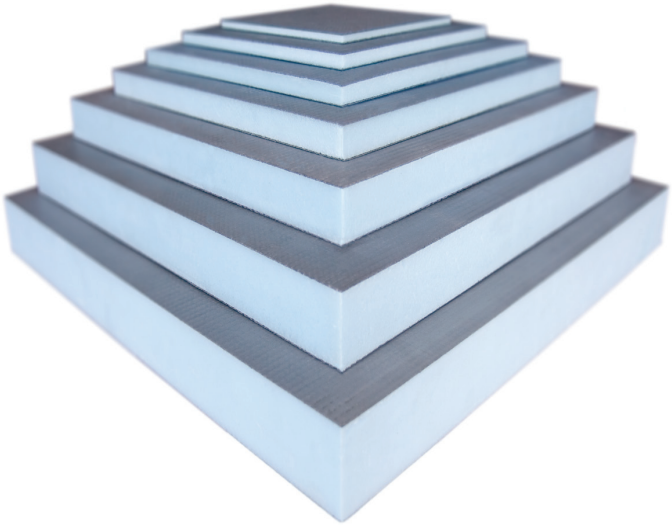
marmox multiboard

Waterproofing • Insulating • Drylining

Tiling onto Balconies Using Marmox Multiboard



There are problems associated with tiling balconies that can be solved using products from Marmox. Marmox Multiboard and Marmox Sloping Multiboard can be used externally in the construction of tiled balconies on concrete or timber substrates. The Multiboard will not allow the passage of moisture through it but it has a 1mm thick coating on the surface designed with just the right amount of porosity to allow cementitious tile adhesives to bond to it.

Properties:	
Thermal Conductivity	0.034W/mK, +/- 0.02
Compressive Strength	0.45N/mm2, at 10% deflection
Coefficient linear Expansion	8 x 10-6/OC
Water Permeability	zero
Flammability	Class O, Euroclass E

Marmox Multiboards are unaffected by extremes of weather and by water. They have a negligible coefficient of linear thermal expansion and also decouple the tiled surface from the sub-floor thereby stopping movement in the sub-floor being transferred to the tiled surface.

marmox multiboard
Waterproofing • Insulating • Drylining

Tiling onto Balconies Using Marmox Multiboard

Problems Marmox MultiBoards Can Solve

Frost Damage

Any water inside the screed, concrete, timber and even tile adhesive will freeze and thaw during a typical British winter. When water freezes and thaws it expands and contracts and can result in the concrete etc. cracking, breaking up and if it is tiled, the tiles may become loose.

One first and most obvious solution is to ensure there is no standing water on the tiled area by constructing the pavement with a gradient of 2mm/m to 3mm/m towards drainage points. This can be done either by building a slope into the screed or by using a Marmox Sloping Multiboard which slopes from 33mm to 10mm over a 1.2m length.

The second good practice procedure is to reduce the potential for the sub-floor to be able to absorb water. In designing the concrete or screed, the appropriate admixtures (air entrainers and plasticisers) should be used to engineer a concrete that will not absorb water and not be prone to frost damage.

The third solution is to use an external grade tile adhesive and always ensure that a continuous bed of adhesive is used with no air pockets that could become water pockets.

Using a waterproof Marmox sloping Multiboard instead of a sloping screed will reduce the material used that is susceptible to frost damage. Marmox Multiboards are resistant to freeze-thaw damage (tested to ASTM666-03) proving that even with a layer of tile adhesive correctly applied they are not damaged by freeze-thaw action.

Marmox Multiboard (standard or sloping) should be the layer immediately underneath the tiling. It should be bonded to the tiles using a tile adhesive suitable for external use.

Heat Damage

Direct sunlight onto the tiled surface will cause the tiles to expand very slightly. Marmox Multiboard has a similar coefficient of linear thermal expansion as a typical ceramic tile consequently the slight movement in the tiles will be mirrored in the board beneath it consequently the grout will not be put under stress and will not crack.

It is also known that greater thermal movement is more noticeable when using larger format tiles and therefore, smaller tiles are often used in external situations.

marmox multiboard
Waterproofing • Insulating • Drylining

Tiling onto Balconies Using Marmox Multiboard

Comparison of Coefficients of Linear Thermal expansions

Material	Coefficient ($x10^{-6}/°C$)
Marmox Multiboard	8
Ceramic Tiles	6 - 9
Marble and Travetine	5 - 8
Concrete	10 - 12
Air Entrained Concrete	8
Steel Frame	12 - 15
Asphalt	50 - 80
Timber Frame	30 - 90

Unsuitable Coverings

Although offering a good level of waterproof protection, bitumen membranes cannot be tiled directly on to. The material is actually not classified as a solid material and this coupled with its oily nature make it both unstable as a base and impossible to adhere to with most tile adhesives.

A layer of Marmox Multiboard above the asphalt will isolate this material and stabilize the tiled surface. It should however be noted that most bitumen membranes found on balconies will be roofing grade that is not designed to be walked on so it may have developed cracks. Before starting to tile such an area, the membrane should be checked and repaired or replaced if necessary.

