



NBS SPECIFICATION (Letter of Recommendation & M40)

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Project: **The Tile Portfolio, Kettering**

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Mapei is one of the world's leading manufacturers of **chemical products for the building industry** and has contributed to the construction of some of the most important architectural and infrastructural works worldwide.

With **90 subsidiaries** operating in 57 countries and 83 manufacturing plants in 36 different nations, Mapei Group employs over **10,500 staff** worldwide. Over the years it has taken over important international companies as part of its growth strategy.

Mapei develops, manufactures and markets **building** products and solutions that can cater for every imaginable need in the construction industry, from housing and infrastructural works to cutting-edge architectural structures and repair work.

Alongside its high degree of **Specialisation**, the Group's **Internationalisation** strategy means it has local business-manufacturing facilities to work more closely with its partners.

Another driver behind Mapei's growth is **Research & Development** to which the Group is highly committed in terms of both investment and human resources. It has 31 R&D laboratories worldwide.

The firm belief that **Sustainability** is not just a shared responsibility but also a key asset for a company, Mapei products and solutions are made from materials that protect the environment and health of installers and end users and are designed to reduce energy consumption.

Mapei provides the building market with a full range of **20 product lines** covering every field of application: installation of ceramics and resilient materials; additives for concrete; thermal-sound insulation systems; structural reinforcement products; repair and renovation products; and niche products for the market, such as grinding additives for cement works, systems for constructing tunnels and underground works, and products for the shipbuilding industry.

Thanks to its extensive range of **products** and **Technical Assistance** and building-site **consultancy** services, Mapei partners thousands of **projects** worldwide, ranging from major infrastructures to iconic buildings.

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Letter of Recommendation

Prepared for: Job Jo Gilhooly
Ref: **The Tile Portfolio, Kettering**
Request of: Mark Rudge of Mapei UK Ltd

Re: Recommendation for the Installation of 20mm External Porcelain Tiles to a Type 1 MOT Sub-Base

Further your recent conversations regarding the above with Mapei Business Development Manager Mark Rudge, we would submit the following proposal for your consideration.

External Floors

We are informed that the substrates comprise of existing Type 1 MOT hardcore.

Given the above our recommendations for applying the required floorcoverings are as follows:

- Type 1 MOT should be compacted using suitable mechanical means, such as a Wacker Plate, to create a solid base of approx. 200mm.
- This is to be overlaid with Stone Chippings (8mm) compacted using suitable mechanical means such as a Wacker Plate to a solid base of approx. 50-80mm Ensure that falls are created to allow for adequate drainage.
- Apply **Mapei ADESILEX P4**, using a 20mm notched trowel, to the back of a porcelain tile (20mm 600 x 600mm) adopting the combing method and lay the tiles directly onto the compacted stone chippings.
- Using a rubber mallet and level wedges, ensure the tiles are sufficiently compressed and level at the joint with a 5mm minimum grout joint.
- **Mapei ULTRACOLOR PLUS** can be used to grout the tiling once the adhesive has cured.
- All perimeter, intermediate or construction joints can be filled using **Mapei MAPESIL AC** silicone sealant as clause 815 in conjunction with BS5385 Part 3, 2014 clause 6.8 & 7.1.6

The above recommendations are based on the information received.

All recommendations should be read in conjunction with current Mapei Data Sheets and the relevant British Standards.

Contractors should ensure that all substrates are of suitably stable construction to receive the intended finish.

We trust you find our recommendation helpful, but if we can be of any further assistance, please do not hesitate to contact us.

Yours sincerely

For and on behalf of MAPEI (UK) LTD

Mapei UK Technical Services

M40

Stone/ concrete/ quarry/ ceramic tiling/ mosaic

Types of tiling/ mosaic

110 Floor Tiling to External Patio

1. Tiles: Porcelain
 - 1.1. Manufacturer/ Supplier:
 - 1.1.1. Product reference:
 - 1.2. Colour:
 - 1.3. Finish:
 - 1.4. Size: 600 x 600mm
 - 1.5. Thickness: 10mm & 20mm
 - 1.6. Slip potential
 - 1.6.1. Slip resistance value (SRV) (minimum)/ Pendulum test value (PTV) (minimum) to BS 7976-1, -2, -3 or BS EN 14231 (natural stone only):
 - 1.6.2. Surface roughness (Rz) (minimum) to BS 1134:
 - 1.7. Recycled content:
 - 1.8. Other requirements: Care and maintenance see clause 912
2. Background/ Base: New concrete base as clause 370
 - 2.1. Preparation: As clauses: 211, 215, 255, 310, 370 & 471
3. Intermediate substrate: **Mapei MAPETEX SYSTEM** anti-fracture membrane as clause 471
4. Bedding: Thick bed adhesive – solid (floors) as clause 710
 - 4.1. Reinforcement:
 - 4.2. Adhesive to BS EN 12004-1: **Mapei KERAQUICK S1**
5. Joint width: min. 3mm
6. Grout: **Mapei ULTRACOLOR PLUS**
 - 6.1. Type/ classification: CG2 WAF
7. Movement joints: Fill joints with **Mapei MAPESIL AC** or **Mapei MAPESIL AC ECO** silicone sealants as clause 815 in a colour to match grout.
 - 7.1. Location: in conjunction with BS 5385: Part 3 2014 Clauses 6.8 & 7.1.6,
8. Accessories:

