

ClipPlate Compact Underfloor Heating System

Tilemaster Adhesives Specification

INTRODUCTION

This specification has been compiled to assist in your project when installing floor finishes onto OMNIE ClipPlate Compact. Prior to commencing works, and once the OMNIE ClipPlate Compact panel and heating pipes have been installed, the underfloor heating pipes must be pressure tested and checked for leaks.

SCREED PREPARATION

Screeds often dry with laitance on the surface. The laitance must be removed before levelling commences by mechanically sanding and/or abrading the surface of the screed. Once the laitance has been removed, the screed should be vacuumed to remove all loose dust, dirt and contaminants and then moisture tested.

OPTIONAL INSULATION LAYER

Tilemaster thermal Backer Board can be used underneath OMNIE ClipPlate Compact to add thermal insulation to the product prior to installing. When installing Tilemaster thermal Backer Board to a concrete or sand/cement screed, Tilemaster Backer Board must be adhered with Tilemaster Ultimate adhesive prior to installing OMNIE ClipPlate Compact.

When installing onto timber substrates, Tilemaster Backer Board must be adhered to the substrate with Tilemaster Ultimate adhesive, and screwed using Tilemaster Backer Board Washers, with coated screws of a suitable length at 300mm centres (supplied by others).

Tilemaster Ultimate has a 30 minute bucket life, which means once mixed, the product needs to be used within 30 minutes. The product can accept light traffic after 3 hours. If it is being used under a surface that has been screwed down over the top, such as plywood or backer board, there is no down time, the board above can be worked on immediately.

MOISTURE TESTING

Screeds must be confirmed dry via consistent moisture readings across the whole floor. The residual moisture content of the screed must be less than 0.5%, alternatively the relative humidity must be 75% or below. If there is no constructional DPM installed within the subfloor, Tilemaster Fast One Coat DPM must be applied to the surface prior to work continuing.

For further information regarding Tilemaster One Coat DPM, moisture contents within screeds, or moisture readings, please contact the Tilemaster Technical Department on 01772 456831 who will be happy to help.

TIMBER SUBSTRATE PREPARATION

Ensure that new or existing boards are dry, i.e. conditioned to the environment in which they will be used. Plywood overlay must be 6mm (minimum), flooring grade, screwed (not nailed) to substrate at 150mm centres. Cement based tile backerboard must be 6mm (minimum), screwed (not nailed) to substrate at 300mm centres and glued.

Ensure there is sufficient ventilation beneath substrate and that the overboard has been fitted competently and will take the weight of the underfloor heating system, leveller, adhesive and the final floor covering being applied. The surface should be vacuumed to remove all loose dust, dirt and contaminants and checked to ensure the boards are dry.

PRIMING

Sand/Cement screeds require priming with Tilemaster Primeplus diluted 3 parts water to 1 part Tilemaster Primeplus prior to the application of Tilemaster Levelflex.

Cement based tile backer boards require priming with Tilemaster Primeplus diluted 3 parts water to 1 part Tilemaster Primeplus prior to the application of Tilemaster Levelflex. New, uncontaminated plywood does not require priming prior applying Tilemaster Levelflex.

Drying time of Tilemaster Primeplus diluted 3:1 would be 30-45 minutes based on ideal drying conditions (20°C).

TILEMASTER LEVELFLEX

Once the OMNIE ClipPlate Compact panel has been installed, the underfloor heating pipes have been hydraulically pressure tested and checked for leaks all of the perimeters of the room must be sealed with a suitable sealant to ensure the Levelflex cannot leak through any gaps. Once this has been completed the Tilemaster Levelflex should be applied to the surface. Tilemaster Levelflex should be applied to a minimum of 6mm thickness over the top of OMNIE ClipPlate Compact panel, giving an overall minimum depth of 20mm of Tilemaster Levelflex.

Tilemaster Levelflex should not be mixed with any more than 5.0 litres of water. Exceeding 5.0 litres of water per 20KG of Tilemaster Levelflex will result in water bleed and therefore extended drying times and a weakened mix.

Tiles can be applied to the surface of Tilemaster Levelflex after 3 hours at 20°C. Decorative floor coverings can be applied to the surface of Tilemaster Levelflex after 24 hours at 20°C.

DECORATIVE FLOOR FINISHES

Advice should be sought from the supplier of the decorative floor covering as to the best adhesive for use with their product onto Tilemaster Levelflex.

