M40 STONE/ CONCRETE/ QUARRY/ CERAMIC TILING/ MOSAIC

To be read with Preliminaries/ General conditions.

TYPES OF TILING/ MOSAIC

110 EXTERNAL GEOMETRIC FLOOR TILING to Forecourt Entrance Path
- Standard: BS 5385-2
- Tiles: square edge reproduction Victorian style vitrified mosaic tiles.
  - Manufacturer/ Supplier: London Mosaic Restoration Ltd www.londonmosaic.com
  - Range: Classic 50
  - Colour: Black & White (Victorian)
  - Finish: unglazed
  - Thickness: 9mm
  - Slip resistance value (SRV) (minimum)/ Pendulum test value (PTV) (minimum) to
    BS 7976-1, -2, -3: R10
    Surface roughness (Rtm) (mean) BS 1134: 30.3 microns
  - Background/ Base: assumed to be existing concrete - contractor to confirm once
    existing tiles and associated adhesive has been stripped.
  - Preparation: levelling compound to be applied if required to make good substrate
    Pre-coating: cold applied damp-proofing as J30/130
  - Bedding: notched trowel and buttering method as clause 710.
    - Manufacturer: Mapei www.mapei.com
    - Product: Keraquick Flexible Rapid Adhesive
  - Joint width: 1mm
  - Grout:
    - Manufacturer: Mapei www.mapei.com
    - Product: Ultra Colour Plus C113 Grout
    - Colour: 113 Cement Grey
  - Movement joints: none required

111 NEW CERAMIC WALL TILING TO EN-SUITE BATHROOMS, CLEANERS CUPBOARDS & SPLASHBACKS TO GROUND FLOOR WASH BASINS
- Standard: BS 5385-1
- Tiles: ceramic
  - Manufacturer/supplier: Johnson Tiles www.johnson-tiles.co.uk
    Product reference: Prismatics
  - Colour: PRG103 Old Lace - to be confirmed
  - Finish: Gloss
  - Size: 200 x 100mm
  - Thickness: 6.5mm
  - Background/ Base: reinforced tile backer board as ??/??
    - Preparation: as clauses 210, 255, 310 & 330/390.
  - Intermediate substrate: not required.
  - Bedding: thin bed adhesive as clause 650.
    - Adhesive: Mapei Keraflex
    - Reinforcement: not required.
    - Adhesive to BS EN 12004: Dispersion.
  - Joint width: 3 mm.
  - Grout: Mapei Ultracolor Plus - 112 Medium Grey
    - Type/ classification: not applicable.
    - Admixture: not required.
  - PerimeterTrims: as specified under M40/115
  - Accessories: access panels below basin as ??/??
115 LIGHTWEIGHT PORCELAIN TILING TO ENSUITE VANITY TOPS/SURROUNDS
- Standard: BS 5385-1
- Tiles: lightweight fibre reinforced porcelain
  - Manufacturer/supplier: Domus Tiles  www.domustiles.co.uk
  - Product reference: Kerlite
- Colour: DCKP 13
- Finish: Natural
- Size: cut to suit from 3000 x 100mm sheet
- Thickness: 3.5mm
- Background/ Base: reinforced tile backer board as ??/??
  - Preparation: as clauses 210, 255, 310 & 330/390.
- Intermediate substrate: not required.
- Bedding: thin bed adhesive as clause 650.
  - Adhesive: Mapei Keraflex
  - Reinforcement: not required.
  - Adhesive to BS EN 12004: Dispersion.
- Joint width: not applicable
- Sealant: to perimeter joints
  - Mapei Mapesil AC - 112 Medium Grey
- Exposed edge trims: where noted as required on detail layout drawings:
  - Manufacturer: Schluter Systems  www.schluter.co.uk
  - Product: Quadec Q 60 MC
  - Finish: chrome plated brass

