Cemfloor
By McG McGRATHS CONG

LIQUID SCREED

FROM GD HARRIES

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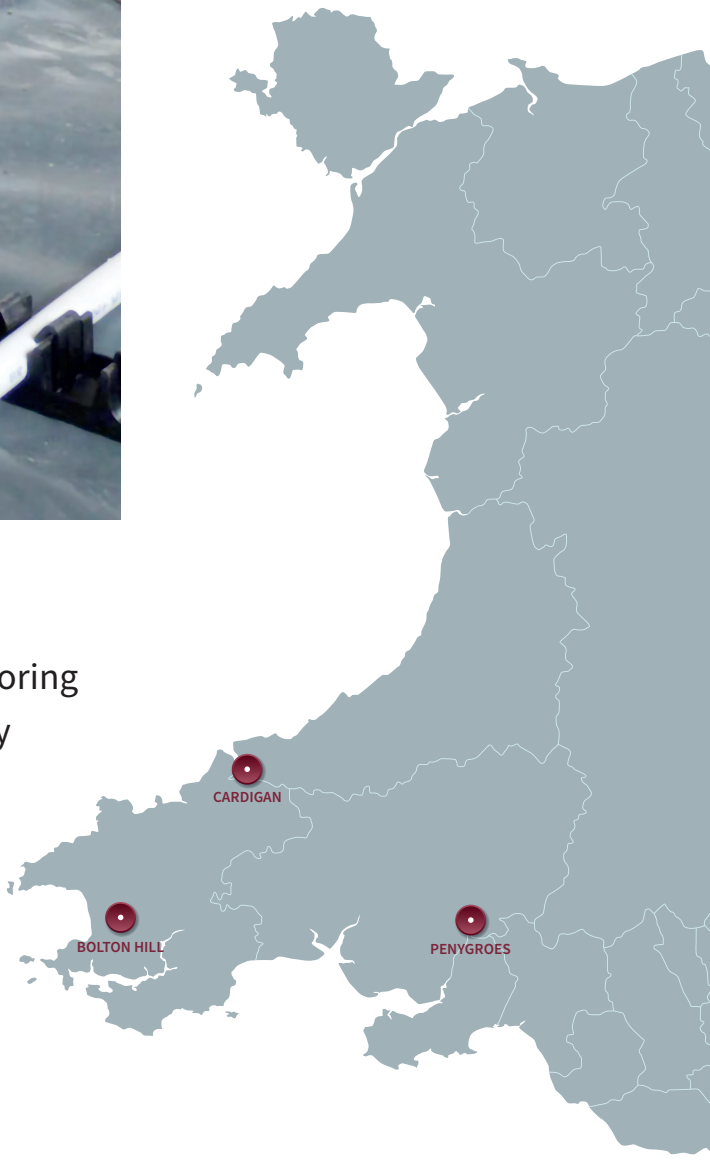

Recognised for its thermal efficiency and superior finish, liquid screed has transformed the screed flooring market. Not only does it provide a smooth underlay for flooring finishes, but it also plays a vital role in enhancing the effectiveness of underfloor heating systems by ensuring optimal heat distribution.

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Liquid screed's rising popularity signals a shift towards more efficient, durable, and versatile flooring solutions that cater to the evolving needs and preferences of both builders and homeowners.

GD Harries are approved channel partners for Cemfloor, the high-performance, free-flowing, self-compacting liquid screed of choice for architects, specifiers and home builders.

Produced from our three manufacturing plants in West Wales (Bolton Hill, Cardigan & Penygroes) we offer an installation service to commercial builders, home owners, self build and regional property developers through a network of approved installers who have completed the required training.

