MANDARIN STONE

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# Guide to fixing 20mm Porcelain to compacted sub-base

## Excavation

To allow the new paving to be installed correctly, a certain amount of excavation maybe required. The depth of this excavation will depend upon the thickness of the required sub-base plus the sand and mortar, and the paving flag thickness. An extremely important factor to consider when working out the depth of excavation is that the finished surface level of the paving, when being laid up to an existing structure, must be a minimum of 150mm below the DPC to prevent problems with rising damp in the structure.

## Sub-base – Material selection

Granular sub-base material should be well graded (40mm to dust) Type 1 quality material. Inferior quality material may be liable to failure under loading and be susceptible to frost or moisture movement. Recycled materials such as crushed masonry or concrete can be considered, provided it is well graded and compacts to give a close textured finish. Materials containing organic matter should not be used.

## Sub-base – Construction

Sub-base material should be placed in layers not exceeding 75mm in thickness or twice the nominal maximum aggregate size. Each layer should be fully compacted before the next layer is placed. Sub-base tolerance to be +5 -10mm from specified levels. The surface should be clean and suitably close textured to prevent migration of finer material through the construction.
A minimum longitudinal fall of 1.25% (1 in 80) and cross fall of 2.5% (1 in 40) should be incorporated in the sub-layer construction to provide adequate surface water run-off from the wearing course.

## Rigidly laid paving – Material selection

Mandarin Stone recommends mixing the contents of packs to ensure an acceptable blend can be achieved.
Ordering further materials at a later date may mean a different batch is supplied.

Tiles should be supported on a full workable mix mortar bed (1:4 cement/sharp sand). The mortar bedding should be laid to give a thickness between 15mm and 30mm. The bed must be full with no voids. To increase adhesion to the mortar bed and prevent separation, a slurry bond should be applied to the back of the tile prior to installing onto the mortar bed.
The slurry can be made up from a 1:1 mix of Ardex P51 Primer and water, and then slowly adding cement until a thin paste is formed with a smooth consistency.

The slurry is then applied to the underside of the porcelain tile using a wide brush until an even coat is achieved, just before placing the tile onto the bedding mortar. Gently tamp down onto the mortar bed using an appropriate rubber mallet.
Adjustment may be necessary to ensure that the units are fully supported and do not rock or move, and that desired levels and falls are achieved.

## Cutting

Cutting should be carried out using water cooled, diamond bladed bench power saw. It must however be noted that the final aesthetic finish achieved will depend greatly upon the choice of cutting mechanism and level of skill used by the operator. Equipment and blades specifically for the cutting of 20mm Porcelain should be used.
The cutting blade should be water suppressed whenever cutting the paving to control dust and cool the blade.

**Please note that high quality diamond blades should be utilised at all times. If a blunt or worn diamond blade is used, shelling or chipping of the tile edge could occur.**

If more than 25% of a flag or slab requires cutting then the remaining piece should be cut from the internal corner of the cut to the external corner of the flag or slab, at an angle of preferably 45°.

## Grouting

Use Ardex Flex FL Wall & Floor Grout. Clean out any dust, dirt and adhesive from between the tiles and make sure that the joints are dry.

**Important: Once paving has been laid, rake out any excess mortar between the joints to the base level of the flag with a suitable tool. This is to ensure the supplied grouting material fills all joints to the entire depth and width of the flag joint.**

Grout should be mixed as per instructions ensuring that the powder is added to the liquid to prevent the product from flash setting. Manually mix the grout to reduce the amount of air incorporated into the mix.
Holding a soft rubber grout float, sweep the mixed grout diagonally across the tiles, ensuring that the grout is pushed fully into the joints.

## Cleaning

To finish the installation, clean off as much grout from the surface of the tiles as possible and allow the grout to become touch dry. Clean off the grout residues with a damp sponge wiped diagonally across the tiles. Allow the tiles to dry and buff the surface with a dry cloth. Any stubborn residues may be cleaned off with Fila Deterdek.

**NB. Before grouting commences trial a small inconspicuous area to check that the grout does not stain the tiles. If there is a risk of any staining, the tiles should be fully sealed using a proprietary sealer before grouting begins.**

# Further information

**For technical advice please contact Mandarin Stone on 01600 715444**
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