTH-PUR-TH-ZZ-DWG-A-5149 to 5151. Work Package Contractor to provide samples for Architect, Client and LPA sign off prior to ordering via sample approval process.
  - Size: Varies between staircases: Refer to details OTH-PUR-TH-ZZ-DWG-A-5149 to 5151.
- Substrate: Steel plate to tread to Structural Engineer's details.
- Bedding: Ardex A38.
  - Attachment to substrate: Fully bonded - R1 Resin.
    Other requirements: Anti-slip contrast nosing cast in face - Refer to details OTH-PUR-TH-ZZ-DWG-A-5149 and 5151. Refer to drawings OTH-PUR-TH-ZZ-DWG-A-8147 to 8151 and OTH-PUR-TH-ZZ-DWG-A-5140 to 5147 for location of staircases.

162 PRECAST TERRAZZO HALF LANDINGS TO NEW STAIRCASES
Standard:
- To: BS EN 13748-1 for internal use.
- To: BS EN 13748-2 for external use.
  Manufacturer: [Quiligotti].
- Product reference: [Bespoke Precast Half Landing machine made, fully vibrated and fully machine polished. Joints to be grouted in a neat matching cement grout and wiped clean on completion. Work Package Contractor to provide samples for Architect, Client and LPA sign off prior to ordering via sample approval process].
- Size: [Varies between staircases: Refer to details OTH-PUR-TH-ZZ-DWG-A-8147 to 8151].
  Substrate: [Refer to Structural Engineer's details].
  Bedding: [Ardex A38].
- Attachment to substrate: [Fully bonded - R1 Resin].
  Other requirements:

## GENERALLY

210 SUITABILITY OF SUBSTRATES
- General: Suitably dry and clean for specified bedding method.
- Existing substrates: Free from loose areas and significant cracks and gaps.
- New in situ concrete substrates: Allow for initial shrinkage:
  - Air drying after curing: (minimum) 6 weeks .
  - Other methods: Submit proposals.

220 EXISTING CONCRETE/ SCREEDS
- Loose or hollow portions: Cut out and make good.
- Material for making good: 1:3 cement:sand mortar .

230 SAMPLES
- General: Submit representative samples of the following: 1sqm

235 CONTROL SAMPLES
- General: Complete sample areas, being part of the finished work, and obtain approval of appearance before proceeding.
- Terrazzo type: Example of each type .
  - Location/ Size: 1sqm of tile, 1 tread and rise .

238 ANTISTATIC PERFORMANCE
- Electrical resistance of flooring - upper limit:
  - Average value (maximum): 2 megohms.
  - Single point (maximum): 5 megohms.
- Electrical resistance of flooring - lower limit:
  - Average value (minimum): 50,000 ohms.
  - Single point (minimum): 20,000 ohms.

242 CEMENT
- Standard: To BS EN 197-1.
  - Types: Portland cement, CEM I or Portland slag cement, CEM II/ B-S.
  - Strength class: 42.5.
- Certification for all cements: BSI Kitemark scheme.

245 SAND (FINE AGGREGATE)
- Standard: To BS EN 13139.

### 248 ADMIXTURES

- Water reducing and set retarding admixtures: To BS EN 934-2 and compatible with other mortar constituents.

## LAYING

### 305 LAYING GENERALLY

- Tiles: Fully adhered to bedding.
- Cut tiles: Neat and accurate.
- Joints: True to line, continuous and without steps.
  - Joints in floors: Parallel to main axis of the space or specified features.
- Dividing strips/ Movement joints: If locations are not indicated, submit proposals.
- Special setting out: n/a.

### 330 LEVEL OF FINISHED FLOOR

- Permissible deviations from datum: ± 5 mm.
  - Locations: All areas.

### 340 FLATNESS/ SURFACE REGULARITY OF FINISHED FLOOR

- Sudden irregularities: Not permitted.
- Deviation (maximum) of surface measured from underside of a 2 m straightedge, between points of contact, and placed anywhere on the surface: 3 mm.

### 345 LEVEL OF UNGROUND TILING ACROSS JOINTS

- Deviations (maximum) between surfaces either side of any type of joint:
  - Joints less than 6 mm wide: 1 mm.
  - Joints 6 mm wide or greater: 2 mm.

### 390 MIXING BEDDING MORTAR

- Batching: Select from:
  - Batch by weight.
  - Batch by volume: Permitted on the basis of previously established weight:volume relationships of the particular materials. Allow for bulking of damp sand.
- Water content: Minimum necessary to achieve full compaction.
- Mixes: Of uniform consistence, free from lumps. Do not retemper or reconstitute mixes.

### 395 CRACK CONTROL REINFORCEMENT

- Standard: To BS 4483.
  - Fabric reinforcement type: D98.
- Location: Centrally in depth of bed.
  - Laps (minimum): 100 mm and tied with steel wire.

### 405 TILING ON MORTAR BEDDING

- Compaction of bedding: Compact thorough.
- Tiling: Lay tiles on layer of wet slurry and beat tiles firmly into position.
  - Timing: Before bedding sets and to achieve effective bond between bedding and tiles.
  - Slurry type: 1:1 cement:fine sand.
- Grouting: Fill joints. Remove surplus and allow grout to cure before finishing.
  - Grout colour: To match tile/ tile matrix.

### 440 DIVIDING STRIPS

- Material: Brass .
  - Thickness: 3 mm to 6mm .
- Installation: Set to required finished floor level.

445 STRIP MOVEMENT JOINTS TO ALL AREAS
- Manufacturer: Submit proposal.
  - Product reference: Submit proposals.
  - Colour: Brass.
- Joint width: 6 mm.
- Installation: Extend through terrazzo and bedding to base. Set to required finished floor level.
  - Fixing: Integral anchors at 300 mm centres.

455 SEALANT MOVEMENT JOINTS WITH METAL EDGINGS FOR TILING M41 112A
- Edging angle material: Brass.
  - Angle size: 75x50x5mm.
- Joint width: To match that of structural movement joint in base.
- Installation: Centre over joint in base. Set to exact finished level of floor.
  - Mortar levelling bed: cement:sand.
  - Fixing: to Manufacturer's recommendations.
- Sealant: to BS EN ISO 11600.
  - Colour: Refer to OTH-PUR-TH-ZZ-RPT-A-0116 Room Types Decorations and Colour document
  - Preparation and application: As section Z22.

520 GRINDING
- Mechanical grinding: Use wet process. Dry process permitted only where it is not practicable to use wet process.
- Coarse grinding: Remove all surface grout, correct unevenness and remove lipping between tiles/ slabs.
  - Residue and dust: Remove. Wash and rinse surface.
- Fill with matching grout.
- Polishing: Use wet process.
  - Residue and dust: Remove. Wash and rinse surface and leave to dry naturally.
- Protection: Cover flooring and keep free from traffic for at least two days.

## COMPLETION

525 SLIP RESISTANCE TESTING
- Test: To BS 7976-1, -2 and -3.
- Report: Submit. Include:
  - Name and address of testing authority.
  - Date of tests.
  - Location of test.
  - Temperatures of test surfaces.
  - The slider material used on the pendulum tester.
  - Slip resistance values in wet and dry conditions.