CEMFLOOR

THE SMARTEST WAY TO SCREED YOUR FLOOR

Cemfloor is a high performance screed which complies with EN 13813

There are 3 different products available:
C20/F4 – for domestic / underfloor heating
C25/F5 – for commercial use
C30/F6 – for special uses

CEMFLOOR IS THE PERFECT FLOORING SOLUTION

- Thinner sections can be used compared to traditional screeds. With Cemfloor only 25mm of screed is required above underfloor heating pipes.
- Larger floor areas can be completed without the need for expansion joints (up to 150m² for unheated floors and 100m² for heated floors (Cemfloor Therm)).
- Cemfloor has exceptional Thermal Conductivity.
- Reduced drying times compared to other screeds. Moisture-sensitive floor coverings can be applied when the screed has dried to a moisture content of <2.5%CM.
- Cemfloor is self-compacting, which means that there are no voids around underfloor heating pipes, enabling higher thermal conductivity.
- Minimal drying shrinkage (<0.05%).
- Foot traffic after 24 hours.
- Can be applied in wet areas.
- All floor coverings can be applied with no need for surface sanding.
- Compared to traditional sand cement screed, floors can use more thermal insulation, which leads to a better U value for your building.
- Can be forced dried after 7 days.
- Compatible with all cement-based adhesives, including fast-track systems. No need to use surface primers or sealers before applying adhesives to the screed.
- No surface laitance (dust) after curing.
- Easy installation of up to 1,000m² per day (reduces time & costs).
- Lower running costs for underfloor heating systems when using Cemfloor. This is due to the exceptional thermal conductivity and the ability to lay thinner screeds over the underfloor heating pipes.

Cemfloor screeds are very responsive to underfloor heating. They can be laid in very thin sections and have a high thermal conductivity.

Since Cemfloor is a cement-based screed, floor coverings can be applied much faster than calcium sulphate screeds, which need to be dried to a final moisture content of 0.5%CM, which can delay floor finishings by months.

In addition, floor finishes can be applied once the screed has dried to a final moisture content of 2.5%CM, speeding up the entire build process.

Compared with other liquid screeds, which generally need to be force-dried with underfloor heating, Cemfloor screeds can be used in non-heated floors as they don't require force drying to remove moisture. Using the correct tile adhesives, tiles can be placed in as little as 5 days on nonheated floors.

SUBSTRATE

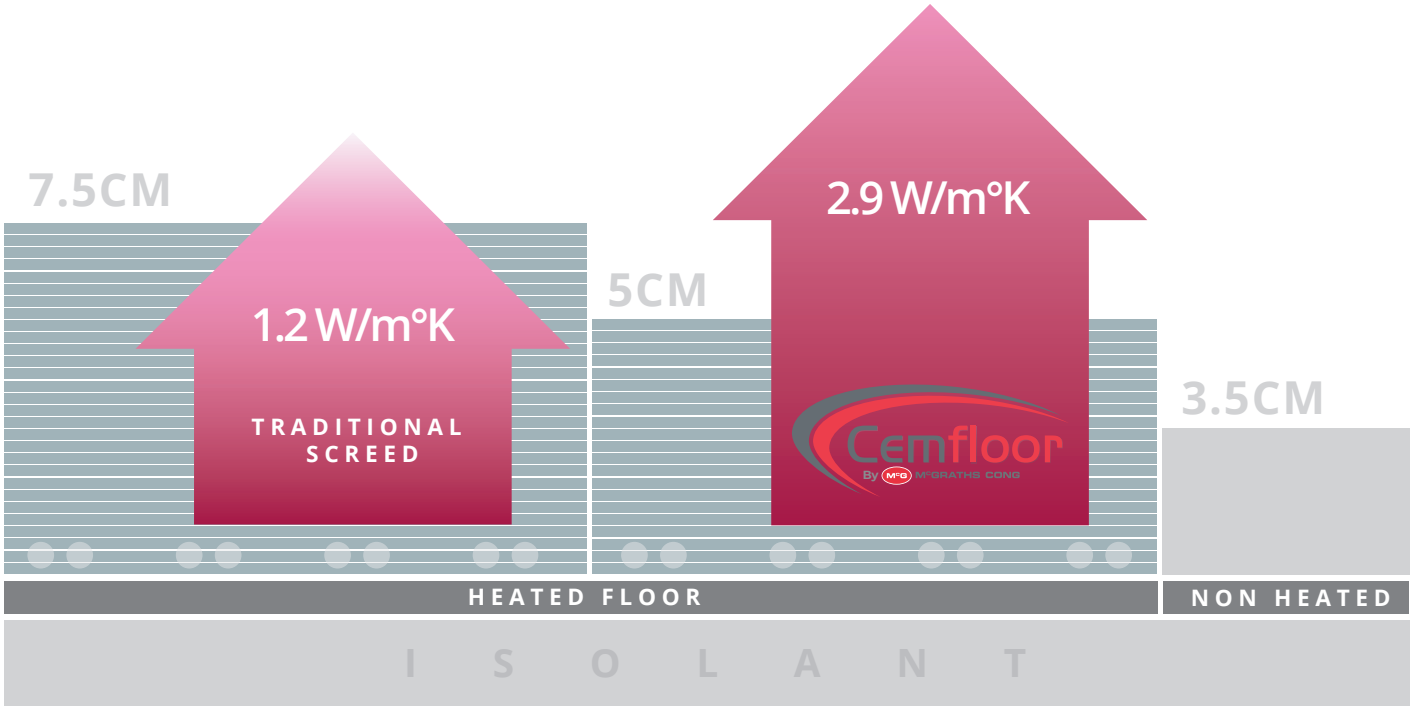
Cemfloor Screed is designed for use as a bonded thick levelling screed on concrete, as a floating screed over thermal or acoustic insulation, or as an unbonded screed on top of a plastic membrane.

