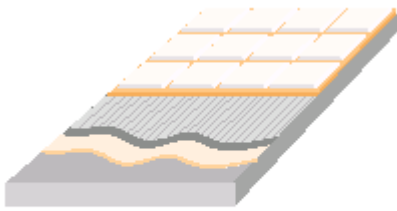


Tiling onto Concrete

When tiling is to be undertaken onto concrete there are really only two states the concrete can be in, either existing where the work is likely to be a refurbishment or remedial job, or fresh, where tiles are being applied on a new build job.

The problems and hence solutions in both cases are very different. The two will be considered separately and comment made on the tiling of steps and risers.



Existing concrete slabs and walls

Preparation

As the concrete is not fresh no additional drying period is required. It is assumed that a damp proof membrane is sited below the concrete to prevent moisture rising through the substrate. If no DPM is sited below the concrete the provision of a surface membrane such as **SDPM** should be considered.

The concrete should be sound, clean and free from loose deposits of dirt, dust, grease and residual adhesives. If the surface of the concrete is poor, the affixing of ceramic tiles may result in a loose top layer, or laitance, being removed exhibiting itself as a tiling failure. Whenever possible, existing concrete surfaces should be mechanically abraded to ensure a sound clean bond can be achieved with the adhesive.

If the concrete is dusting, or the porosity is high, priming is required. **Flexibond** at a dilution rate of 1: 5-6 parts clean water, or **LFP5** should be used and applied using a mop or brush. Coverage will depend on porosity and regularity of the surface. The drying period would be best judged on site, and will also depend on the ambient temperature and humidity.

Do not fix tiles if the ambient temperature is less than 5°C or where damp conditions prevail.

Adhesives

Thin and Thick Bed Adhesive or **Fast-Set** should be used in all areas except using white grouts, light toned marble or translucent natural stone tiles where a white adhesive should be used.

When using porcelain or vitrified tiles, **Vitri-Rapid** or **Vitri-Flex** should be used. This will enhance the bond strength at the adhesive/tile interface. With all Biscem powdered cementitious adhesives, coverage with flat backed tiles on a regular surface at a bed depth of 3mm is approximately 7m², at 6mm approximately 3.5m². For external applications use **Thin and Thick Bed Adhesive**, **Vitri-Rapid**, **Bis-Xtra** or **Vitri-Flow** for large format tiles.

Grouting

Grouting may commence once the adhesive bed has firmed up. Any grout may be used to suit the situation, but it must be remembered that for joints of width 3-mm, wide joint grouts should be used. If smaller grout joints are required then a wall grout should be used. Drying will vary according to the site and ambient conditions. Grouting may commence once the adhesive bed has firmed up.

When using porcelain or vitrified tiles **Vitri-Grouts** should be used as this will enhance the bond strength at the tile/grout interface. Drying will vary according to the site and ambient conditions.

Movement Joints

Any movement joints visible should be followed through the tiling to the surface. Failure to do this may result in excessive movements within the structure being transferred to the tiles with the likelihood of resultant failure of the system. Owing to the complexity of this subject please refer to Technical Bulletin TB4.

New concrete slabs and walls

Preparation

It is stated in the British Standards BS5385 Part 3, Section 14.2.3 that structural concrete should be exposed to air drying after the end of curing for at least 6 weeks before a screed or directly bedded materials are applied, a longer period may be required in wet weather. When a cementitious material such as concrete dries the cement within the material shrinks.

If this is not allowed to occur before tiling is applied, these shrinkage forces may be sufficient to break the bond between the concrete and the adhesive leading to a failure of the tiling. The six-week drying period after curing is generally sufficient for any movement within the concrete to have stabilised sufficiently.

Alternatively for early fixing a reinforced decoupling matting system such as **Watec®2E** or **Watec® 3E** externally can also be used. Call 020 8778 9000 for more information. In this

Tiling onto Concrete

situation a polymer modified adhesive should always be used.

If other coverings are to be applied in addition to tiles such as vinyl sheeting that requires the substrate to be dry before application, it should be noted that a 150 mm thick concrete slab laid on a suitable DPM can take over a year to dry.

With new build a damp proof membrane is usually sited below the concrete to prevent rising moisture. If no DPM is sited below the concrete the provision of a surface membrane such as **SDPM** should be considered.

If the concrete is dusting or the porosity is high, priming is required. **Flexibond** at a dilution rate of 1: 5-6 parts clean water, or **LFP5** should be used and applied using a mop or brush. Coverage will depend on porosity and regularity of the surface. The drying period would be best judged on site, and will also depend on the ambient temperature and humidity.

Adhesives

Thin and Thick Bed Adhesive or **Fast-Set** should be used in all areas except when using white grouts or light toned marble or natural stone tiles where a white adhesive should be used.

When using porcelain or vitrified tiles, **Vitri-Rapid** or **Vitri-Flex** should be used. This will enhance the bond strength at the adhesive/tile interface. For external applications use **Thin and Thick Bed Adhesive**, **Vitri-Rapid**, **Bis-Xtra** or **Vitri-Flow** for large format tiles.

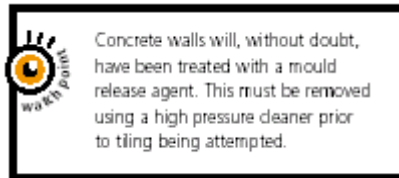
Grouting

Grouting may commence once the adhesive bed has firmed up. Any grout may be used to suit the situation, but it must be remembered that for joints of width 3-mm, wide joint grouts should be used. If smaller grout joints are required then a wall grout should be used. Drying will vary according to the site and ambient conditions.

When using porcelain or vitrified tiles **Vitri-Grouts** should be used as this will enhance the bond strength at the tile/grout interface.

Movement Joints

Any movement joints visible should be followed through the tiling to the surface. Failure to do this may result in excessive movements within the structure being transferred to the tiles with the likelihood of resultant failure of the system. Owing to the complexity of this subject please refer to Technical Bulletin TB4.



Power floated concrete

Power floated concrete slabs are very smooth, dense and impervious surfaces and therefore require special treatment.

Preparation

The power floated surface should be sound, clean and free from loose deposits of dirt, dust, grease and residual adhesives. If the surface is poor, the affixing of ceramic tiles may result in a loose top layer, or laitance, being removed exhibiting itself as a tiling failure.

If this situation occurs the surface should be mechanically abraded to ensure a sound clean bond can be achieved with the adhesive. Priming is then required. **Flexibond** at a dilution rate of 1: 5-6 parts clean water, or **LFP5** should be used and applied using a mop or brush. Coverage will depend on porosity and regularity of the surface. The drying period would be best judged on site, and will also depend on the ambient temperature and humidity.

Alternatively a reinforced decoupling matting system such as **Watec@2E** can also be used. Call 020 8778 9000 for more information. In this situation a polymer modified adhesive should always be used.

Adhesive

Vitri-Rapid or **Vitri-Flex** should be used. These products will enhance the bond strength at the adhesive/substrate interface except using white grouts, light

toned marble or translucent natural stone tiles a the equivalent white adhesive should be used.

Grouting

Grouting may commence once the adhesive bed has firmed up. Any grout may be used to suit the situation, but it must be remembered that for joints of width 3+mm, wide joint grouts should be used. If smaller grout joints are required then a wall grout should used.

Movement Joints

Any movement joints visible should be followed through the tiling to the surface. Failure to do this may result in excessive movements within the structure being transferred to the tiles with the likelihood of resultant failure of the system. Owing to the complexity of this subject please refer to Technical Bulletin TB4.