PRIMING

Tilemaster Levelflex must be primed with Tilemaster Primeplus prior to the application of Tilemaster Setaflex. Dilute Tilemaster Primeplus at a ratio of 3:1 (3 parts water to 1 part Tilemaster Primeplus) and apply one thin coat. Allow the primer to dry before applying Tilemaster Setaflex. Priming is very important as this will help stabilize the porosity of the substrate and improve the bond strength of the tile adhesive or levelling compound.

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TILEMASTER ANTI-FRACTURE MAT

If natural stone tiles are being installed, Tilemaster Anti-Fracture Mat must be applied to the surface. Tilemaster Setaflex adhesive must be used for fixing Tilemaster Anti-Fracture Mat to the surface of Tilemaster Levelflex. Tilemaster Anti-Fracture Mat must be fixed as follows:

1. Apply a thin bed of Tilemaster Setaflex adhesive to the substrate using a 3mm x 3mm or 4mm x 4mm notched trowel.
2. Roll out the Tilemaster Anti-Fracture Mat (grey side down) into the freshly trowelled adhesive, within the adhesives open time. If the adhesive has started to skin over or set, this adhesive must be removed and a fresh layer applied.
3. Care must be taken to ensure that the Tilemaster Anti-Fracture Mat is fully compressed into the bed of adhesive leaving no air voids. This can be achieved by pressing down and smoothing out the mat with the use of the flat edge of a trowel or a suitable float or roller.
4. When applying rolls of Tilemaster Anti-Fracture Mat side by side, ensure the separate mats are butt jointed at the edges but not overlapping. Remove any excess adhesive that has been squeezed through.
5. Tiling can commence immediately after Tilemaster Anti-Fracture Mat has been applied. Take care not to catch and/or de-bond the Tilemaster Anti-Fracture Mat when applying the layer of Tilemaster Setaflex to fix the tiles.



PLEASE NOTE

- Tilemaster Anti-Fracture Mat is not suitable for bridging movement joints. These must be adopted in the top covering, corresponding with the joints in the substrate;
- Tilemaster Anti-Fracture Mat is not suitable for exterior use or in areas subject to constant immersion;
- Tilemaster Anti-Fracture Mat is not designed to absorb deflection (vertical movement) from substrates.

TILING

Tilemaster Setaflex must be used for fixing the tiles. A white adhesive must be used when grouting with a light coloured grout. Tilemaster Setaflex is available in Standard, Semi-Rapid & Rapid setting options dependent on the working time required during installation.

Only mix small quantities at a time until you have become accustomed to the setting nature of Tilemaster Setaflex. Always mix powder to water and mix to a smooth, lump free consistency. As an approximate guide for powder to water ratio, 20kg of powder requires approximately 4.4 – 4.6 litres of water. Never add water after initial mixing, as this will impair the strength of the adhesive. Product that has started to set must be discarded.

On a flat, even substrate where dry conditions exist, apply adhesive to substrate as a thin floated coat at a uniform thickness of 3mm – 6mm and then comb out using a suitable notched trowel. Each tile must also be “back buttered” with a thin 1 – 2mm layer of adhesive immediately prior to placing tiles into the ribbed bed of adhesive.

Bed tiles into adhesive using a twisting action ensuring full coverage of adhesive between tile and substrate. Regular checks should be carried out to ensure that there are no hollow pockets or voids beneath the tile. Ensure the adhesive is still moist and there is full coverage when tiles are pressed into place with a twist action.

Clean surplus adhesive from the tiles and joints as soon as possible as set adhesive will prove very difficult to remove later. Clean tools immediately after use with clean water.

GROUTING

Tilemaster Grout 3000 must be used for grouting the tiles. Do not start grouting until the adhesive has set. This time can vary depending on temperature and site conditions. In ideal conditions, grouting can begin after 3 hours with Tilemaster Rapid Setaflex, 6 hours with Setaflex Semi-Rapid and 24 hours with Standard Set Setaflex.

Tilemaster Grout 3000 should be mixed with a low speed mechanical mixer to ensure that all ingredients are fully dispersed. Add Tilemaster Grout 3000 to clean water and mix thoroughly until a smooth, creamy, lump free consistency is achieved. After initial mixing allow Tilemaster Grout 3000 to stand for 2 – 3 minutes and briefly re-mix before applying. More powder can be added at this stage if required. As an approximate guide for mixing Tilemaster Grout 3000, 5kg of grout should be mixed with 1.3 litres of water.