FLOOR COVERING

Cemfloor is compatible with all types of floor coverings, cementitious adhesives, damp proof membranes and floor levellers.

APPLICATION

Cemfloor screeds should be used in accordance with BS 8204-7:2003 'Code of Practice for Pumpable Self-Smoothing Screeds'. To ensure a high quality screed it is recommended that application is carried out by specialist screeding contractors recommended by GD Harries who have successfully completed the necessary Cemfloor training.



UNDERFLOOR HEATING GUIDELINES

Cemfloor Therm screeds are cement based flowing screeds. Due to Cemfloors self-compacting properties it is ideally suited for use with underfloor heating systems. Cemfloor Therm screed totally encapsulates the underfloor heating pipework and eliminates air voids which ensures optimal heat transfer from the heating pipework to the screed surface. Cemfloor Therm screeds can also be installed at much thinner depths compared to traditional sand and cement which ensures ultimate controllability of the underfloor heating system.

INSTALLATION

Cemfloor Therm screed MUST only be installed in a totally weather tight environment, this means that the building must be constructed and all windows and doors in place.

Should windows or doors not be in place all apertures must be covered with polythene to create the required weather tightness.

Installation should be carried out by a specialist screeding contractor who has been approved to place Cemfloor. GD Harries work with approved installers and can put you in touch with suitable companies.

For heated screeds there must be a minimum of 25mm screed cover over the top of the underfloor heating pipes.

CURING PROCESS

Once the screed has been placed and finished, the room needs to be sealed for a minimum of 24 hours in the summer, and 48 hours in the winter, until the initial hardening has completed.

The slab will be ready for foot trafficking at this point.

After 24-48 hours, doors and windows should be opened to allow ventilation to assist in the drying process. These should be closed overnight and then re-opened the following day.

COMMISSIONING OF THE UNDERFLOOR HEATING SYSTEM

After 7-days the underfloor heating should be commissioned as follows:

- Switch on the system to run at a flow temperature of 5°C greater than the temperature of the room where the screed is placed.
- Increase the flow temperature in increments of 5°C per day until a maximum flow temperature of 40°C is reached. The air temperature in the areas with underfloor heating must not exceed 25°C. Continue running the UFH until the screed has dried to a moisture content of 2.5%CM.
- The heating must be turned off once the screed has dried to a moisture content of 2.5%CM.
- Reduce the flow temperature by 10°C per day down to 20°C before switching off and allowing to cool (typically for 48 hours).

The commissioning of the underfloor heating should be carried out by an approved underfloor heating contractor and if possible the commissioning sequence should be recorded.

