Installation of Cemfloor Screed

Learning Objectives

- Overview of cement-based screeds and other types of screeds.
- Types of floor construction where Cemfloor screed can be applied.
- How to prepare a floor area where Cemfloor is being installed.
- Correct process for Cemfloor screed installation.
- The key properties of Cemfloor screed.
- Understanding the drying out process of Cemfloor screed.

What Is Cemfloor Screed?

- Cemfloor is a cement-based flowing screed.
- The screed is a mixture of Sand, Cement, Water, Superplastizer, & Cemfloor binder.
- Cemfloor binder developed by Cemexa Technologies of France.
- McGraths Limestone entered into a partnership with Cemexa Technologies.
- Sole Distribution rights for the UK and Ireland for Cemfloor proprietary additive.
- Cemfloor binder improves a range of properties when added to the screed:
- Reduces total shrinkage, removes segregation & bleed water, improves flowability & finishing properties.
- Cemfloor binder produced in Cong and distributed throughout the UK & Ireland by McGraths.

McG McGRATHS CONG + CEMEXA TECHNOLOGIES = Cemfloor By McG McGRATHS CONG

Types Of Screed Available

1. **Semi Dry Screed:** Sand & Cement, Site mixed bagged products; usually cement based. More labour intensive than liquid screeds.

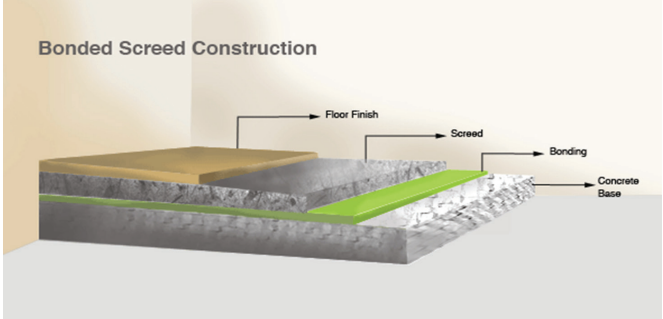
2. **Calcium Sulphate Liquid Screeds:** Anhydrite, Hemihydrate, Gypsum Screeds. Self levelling liquid screeds; not compatible with other cement based products.

3. **Cemfloor Liquid Screed:** Cementitious based self levelling liquid screed. Combines the best of both screed types above.

Floor Construction With Cemfloor

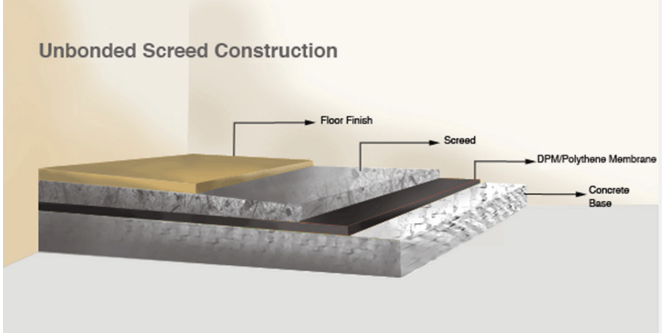
Bonded Floor:

Minimum depth of Cemfloor screed = 25mm. Remove all dust and debris from substrate. Ensure there is no loose/damaged sections on the substrate. (Loose tiles, large cracks etc.) Use suitable bonding agent to ensure solid bonding of the screed to the substrate.



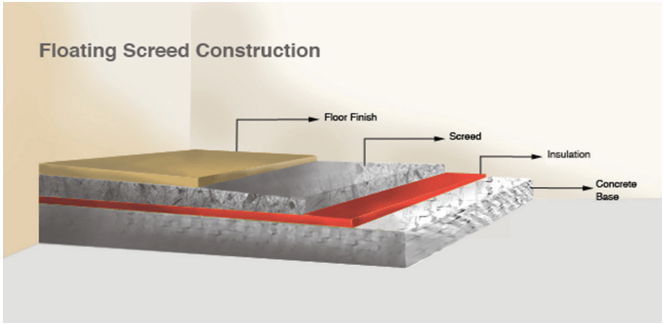
Unbonded Floor:

Minimum depth of Cemfloor screed = 30mm. Remove all dust and debris from substrate. Ensure there are no items on the substrate surface which may damage/puncture the membrane. Use suitable polythene membrane. (1000 gauge or 500 gauge).