Once mixed Tilemaster Grout 3000 will remain workable for approximately 30 – 45 minutes at 20°C, however, this time will be extended by lower temperatures and shortened by higher temperatures. Do not add water after initial mixing as this will cause weakening of the grout and also lead to shrinkage and potential discolouration of the final grout colour.

Using a rubber squeegee or a rubber float, work the mixed Tilemaster Grout 3000 thoroughly into the joints ensuring that the joints are completely filled and void free. Excess grout should be removed as the work proceeds by moving the rubber squeegee/ float diagonally across the tiles to prevent removal of the grout from the filled joints.

Any grout residue left on the surface of the tiles can be removed by wiping off with a damp cloth or sponge once the grout has started to stiffen in the joints. Any dry film can be removed by polishing off with a clean, dry cloth once the grout has hardened within the joints.

NB: When grouting using a coloured joint grout, the following instructions will help achieve a uniform finished colour:

- Do not use bags of grout from different batches on the same grout job.
- Batch numbers are clearly displayed on Tilemaster Grout 3000 packaging.
- Never mix the grout with more water than recommended on the packaging as this could lead to the grout drying patchy.

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- When removing the excess grout from the tiles, allow the grout to have stiffened in the joints.
- When removing the excess grout from the tiles, use as little water as possible to "wash off" the tiles.

All material used during the application of Tilemaster Grout 3000, such as tools and cloths/sponges must be clean and free of contaminants likely to cause staining/discholoration of the finished grout.

GENERAL

Tilemaster Adhesives products must always be applied in accordance with the relevant technical data sheet. The information supplied in this specification is given on results obtained from long experience and extensive field and laboratory testing and is given in good faith. It is to the best of our knowledge true and accurate; however, it may contain information which is inappropriate under certain conditions of use. The company cannot accept responsibility for any loss or damage due to inappropriate use or the possibility of variations of working conditions and of workmanship outside of our control. Nothing herein is to be construed as a warranty or representation. Users should undertake their own tests to determine the applicability of the products for their own particular use. These specifications are guidelines only and reference should be made to the relevant British Standard prior to commencement of works.

For further information contact Tilemaster Adhesives Technical Department on:
01772 456 831 or email: technical@tilemasteradhesives.co.uk

DEFLECTION

The most important property of any substrate is that it must be rigidly braced, firm and stable. It must not be forgotten that the products that are to be used will be rigid and brittle themselves. If there is any movement within the substrate this will be transferred through to the surface. Flexible tile adhesives and grouts enable you to tile to substrates with limited movement and/or vibration, however, they have their limits. The use of an Anti-Fracture Mat or Uncoupling Membrane will absorb some lateral movement coming from the substrate. Irrespective of whether a "flexible" tile adhesive/grout system is used, should there be too much movement in the substrate, the result will be delamination or cracking of the tile surface.

TEMPERATURES

Tilemaster Adhesives products must not be applied when the material, substrate or ambient temperature is below 5°C. Doing so will significantly affect the setting times, the performance and future integrity of the products. At temperatures in excess of 30°C it is likely that setting times will be accelerated to such a level that the material becomes difficult to use.

EXPANSION JOINTS

These must be incorporated into the tiling installation as stated in BS5385. BS 5385-4 advises that stresses may develop within the tiling system as a result of movements due to such factors as drying shrinkage and moisture movements in the background and thermal and moisture changes in the tiling. These stresses, if not properly controlled, can be sufficient to cause loss of adhesion and bulging or cracking of the tiling, sometimes with dramatic effect.

There are two basic types of movement joints in floors: structural: and non-structural joints. A structural joint passes through the tile, screed and floor slab. A non-structural joint passes through the tile and screed only and does not penetrate the floor slab.

Structural joints in the screed and tiles should always align with the joints in the floor slab. The joints need to be of sufficient width to allow the sealant to accommodate the expected movement. The need for non-structural joints around the extreme edges of the floor will depend upon the dimensions of the floor, the screed or the bedding system and the tile type.

The need for non-structural joints around the extreme edges of the floor and others dividing the floors into bays will depend upon the floor dimensions, the screed, or the bedding system and the tile type. Where perimeter joints are required (not more than 2 metres between retaining structures) they should also be provided around features such as columns, steps, etc. Where possible intermediate joints should be located at points of high stress in the concrete base, such as over supporting beams.