120 RESTORATION OF TESSERAE MICRO MOSAIC FLOOR TILING TO FRONT ENTRANCE LOBBY, HALLWAY & REAR ENTRANCE LOBBY
- Mosaic: traditional tesserae micro mosaic
- Substrate: existing modified suspended timber floor
  - Preparation: existing floor to be surveyed in accordance with clause C51/100 &
    130 and any required remedial works to be executed in accordance with sections
    C51 & C52. The resulting floor should be free of movement/vibration.
- Bedding: assumed mortar screed - to be verified with site survey
  - Preparation: if there is evidence with the existing substrate is breaking up or
    losing adhesion an acrylic based resin may be applied to consolidate it. Large
    cracks in the screed may require an epoxy mortar repair.
- Restorer: London Mosaic Restoration Ltd  www.londonmosaic.com or firm of
  equivalent experience and expertise.
  The specialist subcontractor is to:
  - Survey, assess and document the condition of the existing floor and agree
    restoration works with the Architect prior to commencing works.
  - Check exposed areas of bedding for cracks and report.
  - Deep clean existing fixed tiles to reveal natural colour using an intensive alkali
    based cleaner specifically tailored for the tile type. Acid cleaning agents may be
    used to remove cement based residues. With both alkali and acid cleaning
    products, start off with the lowest concentration of chemical cleaner
    recommended by the cleaning product manufacturer. With any cleaning products
    apply as little liquid as possible and ensure any surpluses are wiped away
    immediately.
  - Salvage, clean and reinstate existing loose unbroken tiles where possible.
  - Carefully cut out any mortar infill laid in place of missing tiles, back to the original
    screed substrate, avoiding collateral damage to adjoining tiles.
  - Removal of any of the original screed substrate is to be avoided.
  - Lay new tiles to complete original patterns. New tiles are to be colour matched
    to existing retained tiles.
  - Apply acrylic sealer as M60/175
- Tile edges: broken
- Joints: to match existing - varies 1-2mm
- Bedding: thin bed cementitious floor tile adhesive
  - Adhesive: To BS EN 12004 type C
- Grout: fine cementitious grout
  - Colour: to match existing aged grout
- Movement joints: not required

121 RESTORATION OF GEOMETRIC FLOOR TILING TO GROUND FLOOR
GENERAL WC's (CONSERVATORY)
- Mosaic: traditional Victorian geometric encaustic floor tiles
- Substrate: existing modified suspended timber floor
  - Preparation: existing floor to be surveyed in accordance with clause C51/100 & 130 and any required remedial works to be executed in accordance with sections C51 & C52. The resulting floor should be free of movement/vibration.
- Bedding: assumed mortar screed - to be verified with site survey
- Restorer: London Mosaic Restoration Ltd www.londonmosaic.com or firm of equivalent experience and expertise.
  The specialist subcontractor is to:
  - Survey, assess and document the condition of the existing floor and agree restoration works with the Architect prior to commencing works.
  - Check exposed areas of bedding for cracks and report.
  - Deep clean existing fixed tiles to reveal natural colour using an intensive alkali based cleaner specifically tailored for the tile type. Acid cleaning agents may be used to remove cement based residues. With both alkali and acid cleaning products, start off with the lowest concentration of chemical cleaner recommended by the cleaning product manufacturer. With any cleaning products apply as little liquid as possible and ensure any surpluses are wiped away immediately.
  - Salvage, clean and reinstate existing loose unbroken tiles where possible.
  - Carefully cut out existing cracked and damaged tiles, avoiding collateral damage to adjoining tiles.
  - Carefully cut out any mortar infill laid in place of missing tiles, back to the original screed substrate, avoiding collateral damage to adjoining tiles.
  - Removal of any of the original screed substrate is to be avoided.
  - Lay new tiles to complete original patterns. New tiles are to be colour matched to existing retained tiles.
  - Apply acrylic sealer as M60/175

GENERAL

210 SUITABILITY OF BACKGROUNDS/ BASES
- Background/ base tolerances: To permit specified flatness/ regularity of finished surfaces given the permissible minimum and maximum thickness of bedding.
- New background drying times (minimum):
  - Concrete walls: 6 weeks.
  - Brick/ block walls: 6 weeks.
  - Rendering: 2 weeks.
  - Gypsum plaster: 4 weeks.
- New base drying times (minimum):
  - Concrete slabs: 6 weeks.
  - Cement: sand screeds: 3 weeks.