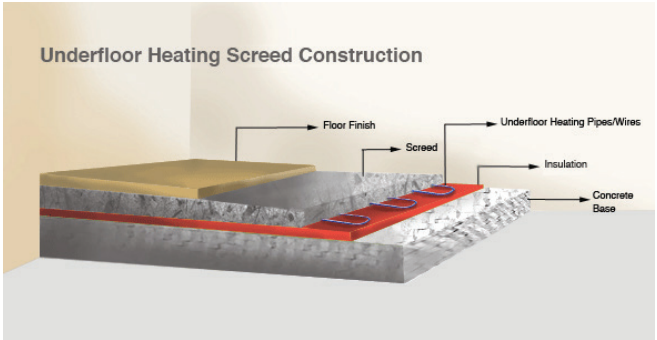
Floating Floor:

Minimum depth of Cemfloor screed = 35mm for domestic and 40mm for commercial. Remove all dust and debris from substrate. Use suitable insulation layer. (Foil backed insulation must be covered with polythene sheet). Insulation with a minimum strength of 100kPa must be used in floating floors.



Floating Floor with Underfloor Heating:

Minimum depth of Cemfloor screed = 25mm above the UFH pipes. Remove all dust and debris from substrate. Use suitable insulation layer. UFH can be commissioned after 7-days and must always be commissioned before coverings are applied. Insulation with a minimum strength of 100kPa must be used in floating floors.



Inspection Of Installation Area

- Ensure the area is suitably prepared and is in adequate condition.
- The area should be dry and weather proof.
- Windows and doors should be in place, if not, temporary provision should be made by the use of polythene, adhesive tape etc.
- For bonded floors the substrate may require mechanical treatment to remove laitance and other adhered material (old loose tiles, timber, vinyl etc.)
- The substrate should be swept and vacuumed to ensure there is no dust remaining.
- If the substrate has excessive cracks then it is recommended to repair the cracks using a suitable system or install a decoupling mat to allow for any further cracking that may occur.
- Insulation & UFH heating pipes should be correctly installed prior to installing the screed.

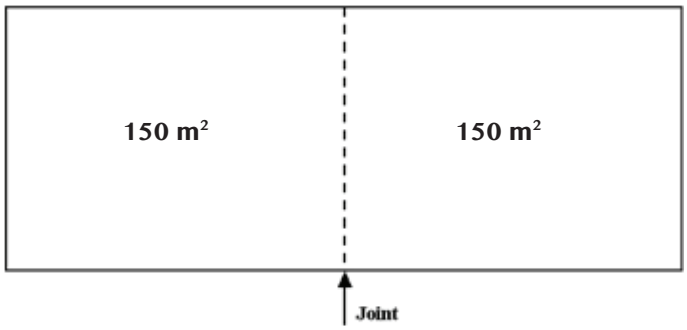
Initial Preparation

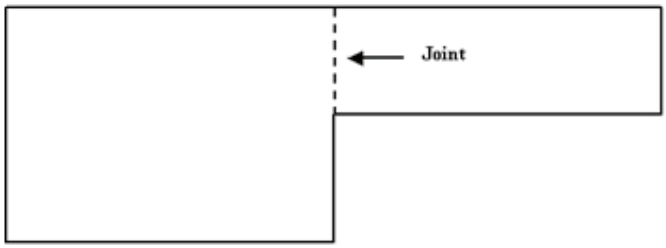
- A minimum 5mm thick compressible border strip should be applied around walls and all upstands, columns, piers and similar.
- Level tripods should be setup to the correct height using a suitable laser level.
- Level tripods should be spaced at 1 to 2 meter center's and cover the entire pour area.
- The pump should be primed in accordance with the manufacturer's recommendations.
- The primer paste should be collected at the end of the pump hose in a bucket and discarded.
- Do not discharge the primer paste into the pour area.

- Before pumping commences each load of Cemfloor should be tested for its flowability and if required adjusted accordingly. The target flow for this product is 220 to 260mm.
- If the screed flow needs to be increased; water can be added on site. As a rule of thumb 5 litres of water per m3 of screed will increase the flow by 10mm.
- The maximum allowable addition of water is 20L per m3.
- **If a client wishes to add extra water to a screed with the correct flow; then they take full responsibility for any future issues that may be encountered.**
- The pump hose should be extended to the furthest point away from the pump on the floor. This is where the pour should begin and work back towards the pump.