110a Floor Tiling to Internal Floors

1. Tiles: Porcelain
 - 1.1. Manufacturer/ Supplier:
 - 1.1.1. Product reference:
 - 1.2. Colour:
 - 1.3. Finish:
 - 1.4. Size: 600 x 600mm
 - 1.5. Thickness: 8-9mm
 - 1.6. Slip potential
 - 1.6.1. Slip resistance value (SRV) (minimum)/ Pendulum test value (PTV) (minimum) to BS 7976-1, -2, -3 or BS EN 14231 (natural stone only):
 - 1.6.2. Surface roughness (Rz) (minimum) to BS 1134:
 - 1.7. Recycled content:
 - 1.8. Other requirements: Care and maintenance see clause 912
2. Background/ Base: Existing concrete base as clause 320
 - 2.1. Preparation: As clauses: 211, 255, 310, 320 & 471
3. Intermediate substrate: **Mapei MAPETEX SYSTEM** anti-fracture membrane as clause 471
4. Bedding: Thick bed adhesive – solid (floors) as clause 710
 - 4.1. Reinforcement:
 - 4.2. Adhesive to BS EN 12004-1: **Mapei KERAQUICK S1**
5. Joint width: min. 3mm
6. Grout: **Mapei ULTRACOLOR PLUS**
 - 6.1. Type/ classification: CG2 WAF
7. Movement joints: Fill joints with **Mapei MAPESIL AC** or **Mapei MAPESIL AC ECO** silicone sealants as clause 815 in a colour to match grout.
 - 7.1. Location: in conjunction with BS 5385: Part 3 2014 Clauses 6.8 & 7.1.6,
8. Accessories:

General

211 Suitability of backgrounds/ bases

1. Background/ base tolerances: To permit specified flatness/ regularity of finished surfaces given the permissible minimum and maximum thickness of bedding. Floor substrates to receive direct tiling should be laid to SR1 as outlined in BS 5385 Part 3 2014 clauses 7.1, 7.2, D.6 and E.1.7.1.
2. New background drying times (minimum)
 - 2.1. Concrete walls: six weeks.
 - 2.2. Brick/ block walls: six weeks.
 - 2.3. Rendering: two weeks.
 - 2.4. Gypsum plaster: four weeks.
3. New base drying times (minimum)
 - 3.1. Concrete slabs: six weeks.
 - 3.2. Cement:sand screeds: three weeks.
 - 3.3. Screed incorporating **Mapei TOPCEM** binder: 24 hours (natural stone three days).
 - 3.4. Screed incorporating **Mapei MAPECEM** binder: 3 hours (natural stone 24 hours).
 - 3.5. **Mapei PLANITOP FAST 330**: 5 hours (min 24 hours before waterproofing).

215 Falls in the bases

1. General: Before starting work, check that where required, falls have been provided in the base. Inform the CA if the falls are inadequate. Do not attempt to provide falls by increasing or decreasing the specified thickness of the bedding material.

255 Suitability of existing bases and conditions

1. Before commencing work the subcontractor must complete a test area and confirm through the Main Contractor that bases will, after the specified preparation, be suitable to receive the specified materials.
2. Installation of materials will be taken as further acceptance of the suitability of the bases and also of the conditions within any given area.

Preparation

310 Existing backgrounds/ bases generally

1. Efflorescence, laitance, dirt and other loose material: Remove.
2. Deposits of oil, grease and other materials incompatible with the bedding: Remove.
3. Tile, paint and other nonporous surfaces: Clean by washing with water containing detergent then with clean water.
4. Wet backgrounds: Dry before tiling.
5. Primers: Check suitability of any intended primer with Mapei Technical Department.

320 Existing concrete/ screeds

1. Loose or hollow portions: Cut out.
2. Making good: Use **Mapei PLANITOP FAST 330** ultra-fast setting repair mortar.

370 New in situ concrete

1. Backgrounds/ bases to be tiled: Remove mould oil, surface retarders and other materials incompatible with bedding by mechanical preparation.
2. Allow concrete to cure for a minimum of 6 weeks.

471 Intermediate substrate - Mapei MAPETEX

1. Type: Anti-fracture membrane.
 - 1.1. Manufacturer: Mapei (UK) Ltd.
 - 1.1.1. Product reference: **Mapei MAPETEX**.
 - 1.1.2. Density: 200g / cm².
 2. Fixing system: Bonded to sub-floor with either **Mapei KERAQUICK S1** incorporating **Mapei LATEX PLUS**.
 - 2.1. Manufacturer: Mapei (UK) Ltd.
 - 2.1.1. Product reference: **Mapei KERAQUICK S1 / LATEX PLUS**.
 - 2.2. Application: 3 mm or 4 mm square notched trowel.
 - 2.3. Substrate surface: Secure, true and even.
3. Joints: 10 mm overlap or butt jointed when installing thin tiles or mosaics.