Flexible joints should be inserted:

- Over supporting walls and beams at intermediate positions to accommodate deflection of the base and movements in the flooring;
- At floor perimeters and to divide the floor into bays of size not greater than 10m by 10m. Wherever possible they should coincide with structural features e.g. columns and door openings, or they can be planned to provide a decorative paneled effect. NB: Where the substrate includes an underfloor heated system, the floor should be divided into bays not greater than 40 square metres with intermediate joints not greater than 8 linear metres.
- Where tiling is continuous across junctions of different background materials e.g. from screed to timber flooring 6mm Perimeter movement joints should be inserted where the tiling abuts restraining surfaces such as perimeter walls, columns, curbs, steps and plant fixed to the base.

In floors with dimensions of 2m or less between restraining surfaces, perimeter joints are not necessary unless the conditions that can generate stresses are likely to be extreme, for example, violent temperature changes or prolonged immersion in liquid.

TURNING ON THE UFH SYSTEM

Once tiling and grouting has been completed, allow 7 days before turning on the underfloor heating system. When turning on the heating, start at the lowest temperature possible and then gradually increase the temperature of the system by no more than 2°C per day until the required temperature is achieved.

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PRODUCT SUMMARY

Tilemaster Product available from OMNIE	Size	Approximate coverage
Setaflex Adhesive Standard - Grey	20kg bag	5m ² / 20kg bag (based on 6mm bed compressing to 3mm)
Setaflex Adhesive Standard - White	20kg bag	5m ² / 20kg bag (based on 6mm bed compressing to 3mm)
Ultimate Adhesive - Grey	20kg bag	5m ² / 20kg bag (based on 6mm bed compressing to 3mm)
Ultimate Adhesive - White	20kg bag	5m ² / 20kg bag (based on 6mm bed compressing to 3mm)
Levelflex Self Levelling Compound	20kg bag	0.75m ² / 20kg bag for 20mm thickness
Primeplus - SBR Primer	1L or 5L	5m ² /20kg bag (based on a 6mm skim)
Anti - Fracture Mat	20 x 1m roll	50m ² /Litre based on 3:1 mix
Large Mixing Bucket	21 Litre	20m ² (0.85mm thick)
Tilemaster Backer Board	1200 x 600 x 6mm	U-value 1.91W/m ² K
Tilemaster Backer Board	1201 x 600 x 12.5mm	U-value 3.05W/m ² K

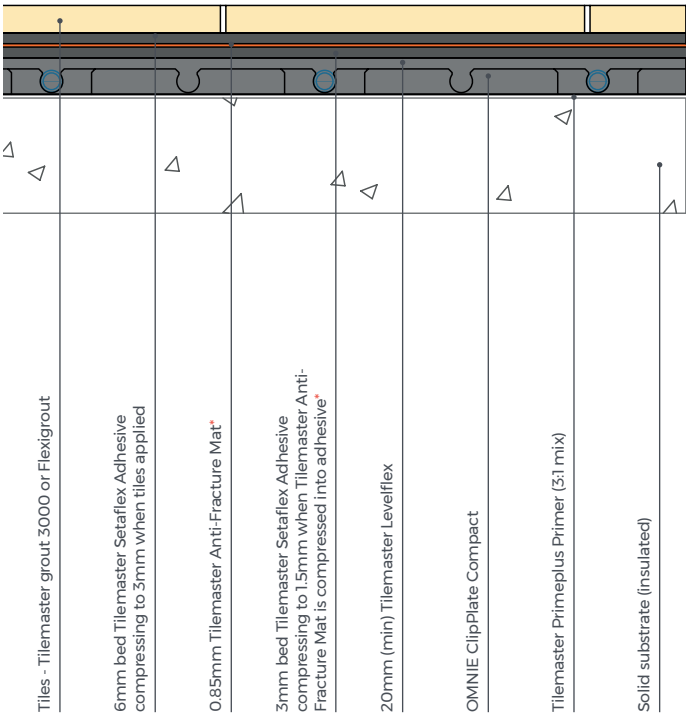
All coverage information is approximate and does not include wastage or allowance for uneven floors/ surfaces.
The onus for quantity required is the responsibility of the purchaser.