How To Tile a Balcony

The existing balcony should be of sound construction with no signs of movement. Any fresh concrete (ideally air entrained) should be left to cure for 28 days before attempting to tile upon.

On a Concrete Balcony

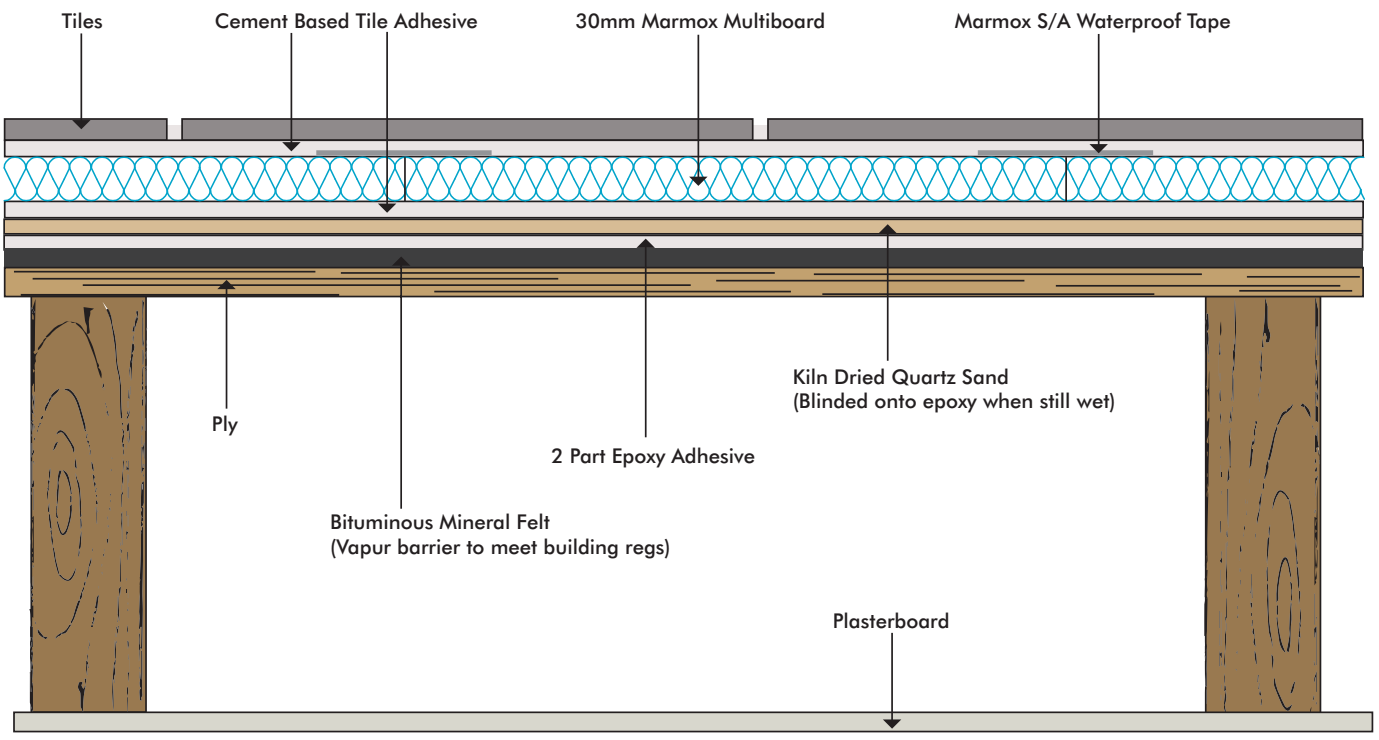
If a slope has been built into the sub-floor, Marmox Multiboard is fixed to the concrete surface using a continuous bed of suitable cement based tile adhesive. Care must be taken to ensure that no gaps are left beneath the Multiboard. If the area has any open sides, proprietary edge profiles should be used in the thin bed of adhesive to secure the Marmox Multiboards. Please consult the adhesive manufacturer to determine the correct grade and the primer for the concrete. Joins should be covered with Marmox S/A Waterproof Tape. If the concrete floor is flat, Marmox Sloping Multiboard should be considered. This is 1.2m x 1.2m, 10mm at one edge, 33mm at the other. The slope can be extended by fixing the sloping board on top of 30mm Marmox Multiboard again using a continuous thin bed of tile adhesive.

marmox multiboard
Waterproofing • Insulating • Drylining

Tiling onto Balconies Using Marmox Multiboard

On a Timber Balcony (above a habitable room) / On a bitumen felt roof

To provide a vapour barrier compliant with building regulations, a bitumen membrane can be used. This should be covered with a 2-part epoxy adhesive onto which kiln dried quartz sand is spread when the adhesive is still wet. After 24 hours, the excess sand should be brushed away and the Marmox Multiboard fixed as detailed above.



marmox multiboard
Waterproofing • Insulating • Drylining

Tiling onto Balconies Using Marmox Multiboard

On a Cantiveler Balcony (no room below)

No vapour barrier will be necessary in such a design. When tiling directly onto timber, a 5mm gap should be left around all the edges to allow for expansion and contraction of the sub-frame. This gap should be filled with a bead of MS Polymer or similar.