Fixing

510 Fixing generally

1. Colour/ shade: Unintended variations within tiles for use in each area/ room are not permitted.
 - 1.1. Variegated tiles: Mix thoroughly.
2. Adhesive: Compatible with background/ base. Prime if recommended by adhesive manufacturer.
3. Use of admixtures with cementitious adhesives: Only admixtures approved by adhesive manufacturer.
4. Cut tiles: Neat and accurate.
5. Fixing: Provide adhesion over entire background/ base and tile backs.
6. Final appearance: Before bedding material sets, make adjustments necessary to give true, regular appearance to tiles and joints when viewed under final lighting conditions.
7. Surplus bedding material: Clean from joints and face of tiles without

520 Adverse weather

1. Do not fix tiles if the temperature is below 5°C or in damp conditions. Do not use frozen materials or apply finishes to frost covered surfaces. Comply with the recommendations given in the appropriate Mapei data sheet regarding minimum / maximum temperatures when using proprietary adhesives.

Take adequate precautions to protect work from inclement weather, frost and premature drying out.

530 Setting out

1. Joints: True to line, continuous and without steps.
 - 1.1. Joints on walls: Horizontal, vertical and aligned round corners.
 - 1.2. Joints in floors: Parallel to the main axis of the space or specified features.
2. Cut tiles: Minimize number, maximize size and locate unobtrusively.
3. Joints in adjoining floors and walls: Align.
4. Joints in adjoining floors and skirtings: Align.
5. Movement joints: Where locations are not indicated, they are to be agreed with the CA.
6. Setting out of : Drawing references:
7. Setting out of : Submit proposals.

540 Level of floor tiling

1. Permissible deviation in level from datum for tiling to be ± 3 mm.

550 Flatness/ Regularity of tiling/ mosaics

1. Sudden irregularities: Not permitted.
2. Deviation of surface: Measure from underside of a 2 m straightedge with 3 mm thick feet placed anywhere on surface. The straightedge should not be obstructed by the tiles and no gap should be greater than 6 mm.

560 Level of tiling across joints

1. Deviation (maximum) between tile surfaces either side of any type of joint
 - 1.1. 1 mm for joints less than 6 mm wide.
 - 1.2. 2 mm for joints 6 mm or greater in width.

710 Adhesive bed – notched trowel and buttering method (floors)

1. Application: Floated coat of adhesive to dry base and comb surface with the recommended solid bed trowel.
2. Tiling: Apply coat of adhesive to backs of dry tiles. Fill any ribbed, deep keyed or button profiles. Press tiles firmly onto float coat.
3. Finished adhesive thickness: Within range allowed by manufacturer.

Movement joints/ grouting/ completion

815 Sealant movement joints

1. Joints: Extend through tiles and bedding to base/ background. Centre over joints in base/ background.
 - 1.1. Width: To be advised.
 - 1.2. Primer: N/A.
2. Sealant: **Mapei MAPESIL AC** or **Mapei MAPESIL AC ECO**.
 - 2.1. Colour: To be advised (available in over 40 colours).
 - 2.2. Preparation and application: BS5385: Part 3 2014 Clauses 6.8 & 7.1.6.

835 Metal section movement joints

1. Description:
2. Manufacturer: TBC
 - 2.1. Product reference: TBC
 - 2.2. Colour: TBC
3. Bedding: Tile adhesive.
4. Installation: Centre over joints in base. Set to exact finished level of floor.

885 Coloured grout

1. Staining of tiles: Not permitted.
2. Evaluating risk of staining: Apply grout to a few tiles in a small trial area. If discoloration occurs apply a protective sealer to tiles and repeat trial.

911 Protection

1. Adequately protect and keep clean all completed areas. Clean off any droppings immediately.
2. Staining of tiles:
3. Evaluating risk of staining:

912 Care and Maintenance – Porcelain / Ceramic Tiles Cement Based Grouts

1. Initial clean prior to pre-sealing: **Mapei ULTRACARE MULTICLEANER** diluted 1:200
1. Pre-seal: N/A
2. Clean: To remove cement based residues, after installation, from porcelain/ceramic tile surface, use **Mapei ULTRACARE KERANET EASY** for walls and **Mapei ULTRACARE KERANET** or **Mapei ULTRACARE ACID CLEANER** for floors
3. Protect: N/A
4. Maintain: **Mapei ULTRACARE MULTICLEANER** diluted 1:200 for daily cleaning
Mapei ULTRACARE HD CLEANER for periodic deep clean



This specification, in whatever format, is only valid if it is a true copy of the original specification held on file at Mapei (UK) Ltd. If you are in any doubt, please ask for verification.