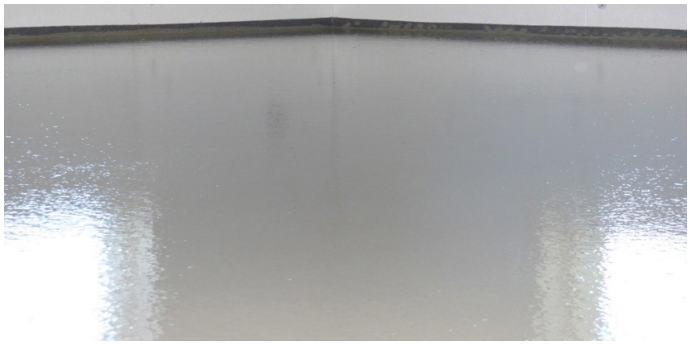
- The Cemfloor screed should be discharged from the mixer truck at a slow consistent rate; ensuring not to overfill the pump and not to let it run empty.
- Cemfloor has a higher viscosity than other types of liquid screed; this helps to prevent splash back of the screed onto walls and finishings.
- Levels are controlled by the operator manning the hose, with reference to the level indicators.
- It is recommended to move the hose in a sweeping motion so that the screed is pumped more evenly across the surface.
- Fresh deliveries of Cemfloor must be well blended into the previous load of screed.

- Cemfloor can be poured to areas of 150m2 in unheated floors and 100m2 in heated floors without the need for control joints.
- At doors and similar restrictions in the plan dimension a control joint should be used.
- In the case of long narrow sections, where the aspect ratio of the floor is greater than 4:1, a control joint or joints are recommended to reduce the ratio.
- Control joints can also be cut into the screed using a floor saw, once the screed has hardened. The depth of the saw cut should be between 1/3rd and 2/3rd the screed thickness. This method is not recommended for screed containing underfloor heating pipes.
- Control joints should be installed in heated screeds between different heating zones within the floor and between heated and unheated zones.
- Precautions should be taken to reinforce areas where the floor contains services inlets and waste pipes that project through the screed, and in rooms that contain piers or columns within the floor. A suitable mesh reinforcement can be simply worked into the screed to provide additional support at these stress





- After the screed is bought up to the finished level; the tripods can be removed.
- It is recommended to use a dappling brush rather than a dappling; as it gives a better finish to the surface of the screed.
- The screed is dappled in two passes at 90' perpendicular to each other.
- The dappling brush should be pushed down into min. 50% depth of the screed. This removes any air that may have been entrapped while placing the screed.
- A surface flatness category of minimum SR2 is easily achieved.



- After the 2nd dappling has been completed; an evaporating water based curing agent is applied to the surface of the screed.
- The curing agent is applied at a very light rate of approx. 30m² per litre of curing agent.
- The curing agent ensures that no moisture evaporates from the surface of the screed and prevents plastic shrinkage cracking on the surface.
- Once the curing agent has been applied the floor area must be sealed for 24-48 hours to allow the screed to harden.
- Avoid letting draughts of air and direct sunlight onto the freshly laid screed. Large windows should be covered to prevent sunlight shining onto the fresh screed.
- Depending on weather conditions; Cemfloor screed should be adequately hard to accept foot traffic after 24-48 hours.

Drying Of Cemfloor Screed

- After 24-48 hours the screed area should be ventilated by opening windows and doors to allow moisture to escape.
- After 7-days the screed can be force dried using UFH if installed. De-humidifiers and other heat sources can also be used to speed up the drying time.
- Underfloor heating should be commissioned and brought to temperature after 7 days in accordance with the instructions with the Cemfloor UFH guidance document.
- Commissioning of underfloor heating must be completed before any floor coverings are applied.
- Cement based tile adhesives can be applied directly to the screed surface without sanding, sealing and priming.
- Certain tile adhesives can be applied without having to dry out the screed completely.
- Using the correct adhesives on non heated screed; tiles can be applied in as little as 5 days after laying!!
- Tiles can be applied to heated floors once UFH has been commissioned and the screed has been allowed to cool down.
- For moisture sensitive floor coverings (i.e. timber, vinyl, etc..) the screed must be dried to the final moisture content as per specs of the floor covering manufacturer. (Usually a final relative humidity of 75%).

ENVIRONMENT I.S. EN ISO 14001:2004 NSAI Certified
HEALTH & SAFETY OHSAS 18001:2007 NSAI Certified
QUALITY I.S. EN ISO 9001:2008 NSAI Certified

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