

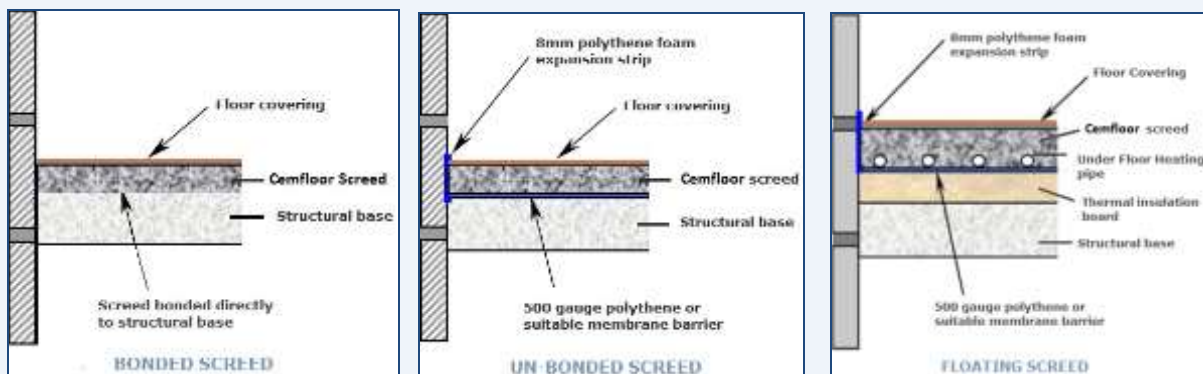


Existing Base Design

The existing base should be designed to withstand all stresses that occur during its service. The screeds function is to provide a level surface for the application of the finished floor covering. It is not intended to give additional structural performance to the floor design. The existing base should have the necessary expansion joints and contraction joints incorporated into its structure. Any cracks occurring in the base after the installation of the screed are likely to have an adverse effect on the screed itself.

Types of Screed Design

- **Bonded Screed:** - Screed is laid directly onto a prepared structural base. The screed should **have a minimum depth of 25mm**, and have a minimum coverage of 25mm over pipes and services.
- **Un-Bonded Screed:** - Screed is laid over a suitable membrane which separates the screed from the structural base. The membrane should be a minimum of 500 gauge, but also may be of suitable thickness and material so as to conform to specifications for use as a damp proof membrane (dpm). Un-bonded screeds should **have a minimum depth of 30mm** and should have a minimum cover of 25mm of pipes and services.
- **Floating Screed:** - Screed is laid over a layer of suitable insulation boards which are supported by a structural base. It is necessary that the insulation boards have the adequate strength and density to support the weight of the screed material. A suitable membrane should be placed between the insulation board and the screed material. This membrane should be a minimum of 500 gauge. A floating screed should **have a minimum depth of 35mm** and have a minimum of 25 mm over pipes and services.
- **Polished Screed:-** Screed is laid as a wearing screed which will be grinded and polished to provide a final floor surface. A suitable membrane should be placed between the screed material and floor (un-bonded) and between the screed material and floor insulation (floating). This membrane should be a minimum of 500 gauge. A polished screed must have a minimum depth of 65mm (domestic) and 75mm (commercial)



Note: Floating screeds for commercial applications should have a minimum depth of 40mm (BS 8204-7)

Limitations

- Kilsaran Cemfloor is **not** suitable for placement on staircases and falls.
- Kilsaran Cemfloor is **not** suitable for outdoor areas.
- Kilsaran Cemfloor is typically **not** suitable for use as a wearing surface however stronger grades can provide a polished wearing surface in some circumstances. Contact Kilsaran for further details.
- Kilsaran Cemfloor is not suitable for applications where the screed depth is less than 25mm.





Preparation of Base

Prior to the installation of the screed it is essential to ensure the base has an incorporated damp proof membrane to protect against rising damp. This membrane may be positioned above or below the base slab. It is the responsibility of the designer and contractor to determine the need for a damp proof membrane (dpm).

When installing an un-boded or floating screed, it is essential to install a suitable edge expansion strip around the perimeter of the floor to the full depth of the screed being installed. This is to allow for movement in the screed. The expansion strip should have a minimum thickness of $\geq 5\text{mm}$.

Pipes, conduits and cables must be securely anchored before work commences. Under floor heating pipes should be filled to ensure there are no leaks and to prevent them from floating during screed installation. Ensure under floor heating systems are turned off prior to installation of the screed material.