TILING/FLOOR COVERING GUIDELINES

Cemfloor is a cementitious self-levelling flowing screed flooring system comprising a cement, fine aggregate, proprietary Cemfloor Binder, high-range water reducer, and water. GD Harries produce Cemfloor in our quality control approved and operated plants, and deliver to sites via our fleet of mixer trucks. We are able to recommend approved contractors who have been trained to lay Cemfloor flowing screed.

Cemfloor screed can be installed as bonded, unbonded or floating. It is also suitable for use with underfloor heating. For advice on specifications and for proprietary systems please contact us.

CURING AND DRYING OF CEMFLOOR SCREED

Once the screed has been placed and finished, the room needs to be sealed for a minimum of 24 hours in the summer, and up to 48 hours in the winter, until the initial hardening has completed. The screed will be ready for foot trafficking at this point.

After 24-48 hours, doors and windows should be opened to allow ventilation to assist in the drying process.

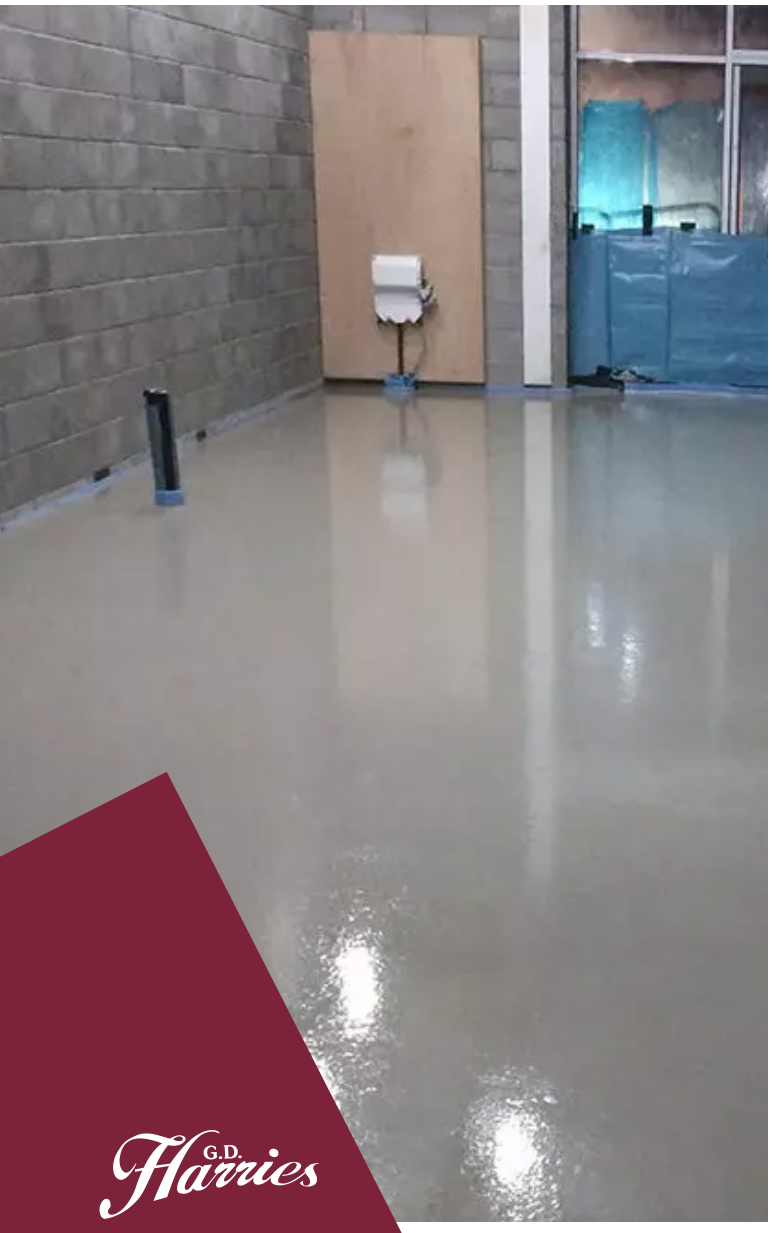
After 7-days the underfloor heating system can be commissioned. See the Cemfloor Underfloor Heating Guidelines above for the UFH commissioning process.