215 FALLS IN THE BASES
- General: Give notice if falls are inadequate.
SUITABILITY OF BASES AND CONDITIONS

- 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.
- 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
- Efflorescence, laitance, dirt and other loose material: Remove.
- Deposits of oil, grease and other materials incompatible with the bedding: Remove.
- Tile, paint and other nonporous surfaces: Clean.
- Wet backgrounds: Dry before tiling.

320 EXISTING CONCRETE/ SCREEDS
- Loose or hollow portions: Cut out.
- Making good: ______.

330 EXISTING PLASTER
- Defective areas: Remove plaster that is loose, soft, friable, badly cracked or affected by efflorescence. Cut back to straight horizontal and vertical edges.
- Making good: Use plaster or nonshrinking filler.

340 EXISTING GLAZED BRICK
- Defective areas: Cut out.
- Making good: ______.

350 EXISTING TILES
- Loose or hollow sounding tiles: Remove.
- Making good: ______.

360 EXISTING PAINT
- Paint with unsatisfactory adhesion: Remove so as not to impair bedding adhesion.

370 NEW IN SITU CONCRETE
- Backgrounds/ bases to be tiled: Remove mould oil, surface retarders and other materials incompatible with bedding.

380 NEW PLASTER
- Plaster: Dry, solidly bedded, free from dust and friable matter.
- Plaster primer: Apply if recommended by adhesive manufacturer.

390 PLASTERBOARD BACKGROUNDS
- Boards: Dry, securely fixed and rigid with no protruding fixings and face to receive decorative finish exposed.

450 PREPARING CONCRETE BASES FOR UNBONDED BEDDING - WITHOUT SEPARATING LAYER
- Surface finish: Smooth.
- Surface preparation: Dampen lightly before laying mortar bed.

451 PREPARING CONCRETE BASES FOR UNBONDED BEDDING
- Separating layer: Polyethylene sheet.
  - Thickness: ______.
  - Lap at joints: 100 mm.
SMOOTHING UNDERLAYMENT
- Type: Recommended by adhesive manufacturer.
- Condition: Allow to dry before tiling.

INTERMEDIATE SUBSTRATE
- Type: ______ .
- Manufacturer: ______ .
- Product reference: ______ .
- Thickness: ______ .
- Fixing system: ______ .
- Manufacturer: ______ .
- Product reference: ______ .
- Application: ______ .
- Substrate surface: Secure, true and even.
- Joints: Close butt.
- Treatment: ______ .
- Penetrations: Seal.
- Accessories: ______ .

FIXING

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

SETTING OUT
- Joints: True to line, continuous and without steps.
  - Joints on walls: Horizontal, vertical and aligned round corners.
  - Joints in floors: Parallel to the main axis of the space or specified features.
  - Cut tiles: Minimize number, maximize size and locate unobtrusively.
  - Joints in adjoining floors and walls: Align.
  - Joints in adjoining floors and skirtings: Align.
  - Movement joints: Where locations are not indicated, submit proposals.
  - Setting out of ______ : Drawing references: ______ .
  - Setting out of ______ : Submit proposals.

FLATNESS/ REGULARITY OF TILING/ MOSAICS
- Sudden irregularities: Not permitted.
  - 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, i.e. a tolerance of + 3 mm.

LEVEL OF TILING ACROSS JOINTS
- Deviation (maximum) between tile surfaces either side of any type of joint:
  - 1 mm for joints less than 6 mm wide.
- 2 mm for joints 6 mm or greater in width.

