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How To Screed a Floor or Roof Using ScreedLite

These instructions are to be used as a guide only in conjunction with advice from the appointed engineer as this is not the only bonded screed method in use. Before starting, please ensure that you wear suitable protective clothing, boots, gloves and safety glasses. If contact occurs with the skin or eyes, wash with water immediately. If irritation continues, seek medical advice.

Screed thickness should be not less than 25mm. In some circumstances, the design thickness of a topping may have to be increased to more than 60 mm, but then there will be an increasing risk of loss of adhesion to the base, due to differential shrinkage stresses. In these circumstances, the use of a reinforcing mesh (ref. 193 or 245) as close to the upper surface as is permissible will assist in restraining differential shrinkage and in controlling cracking. To ensure a good bond to the substrate, a slurry comprising a high-quality bonding agent with cement and sand is strongly advised. It is further advised that good quality microfibres be used to increase strength.

Typical steps to achieve a great bonded screed on floors and roofs

(1) Take a close look at the substrate

For your screed to bond properly, you will need a sound, well-cured substrate or base surface. To check this, scrape a sharp object such as a nail across the surface. It should not dust or crumble. If it does, more preparation may be needed.

(2) Calculate how much ScreedLite you are going to need

Below is a table to calculate the coverage per square metre based on the thickness you need.

Screed Thickness	Typical square meter coverage per bag
25mm	1.46m ²
30mm	1.25m ²
35mm	1.04m ²
40mm	0.83m ²
45mm	0.62m ²
50mm	0.73m ²
100mm	0.37m ²

To calculate the number of bags you require, multiply the length of the area by the width in metres to give you the total number of square metres. Take that calculation and multiply by the required screed thickness in millimetres to give you the requirement in cubic metres.

Alternatively, you can work on 27 bags of ScreedLite per cubic metre eg. a 30mm screed for a 3m x 3m room would be calculated as follows: 3m x 3m = 9m² x 30mm = 270litres (0.27 cubic metres) therefore 0.27m³ x 27 bags = 7.3 bags. It is advisable to order 5-10% additional material to cater for loss and wastage.

1. Prepare the surface properly

Weak, friable concrete is not suitable as a base for a screed or topping as the achievement of adhesion between such material and the screed or topping is not possible. The base concrete should be free of random cracking. Floor screeds or toppings are unable to bridge over cracks in the base and such cracks will in time reflect through the screed or topping. The surface of the base concrete should be reasonably accurate to the required level so that it is possible to place the screed or topping to a uniform thickness.



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The base concrete should be prepared in such a way that it is left with a surface that is uniformly hard, clean, and free of dust, oil or other contamination to ensure a rough surface, suitable for bonding across the whole surface. If the surface is already rough, clean off all loose material and dust. If not, you will need to chip the surface with a hammer and chisel, pick or similar tools. Make sure to scarify the entire surface to expose cleanly the coarse aggregate and remove all paint and loose debris with a stiff broom or vacuum equipment. Any screeds or toppings applied previously to the base should be removed completely. These operations should be delayed until shortly before the screed or topping is laid, in order to prevent any contamination or accumulation of dirt. The base concrete should be kept wet for several hours before the screed is laid. Remove any excess water before grouting.

The use of a slush/grout comprising a bonding agent with sand and cement as a mechanical key is strongly recommended and, if properly applied, should give good results. If a proprietary bonding agent is used, it should be applied strictly in accordance with the manufacturer's instructions. These usually require the screed to be placed while the bonding agent is still tacky. The slush/grout should consist of equal volumes of fine, clean sand and loose cement mixed thoroughly with sufficient water to achieve a creamy consistency similar to PVA paint. It must be stirred continuously and used within 30 minutes (less in hot weather) of making. The slush/grout must be slushed over the area where it is needed, but must then be worked thoroughly into the surface of the concrete by scrubbing with brushes and then brushed out to leave only a thin coating on the concrete without pools of slush/grout in depressions. The brushes used for slushing/grouting should have bristles about 60 to 100mm long and flexible enough to reach down into all the irregularities of the surface of the concrete. Because the screed or topping mix must be laid on the grouted surface while the grout is still visibly wet, i.e. within 10 to 15 minutes of applying the slush/grout, slushing/grouting must be done over small areas at a time, just ahead of laying of the screed. The slush/grout must be made up in small quantities at a time, as needed. NOTE: Under no circumstances should the slush/grout be allowed to dry out before placing the screed/topping as this will cause debonding.