Where underfloor heating is used it must be commissioned and run prior to floor coverings, regardless of how dry the screed may be. This is in line with most floor covering manufacturer guidelines and industry standards. This process forces additional moisture from the screed, and conditions it to thermal movement prior to coverings being installed.

MOISTURE TESTING

Before moisture sensitive floor finishes and adhesives e.g. (LVT, timber, Marmoleum etc.) are laid, the moisture content of the screed should be checked to ensure that it is adequately dry. Three different tests for determining moisture levels are described below.

The British Standards BS8203-1:2017 & BS 8201:2011 method for measuring the moisture condition of a base to receive a floor covering is to use a hair hygrometer. The figure required in accordance with these standards is 75% relative humidity (the required limit for floor finishes). For correct results, the method must be strictly adhered to, including the use of a correctly sized and insulated box sealed to the floor, a sufficiently long test for equilibrium to be reached, typically 48-72 hours, and the use (where appropriate) of an impervious sheet around the instrument.



The European Standard for testing screeds recommends the CM (Carbide Method) of testing. A carbide moisture tester may be used, preferably a model which has an appropriate scale reading on the recording dial. Typical requirements will be 2.5% water by weight for moisture sensitive floor coverings (e.g. ceramics and adhesives). This figure equates approximately to 75% relative humidity. It is critical that the correct weight of both screed and calcium carbide specified by the manufacturer of the test meter be used during testing.

The Tramex CMEX2 and CME4 electronic encounter moisture meters, whilst not in accordance with any applicable standards, have been correlation tested by Cemfloor Liquid Screed in comparison with both “standard” methods and against absolute laboratory results. A high degree of correlation has been noted such that Cemfloor Liquid Screed consider these meters to be the best available guide to measure moisture content. These meters should only be used as a guide for estimating the moisture content and either the hair hygrometer or carbide meter must be used to confirm the moisture content before coverings are applied.

As Cemfloor is a cement based screed; some permeable floor finishes e.g. porcelain tiles can be installed when the moisture content is above the figures above using suitable flexible adhesives.

PREPARATION OF SCREED SURFACE

Unlike calcium sulphate based screeds, Cemfloor does not experience any bleed. This means the surface of the screed will not require sanding to remove surface laitance. It is however recommended that the surface of the screed be lightly abraded to clean and remove any building residue to ensure that there is a good key to receive subsequent floor coverings.

Some types of flooring products such as surface DPM’s, self-smoothing/levelling compounds, resin flooring, microcrete etc. may require the screed surface to be further mechanically prepared to provide a textured surface to enable adequate absorption and increased adhesion between both surfaces. All dust must be removed from the surface of the screed by vacuuming. In all cases the instructions/guidelines from the manufacturer of the flooring product which is being installed must be followed.

Please contact our technical team for any queries regarding floor coverings.

G.D. Harries

TECHNICAL INFORMATION

Cemfloor Therm is produced in an ISO 9001 quality-controlled environment and meets the requirements of EN 13813:2002 'Screed Material for Floor Screeds'.

Screed specification	EN 13813:2002
Compressive strength	C20, C25, C30
Flexural strength	F4, F5, F6
Minimum thickness	Bonded: 20mm Unbonded: Domestic 30mm, Commercial 40mm Floating: Domestic 35mm, Commercial 40mm Over underfloor heating pipes: 25mm above pipes
Shrinkage (28 Days)	<0.05%
Flow rate	230-260mm
Fresh density	2100-2200 kg/m^3
Surface flatness	Min SR2
ISCR test	Category A
Open to light foot traffic	24-48 Hours
Maximum bay sizes	Non-heated floors = 150m^2 Heated floors = 100m^2

*For applications where the floor may be subjected to high loads then a thicker screed depth will be required. Please contact our technical team for assistance regarding specific projects.

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