570 MORTAR BEDDING
- Bedding mix:
  - Cement: Portland to BS EN 197-1, type CEM I/42.5.
  - Sand for walls: To BS EN 13139.
    Grading designation: 0/2 (CP or MP) category 2 fines.
  - Sand for floors: To BS EN 13139.
    Grading designation: 0/4 (MP) category 1 fines and between 20%-66% passing
    a 0.5 sieve.
- Batching: Select from:
  - Batch by weight.
  - Batch by volume: Permitted on the basis of previously established
    weight:volume relationships of the particular materials. Use accurate gauge
    boxes. Allow for bulking of damp sand.
- Mixing: Mix materials thoroughly to uniform consistence. Use a suitable forced
  action mechanical mixer. Do not use a free fall type mixer.
- Application: At normal temperatures use within two hours. Do not use after initial
  set. Do not retemper.

578 CRACK CONTROL REINFORCEMENT
- Type to BS 4483: ______ .
- Installation: Place centrally in depth of bed. Lap not less than 100 mm and securely
  tie together with steel wire.
- Corners: Avoid a four layer build at corners.

590 COVED TILE SKIRTINGS
- Sequence: Bed solid to wall before laying floor tiles.
- Bedding: ______ .

600 SIT-ON TILE SKIRTINGS
- Sequence: Bed solid to wall after laying floor tiles.
- Bedding: ______ .

650 ADHESIVE BED - NOTCHED TROWEL METHOD (WALLS)
- Application: By 3 mm floated coat of adhesive to dry background in areas of
  approximately 1 m sq. Comb surface.
- Tiling: Press tiles firmly onto float coat.

651 ADHESIVE BED - NOTCHED TROWEL AND BUTTERING METHOD (WALLS)
- Application: By floated coat of adhesive to dry background in areas of about 1 m sq.
  Comb surface.
- Tiling: Apply thin even coat of adhesive to backs of dry tiles. Fill any ribbed, deep
  keyed or button profiles. Press tiles firmly onto float coat.
- Finished adhesive thickness: 3 mm or within the range allowed by the adhesive
  manufacturer.

652 ADHESIVE BED - BUTTERING METHOD (WALLS)
- Tiling: Apply even coat of adhesive to backs of dry tiles. Fill any ribbed, deep keyed
  or button profiles.
- Finished adhesive thickness: 3 mm or within the range allowed by the adhesive
  manufacturer.

660 ADHESIVE BED - NOTCHED TROWEL METHOD FOR MESH BACKED MOSAIC
  (WALLS)
- Application: By 3 mm floated coat of adhesive to dry background. Comb surface.
- Placing mosaic sheets: Hang in horizontal rows, working downwards. Stagger
  vertical joints. Prevent slippage of sheets. Lightly beat mosaics into adhesive.
- Width, plane and alignment of joints between sheets: To match joints between mosaic tiles.

661 ADHESIVE BED - NOTCHED TROWEL METHOD FOR PAPER FACED MOSAIC (WALLS)
- Application: By 3 mm floated coat of adhesive to dry background. Comb surface.
- Preparing mosaic sheets: Pregout. Remove surplus before fixing.
- Placing mosaic sheets: Hang in horizontal rows, working downwards. Stagger vertical joints.
- Width, plane and alignment of joints between sheets: To match joints between mosaic tiles.
- Paper face: Before adhesive hardens completely, remove paper face. Complete grouting. Wash off glue from face of mosaic.

710 ADHESIVE BED - NOTCHED TROWEL AND BUTTERING METHOD (FLOORS)
- Application: Floated coat of adhesive to dry base and comb surface.
- Tiling: Apply coat of adhesive to backs of dry tiles. Fill any ribbed, deep keyed or button profiles. Press tiles firmly onto float coat.
- Finished adhesive thickness: Within range allowed by manufacturer.