2. Prepare your ScreedLite

Mix ScreedLite using a spade on a flat, clean surface or in a wheelbarrow. Thoroughly mix the contents of the bag as some settlement of the material may have occurred. Using only clean, potable water, mix to an even consistency much the same as a traditional relatively dry, river sand screed. The right consistency should ball in the hand without bleed water and without falling apart. Do not overmix as the perlite particles are fragile and overmixing can pulverize the particles resulting in performance loss.

Do not overwater as too much water will weaken the mix and increase the risk of cracking. A mix that is too stiff with too little water, on the other hand, may not compact properly resulting in the screed crumbling over time.

3. Placing and compaction

For thicker screeds over 50-60mm, the screed may be laid in two layers of equal thicknesses with reinforcement in the middle. Always start in the furthest corner and work towards the exit. Spread the mix and tamp down gently ensuring that there is full contact between the screed and the bonding slurry.

It is **strongly recommended** that you use a board with a surface area of at least 250mm x 250mm as a stamper instead of a straight edge as perlite particles are fragile and rough compaction may pulverise the particles resulting in yield and performance loss.

Check the thickness of your screed continually and use a straight edge and spirit level in all directions to ensure that your screed is level. In the case of a roof screed with a slope, ensure that the angle meets the specification and that there are no dips in the screed which could result in water pooling.

To minimise shrinkage cracking, divide the screed into bays with stress relief joints at approximately 4m intervals to ensure that any movements in the screed coincide with acceptable positions of joints in the floor finish. Joints should be formed either by cutting through with a trowel during laying or by saw cutting after hardening. The joints should be straight, vertical

and at least mid-depth. Saw-cutting should typically not be delayed for longer than 3-4 weeks as there is a risk of random cracking occurring before cutting. Full-depth isolation joints should be formed in separate bonded toppings against walls, columns, and other fixed objects. Such joints should have the same width as those in the base. Except where intermediate joints are required in the topping to divide it into smaller panels than the base, joints in separate bonded toppings should coincide with those in the base, be of the same type and width as those in the base and extend through the full depth of the topping. Intermediate joints dividing the topping into panels of recommended maximum dimensions should be either sawn contraction joints that extend halfway through the thickness of the topping, or butt construction joints. Where bonded toppings are placed on precast concrete elements and the above recommendations are not practicable, the use of a reinforcing mesh close to the top surface of the topping may be used to control differential shrinkage and cracking.

If the screed is to receive carpets or ceramic tiles, use a swirling motion with a wooden float to create a textured paste on the surface. If the screed is to receive glued vinyl tiles, use a swirling motion of a steel trowel to create a smooth paste on the surface.

In the case of a roof screed, ensure that the surface is textured to meet the requirements of the waterproofing system to be installed.

Please note that ScreedLite offers minimal wear-resistance and requires a floor covering eg, tiles, vinyl, carpet or wood. For roof screeds, ScreedLite is not water-resistant and therefore needs to be suitably water-proofed.

Never use dry cement on the surface as these will result in cracking, delamination and dusting.

4. Curing

Immediately after final finishing, keep wet and cover with plastic sheeting for at least 7 days (longer in cold weather). Screeds should be allowed to dry out as slowly as possible after curing to reduce the risk of curling. Where floors are placed in hot weather or without cover from the sun, there is a very real risk of screeds drying out too quickly and cracking. Protection using plastic sheeting or other suitable means is essential and should be kept in close contact with the surface of the screed or the full curing period. Sheeting should overlap the sides and end of the screed and should be held securely in position. Adjacent sheets should overlap by at least 150mm.



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