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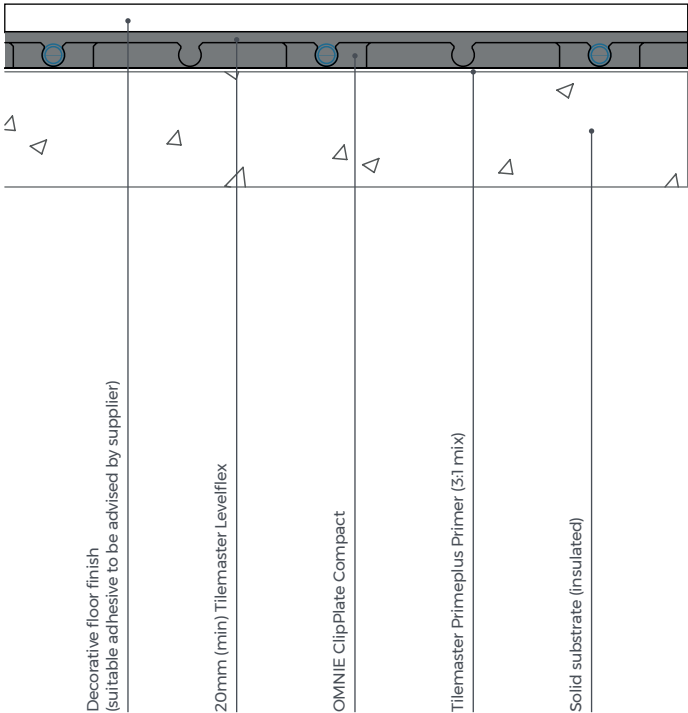
PRODUCT ILLUSTRATIONS

Tile Floor Finishes (solid substrate)

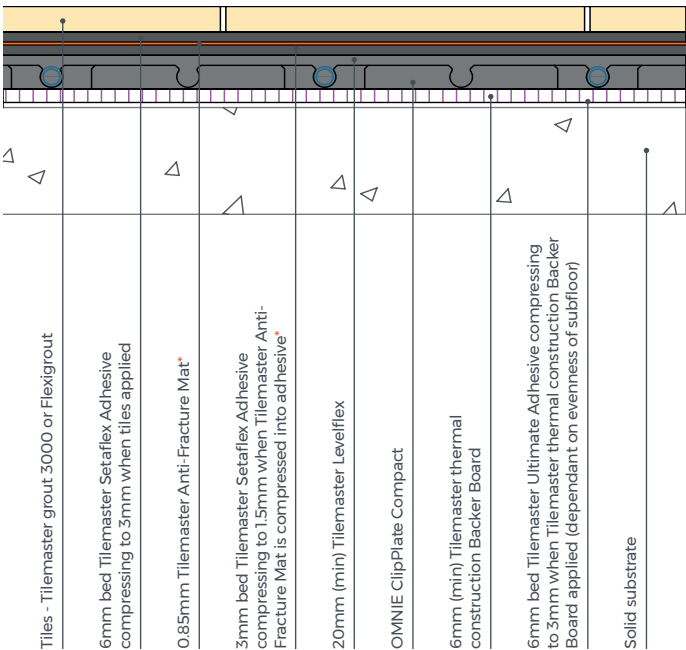


*Dependant on the tiles to be used and confirmation from your supplier these two layers may not be required.

Decorative Floor Finishes (solid substrate)

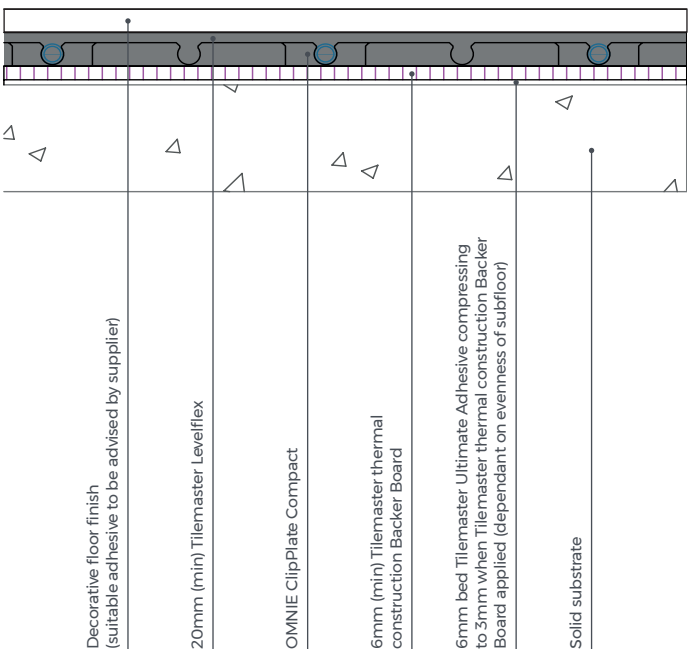


Tile Floor Finishes (solid substrate) with Tilemaster thermal construction Backer Board



