



MFLOR Installation instructions

Inspection of the suitability of the area to be installed.

Prior inspection of the areas is vital to the longevity of the product!

Main points to consider during the inspection: -

1. The flatness of the sub-floor.

- Uneven sub-floors will show through the tiles and will spoil the overall appearance of the installation particularly where low light strikes across the floor. British Standards state the sub-floor should be measured using a 3m straight edge placed in contact with the sub-floor and measuring any gaps underneath which should be less than 3mm (SR1). Isolated ridges or dips should also be considered. Any undulations should be smoothed out using an appropriate compound. Always consult the smoothing compound manufacturer for a specification.

2. Cracks in the sub-floor.

- There are many reasons for cracks including stress and settlement. All cracks must be attended to prior to applying a smoothing compound and they must be investigated to ensure the movement has not fractured the membrane under the screed. Just filling the cracks could lead to longer term problems with the floorcovering. If in doubt seek professional advice.

3. Dry sub-floor.

- Sub-floors solid or wood need to be dry. British Standards state a screed should be tested using Hygrometry as described in annex A in the standards. The maximum level of relative humidity in the screed is 75%. There are many manufacturers of moisture testing equipment such as Tramex and Protimeter whose instruments can be used to identify areas for further testing with a hygrometer. These instruments can also be used to check the relative humidity to British Standards. The duration of the test will depend on the sub-straight. Sand and cement will normally require 2 to 3 days against power floated which will require at least 7 days. Never test floors with underfloor heating artificial drying aids (de-humidifiers) switched on. Switch off for at least 4 days prior to setting the hygrometer and they should remain off during the test period.
- As a guide a new sand and cement screed will dry at a rate of 1mm per day for the first 75mm and 0.5mm per day up to 100mm. Thickness greater than 100mm can take considerably longer (150mm up to and over 1 year) given ideal drying conditions. Anhydrite screeds dry at a similar rate providing the surface laitance has been sanded off to allow evaporation or treat as power floated.

- Some types of sub-floors can be coated with a liquid damp proof membrane to prevent excess moisture affecting the floorcovering. Always consult the DPM manufacturer for suitability.
- Rooms below ground level are particularly vulnerable to high moisture levels see section 9 below.
- Wood sub-floor moisture also needs to be checked. This can be done using the equipment described above with spike attachment. These work by pressing the spikes into the wood with the spikes (2) in line with the grain. The maximum moisture level is 15% although ideally 13% should be considered. Moisture levels above 17% need to be investigated. High levels could be caused by poor ventilation under the suspended sub-floor.

4. Contaminated sub-floor for example, oil, wax, varnish, adhesive, paint etc.

- All contamination should be removed prior to apply damp proof membranes, smoothing compounds and adhesive. Some preparation manufacturers have products that will adhere to small amounts of adhesive residues but please check with them for suitability. Oil is a serious problem that may require the removal of the screed or to use an isolating floating membrane. Floating click system tiles can be laid on an isolating membrane.

5. Building expansion join(s)

- Expansion joins are require to be left clear and should be bridged over with a suitable cover strip. These can affect the aesthetics of the floorcovering but with prior consideration they can be designed into the floorcovering.

6. Stable temperature and humidity within acceptable limits.

- A stable atmosphere prevents stress to the floorcovering. An ideal atmosphere is ambient temperature between 16°C (61°F) to 22°C (72°F) and relative humidity maximum 70%. Quick and large changes of temperature should be avoided as this will negatively affect the tiles and adhesive.
- The sub-floor temperature is also important and should be at a minimum 15°C (59°F) maximum 27°C (81°F).

7. Underfloor heating suitability.

- The tiles can be installed over underfloor heating providing the sub-floor surface is controlled to a maximum of 27°C (81°F). The temperature should only be increased by a maximum of 3°C (5°F) each 12 hours. It is suggested that the sub-floor surface temperature is set at a minimum 15°C (59°F) maximum 27°C (81°F).

8. Structurally sound sub-floor i.e. minimal vertical movement and firm screed.

- Excess vertical movement can cause stress to the floorcovering. Measuring this is not easy but as a guide, place a straight edge across the floor and walk next to the straight edge. If the sub-floor dips by more than 10mm you should consider

strengthening. Also if you walk with one foot either side of a joint in the sub-floor and the joints move independently this will transmit through to the floorcovering. In this instance and with most wood sub-floors it is recommended to overlay with plywood of at least 6mm thickness and should be laid at right angles to the run of the board long joints. If in doubt seek expert advice.

- Laitance can be present on new screeds particularly Anhydrite screeds and should be removed by sanding or grinding. The strength of the surface can also be a problem to the effectiveness of the adhesive bond. To check for laitance or friable surface of a screed, scratch the surface with a hard sharp object such as a nail, awl or similar (a "tear" device guarantees a constant pressure when scratching the screed). Scratch two lines approximately 10mm apart horizontally and vertically crossing each other. The appearance of the edges (for example, jagged or clean) provides a hint about the surface firmness of the screed as does the delamination of the surface between the lines. Be careful with Anhydrite screeds as laitance can form to a hard finish if not sanded within two weeks of laying the screed. This surface may appear firm but may delaminate with time and usage.