711 ADHESIVE BED - BUTTERING METHOD (FLOORS)
- Tiling: Apply even coat of adhesive to backs of dry tiles. Fill any ribbed, deep keyed or button profiles.
- Finished adhesive thickness: Within the range allowed by the adhesive manufacturer.

730 SEMIDRY CEMENT:SAND BEDDING (FLOORS)
- Mortar bedding mix: 1:3.5-4 cement:sand.
  - Water content: A film of water must not form on surface of bed when fully compacted.
- Preparation: Dampen base.
- Laying: Lay suitably small working areas of screeded bed. Compact thoroughly to level.
  - Finished bed thickness (minimum): ______.
  - Finished bed thickness (maximum): ______.
- Tiling: Within two hours and before bedding sets, evenly coat backs of tiles with neat cement slurry. Beat tiles firmly into position.

MOVEMENT JOINTS/ GROUTING/ COMPLETION

805 SEALANT MOVEMENT JOINTS WITH METAL EDGINGS ______
- Edging material: ______.
  - Size: ______.
- Bedding: Bed in 1:3 cement:sand.
- Installation: Centre over joints in base. Set to exact finished level of floor.
  - Fixing to base: ______.
- Joint width: ______.
- Sealant: ______.
  - Colour: ______.
- Preparation and application: As section Z22.

815 SEALANT MOVEMENT JOINTS ______
- Joints: Extend through tiles and bedding to base/ background. Centre over joints in base/ background.
  - Width: ______.
- Sealant: ______.
  - Colour: ______.
- Preparation and application: As section Z22.

825 STRIP MOVEMENT JOINTS ______
- Manufacturer: ______ .
- Product reference: ______ .
- Colour: ______ .
- Joint width: ______ .
- Fixing to base: ______ .
- Joints: Extend through tiles and bedding to base.

855 CEMENT:SAND GROUTING MIX
- Grout mix:
  - Cement: ______ .
  - Sand:
    - Joint widths of 6 mm or greater: To BS EN 13139, grading designation 0/2 (FP or MP), category 2 fines.
    - Joint widths of 3-6 mm: ______ .
  - Proportions (cement:sand): ______ .
  - Pigment: ______ .
  - Admixture: ______ .
- Mixing: Mix thoroughly. Use the minimum of clean water needed for workability.

875 GROUTING
- Sequence: Grout when bed/ adhesive has set sufficiently to prevent disturbance of tiles.
- Joints: 6 mm deep (or depth of tile if less). Free from dust and debris.
- Grouting: Fill joints completely, tool to profile, clean off surface. Leave free from blemishes.
  - Profile: ______ .
- Polishing: When grout is hard, polish tiling with a dry cloth.

885 COLOURED GROUT
- Staining of tiles: Not permitted.
- 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.

900 TRL PENDULUM FLOOR COVERING SLIP RESISTANCE TESTING
- Floor covering(s) to be tested: ______ .
- Testing authority: ______ .
- Test: To BS 7976-1, -2 and -3.
  - Floor covering condition: ______ .
  - Witnessing/ Certification: Arrange for tests to be witnessed/ certified by: ______ .
  - Report: Submit.

910 TRL PENDULUM FLOOR COVERING SLIP RESISTANCE TESTING
- Natural stone floor covering(s) to be tested: M40/______ .
- Testing authority: ______ .
- Test: To BS EN 14231.
  - Floor covering condition: ______ .
  - Witnessing/ Certification: Arrange for tests to be witnessed/ certified by: ______ .
  - Report: Submit in addition to the requirements of the standard include:
    - Location of the site and a drawing showing the positions of the tests.
    - Description of the surface tested and its condition.
    - Slider material used.
    - PTV at each position tested.
    - Temperature of the test surface.

920 SLIPSTD CLASS TESTING
- Floor covering(s) to be tested: M40/______.
- Testing authority:______.
- Test: To SlipSTD Publicly available specification (SlipSTD PAS) Annex B.
- Report: Submit.