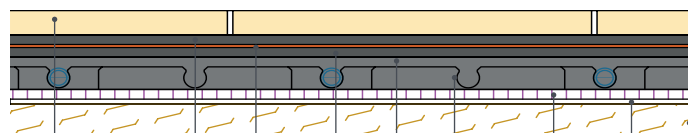
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Decorative Floor Finishes (solid substrate) with Tilemaster thermal construction Backer Board



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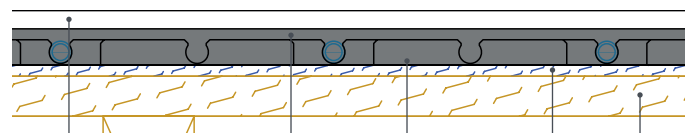
Tile Floor Finishes (timber substrate) with Tilemaster thermal construction Backer Board



Tiles - Tilemaster grout 3000 or Flexigrout	
Joist or batten substrate	
6mm bed Tilemaster Setaflex Adhesive compressing to 3mm when tiles applied	
0.85mm Tilemaster Anti-Fracture Mat*	
3mm bed Tilemaster Setaflex Adhesive compressing to 1.5mm when Tilemaster Anti-Fracture Mat is compressed into adhesive	
20mm (min) Tilemaster Levelflex	
OMNIE ClipPlate Compact	
6mm (min) Tilemaster Ultimate thermal construction Backer Board screwed into timber deck using Tilemaster thermal construction Backer Board washers with coated screws at 300 mm centres	
6mm bed Tilemaster Ultimate Setaflex Adhesive compressing to 3mm when Tilemaster thermal construction Backer Board applied	
Structural Timber Deck	

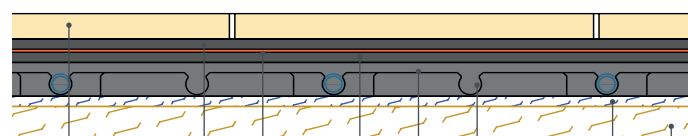
*Dependant on the tiles to be used and confirmation from your supplier these two layers may not be required.

Decorative Floor Finishes (timber substrate)



Decorative floor finish (suitable adhesive to be advised by supplier)	
Joist or batten substrate (insulated)	
20mm (min) Tilemaster Levelflex	
OMNIE ClipPlate Compact	
6mm (plywood (flooring grade) glued & screwed at 150mm centres to the chipboard or 6mm (min) cement based tile Backer Board glued & screwed to chipboard at 300mm centres (if using cement based tile Backer Tilemaster Primeplus primer is required)	
Structural Timber Deck	

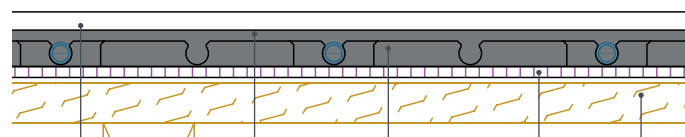
Tile Floor Finishes (timber substrate)



Tiles - Tilemaster grout 3000 or Flexigrout	
Joist or batten substrate (insulated)	
6mm bed Tilemaster Setaflex Adhesive compressing to 3mm when tiles applied	
0.85mm Tilemaster Anti-Fracture Mat*	
3mm bed Tilemaster Setaflex Adhesive compressing to 1.5mm when Tilemaster Anti-Fracture Mat is compressed into adhesive*	
20mm (min) Tilemaster Levelflex	
OMNIE ClipPlate Compact	
6mm plywood (flooring grade) screwed at 150mm centres to the chipboard or 6mm (min) cement based tile backer board glued & screwed to chipboard at 300mm centres (if using cement based tile backer Tilemaster Primeplus primer is required)	
Structural Timber Deck	

*Dependant on the tiles to be used and confirmation from your supplier these two layers may not be required.

Decorative floor finishes (timber substrate) with Tilemaster thermal construction Backer Board



Decorative floor finish (suitable adhesive to be advised by supplier)	
Joist or batten substrate	
20mm (min) Tilemaster Levelflex	
OMNIE ClipPlate Compact	
6mm (min) Tilemaster thermal construction Back Board screwed into timber deck using Tilemaster thermal construction Backer Board washers with coated screws at 300mm centres	
Structural Timber Deck	