9. Below ground level areas.

- Ensure these areas are suitably ventilated to prevent a buildup of humidity and to reduce the risk of condensation.
- Moisture can penetrate the walls as well as the sub-floor and could affect the adhesive bond. Always check the moisture level using a suitable instrument or seek expert help.

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10. Setting out / laying plan.

- For optimum appearance measure and strike a line down the middle of the width of the area and another line at right angles across the first line at the middle of the length. These lines can be used to set out the tiles.
- Dry lay a row of tiles in both directions using the lines. If the appearance at each wall looks acceptable use the lines to start your installation. If however the appearance such as small cuts against the wall are present try moving the tiles off the line by half a tile which may give a better appearance. Always consult the customer prior to wet laying to give them the opportunity to make the final decision. Record any decisions for future reference.
- Some tiles are directional (see box for instructions) and will normally have an arrow on the back to aid direction of lay. The instructions from a client may require deviation from the direction of lay to give a different appearance. In these instances always dry lay to show the client what the finished appearance will look like. You should also consider the direction of incoming light as this may change the overall appearance when laying in different directions.
- Start wet set tiles from the centre or adjusted line and click system from the longest wall with the short protruding locking section towards the wall. With lock type allow a 3mm expansion gap against all walls and doors.

11. Acclimatising the tiles prior to laying.

- It is vitally important to allow the tiles to reach equilibrium with the condition of the area of installation to prevent tension issues at a later stage. This is achieved by placing the tiles in small piles in the room to be fitted for at least 24 hours prior to the installation at the temperature the room will normally be at. Ideally keep the temperature and humidity at a constant level even through the night when temperature can reduce to low temperatures. Ideally the temperature should be 18°C (64°F) and relative humidity maximum 70%.
- If the tiles are exposed to high or low temperature just prior to the installation they will move when they reach equilibrium with the room atmosphere and usually prior to the adhesive reaching full cure strength. Too hot will normally result in shrinkage of the tile and conversely too cold will allow the tiles to expand. Conservatories need special attention as they can be very hot and very cold within 24 hours. Control the heat by placing paper over the windows to reduce the sunlight effect on the temperature and artificially heat the room until the adhesive has cured normally 24 to 72 hours (check adhesive manufacturer's instructions).

12. Prevention of colour differences.

- Within the same room, all of the tiles must be from the same production batch. Always check by placing a few tiles from different boxes on the floor and carry out a visual inspection. Consult the manufacturer if there are variations prior to installation. The installer makes the final decision and is responsible if found after installation.

13. Adhesive.

- There are many different adhesives and manufacturers who are developing all of the time so we recommend you consult the relevant manufacturer for their instructions and advice.
- As a guide there are three main types: - wet - pressure sensitive - two part.
- Wet adhesive comes in normal grade for rooms that are not subject to changes in the atmosphere and not in direct sunlight or sources of high heat such as in front of range type cookers that give off heat at low levels. High temperature grade designed for areas exposed to higher temperature ranges such as in direct sunlight and in front of range cookers.
- Pressure sensitive adhesive is normally used in normal rooms that are not subject to temperature changes outside normal conditions as stated in 6 above.
- Two part is used in wet areas and areas subject to high temperatures such as conservatories and immediately in front of range cookers.
- With wet and two part adhesive occasionally lift a placed tile to check the coverage of adhesive which should be minimal 80% of the surface area on the back of the tile.

- The application will also depend on the individual manufacturer's instructions but care must be taken as trowel marks can show if the wrong trowel not is used, the tiles are not rolled after placing or the adhesive is left for too long an open time. *Note: a small notch trowel is generally recommended. Only spread adhesive on an area that can be covered within the open time. Note: open time will depend on the atmosphere. Dry atmosphere will reduce the time, conversely moist conditions will prolong the open time. Temperature will also influence the open time.* When using the two part adhesive which has to be mixed it is best to dry lay and cut so that the tiles can be placed into the adhesive prior to the adhesive setting to a point of no or minimal transfer, which can be as short as 30 minutes depending on the atmosphere conditions.
- You should also consider keeping foot traffic off the tiles during the curing time of the adhesive but at least 24 hours. If unavoidable place a sheet of ply wood over the tiles to distribute the weight. Never cover tiles with a plastic sheet prior to the full cure time of adhesive as this will adversely affect the drying / curing of the adhesive. Also keep the temperature constant throughout the first 24 hour to avoid movement of the tiles.
- Any residues of adhesive that are on the surface of the tile should be removed immediately and prior to the adhesive setting. Never use solvents on the surface of the tiles. If required use a wet wipe (hand wipe type) cloth to remove adhesive. Never use abrasive sponges etc. as this will damage the surface coating.

These instructions are not exhaustive and are issued as general instructions. For more technical advice please contact Matt Bourne 07971 199204
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