When installing a bonded screed, ensure that all dirt, dust and grease are removed from the surface of the base. Large un-interrupted areas should have their surfaces grinded or shot blasted to provide a sufficient key for the screed material to bond to. Once the surface is clean, dry and grease free, it should be vacuumed and then primed with a suitable and approved bonding agent e.g. styrene butadiene rubber (SBR). Install Cemfloor directly onto the wet/tacky bonding agent. The surface strength of the base should be greater than 0.5 N/mm^2 .

When installing an un-bonded screed ensure that all dirt, dust and grease are removed from the surface of the base. Lay a suitable separating membrane over the base, ensuring that all joints are overlapped by 100mm and taped securely. Ensure there are no bubbles or folds in the installed membrane. The membrane can be of sufficient thickness and grade to act as a damp proof membrane (dpm) if required.

When installing a floating screed ensure that all dirt, dust and grease are removed from the surface of the base. Lay insulation boards on a flat surface ensuring all joints are tightly butted, staggered and taped. Lay a suitable separating membrane over the insulation, ensuring that all joints are overlapped by 100mm and taped securely. Ensure there are no bubbles or folds in the installed membrane. The membrane can be of sufficient thickness and grade to act as a damp proof membrane (dpm) if required. Once the membrane is securely in place and taped, under floor heating profiles can be installed over its surface. Care should be taken to avoid tearing or damaging the membrane.

Setting of Levels

In order to achieve accurate levels, we recommend the use of an adequate laser level. Position levelling tripods across the entire floor area, at 1 – 2 metre centres and adjust them to the desired height, whilst working off a pre-determined datum line.

Mixing of Screed

Kilsaran Cemfloor arriving premixed in a readymix concrete truck has each load checked for flow prior to delivery. On arrival on site, the screed material should undergo an additional a flow test, using the Kilsaran vicat plate to ensure the consistency is correct. A flow of 230mm-260mm should be achieved. If the addition of water is required, to achieve the flow tolerance, this should be done gradually at 5 litre.m^3 intervals, each with 5 minutes further mixing and an additional flow test carried out. The maximum allowable rate of water addition is 20 litres/m^3 , however please ensure the flow achieved does not exceed the maximum flow rate.

Note: In all instances mixing/pumping equipment must be pre-approved by a member of Kilsaran's technical team.





Installation

Immediately before commencing installation, a flow test should be carried out on the material to ensure it has the correct consistency. A flow of 230mm-260mm (**max. 250mm for polished screeds**) should be achieved. Slight addition of water may be necessary to achieve a mix within these tolerances. Kilsaran Cemfloor should be used and installed in accordance with BS 8204-7: *Code of Practice for Self Smoothing Screeds*, and this installation guide. Kilsaran Cemfloor is a specialised product and should be only installed by competent, experienced and approved screeding contractors. Kilsaran maintain a list of approved installers for this screed product.

The screed should ideally be placed with a suitable mixing pump, using a 35mm-50mm diameter hose. Pouring of the fresh screed should be carried out carefully in sections, ensuring that height levels are met and ensuring to maintain a wet edge. When installing the fresh screed material it is vital to remember that the working time of the material is approximately 4 hours from the time of mixing. The screed should be placed and finished within this time frame. The screed surface is finished using a dapping bar or 'wobble'. Dappling the fresh surface in two passes at 90°, removes air bubbles and ensures a flat consistent surface. Dappling of the screed should be carried out as it is being placed and not solely when the entire floor area is installed.

Note: For Polishing finishes, the screed should only be dapped lightly in one direction.

The fresh screed slurry contains water and therefore is prone to frost damage. Winter working conditions are similar to those of concrete and should be adhered to. Installation should only take place in temperatures between +5°C and +30°C. These temperatures of the screed area must remain within these parameters for at least 48 hours after installation of the screed.

Joints

Large areas of un-bonded or floating screeds, exceeding 150m² should have a bay joint incorporated into them. Joints may be provided using alkali resistant joint profiles. As per the recommendations of BS 8204, structural joints in the base should be carried through the screed.

Areas in excess of 1000m² can be installed in one day, however where day joints are required shuttering should be used to create a vertical edge. If pouring the next day, the new screed may be butted directly against the previous day's installation. However if a number of days have passed between applications the existing screed edge should be sealed with a suitable acrylic primer before installation of the new screed.

Bay Sizes & Position of Joints

Kilsaran Cemfloor may be laid in much larger areas than conventional screeds, with up to 150m² being possible for rectangular areas. However as aspect ratios increase, control joints are required. These should be incorporated to ensure that aspect ratios never exceed 1:3, i.e. a 2 metre wide corridor should have joints incorporated every 6 metres. Joints are also required at appropriate geometries, such as 'L' shapes etc. Extra control joints are recommended in heated screeds where different heat zones are present and where there is a possibility of substantial solar gain e.g. rooms with large south facing windows or large roof lights. Thresholds at doors etc. should also incorporate a joint. Structural joints in the base must be continued through to the surface of the finished flooring. See below table relating to bay sizes for typical floor constructions.

Non-Heated Screed	Standard	150m ²
	Polished	100m ²
Heated Screed	Standard	100m ²
	Polished	50m ²

Curing & Drying

Kilsaran Cemfloor is a self-drying product, but should have a suitable curing agent applied to the freshly dapped surface during the finishing process. Force drying however is possible after 7 days using the under floor heating system or dehumidifiers. Ensure the newly installed screed is not exposed to winds or drafts during the first 24 hours after installation. Covering the newly installed screed with polythene is not necessary, and may affect the overall drying of the screed. Under floor heating may be turned on after 7 days and have its temperature increased slowly. While Kilsaran Cemfloor is open to foot traffic after only 24 hours (48 hours cold conditions), the screed should not be fully loaded until 4 days after installation .





Aftercare

Preparation for Final Floor Covering

Kilsaran Cemfloor is a cementitious levelling screed and no laitance will form on its surface. Prior to application of the floor covering the screed should be buffed and be checked for moisture content. A residual moisture content of less than 2.5% (75% RH) for bonded floor coverings is required prior to covering. Priming of the screed is not necessary prior to application of the final floor covering. Cemfloor screed may be ready for tiling in as little as 5-10 days (approx. 14 days for heated screeds) and approximately 21 days for bonded wooden floor coverings. In all instances a moisture check should be carried out prior to covering. A hydro hood may be used to check relative humidity, and a carbide bomb test or Tramex meter (CM equivalent) may be used to test for residual moisture.

Site Conditions

Kilsaran Cemfloor is a superior quality cementitious levelling screed. Its performance and finish quality is second to none, but ultimately depends on the conditions in which it was installed and the conditions during the period following its installation. During the screed installation and for the following 24-48 hours, the following requirements must be met;

- The area where the screed is to be installed must be frost free and not subjected to temperatures below 5°C or above 30°C.
- The surface of the newly installed screed must be protected from draughts and direct sunlight.
- The temperature of the area(s) where the screed was laid must not fall below 5°C.

Following the initial 24 hours (48 hours in winter) after installation the following should be undertaken;

- Open windows and doors on the building to create good cross-ventilation and air circulation. This will help to accelerate the drying process.
- Please note a typical 50mm screed will dry to a moisture level of 2.5% in approximately 15-21 days. This however is dependent on site conditions and may dry even sooner.
- Force drying of screeds is possible and will dramatically reduce drying times.

Force Drying

Unlike other conventional screeds, Kilsaran Cemfloor can be forced dried by using the under-floor heating system (if present) or by using a dehumidifier.

Force Drying - Commissioning Under-Floor Heating

Kilsaran Cemfloor can be force dried using the under-floor heating system, once the following steps are adhered to;

- The under-floor heating system may be commissioned and turned on after **7 days** of installation of Kilsaran Cemfloor screed.
- Begin commissioning of the under-floor heating system with a water temperature no greater than **5°C** greater than the room temperature and maintain this temperature **for 2 days**.
- Increase the temperature of the water in the under-floor heating system by no greater than **5°C** per day until a maximum flow temperature of **40°C** is reached and continue until a moisture of $\leq 2.5\%$ CM is achieved.
- During this process ventilation of the room areas is essential to ensure a low air humidity level is maintained. A relative humidity level of 65% or less should be maintained. Ventilate by opening windows on opposite sides of the building.
- Ensure to turn off UFH system (Reduce by 10°C/day until at a temperature of 20°C is reached prior to switching off) a number of days prior to installing floor finishes.

Moisture Testing – Hair Hygrometer Method (RH)

The British Standard for testing a base to receive a resilient floor covering is to use a hair hygrometer to the method defined in BS8203:2001. This provides a non-destructive test method and will give results for Relative Humidity near to 75% (which is generally the required limit for floor finishes) Above this level of moisture the hair hygrometer may not always provide a meaningful reading. For correct results, the BS8023 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 and the use (where appropriate) of an impervious sheet around the instrument.

