

INTRODUCTION

Screeds provide a suitable surface to receive the waterproofing, and can also be used to achieve falls and cross falls when concrete slabs and precast concrete units are installed flat. In addition some screeds can provide a level of thermal insulation and contribute to the U-value of the roof.

Sand and cement screeds have a high thermal conductivity and do not significantly contribute to the overall thermal transmittance value of the roof. Aerated screeds and lightweight aggregate screeds bound by cement or bitumen have a lower thermal conductivity and will make a small contribution to the U-value when dry. The main insulation will normally be added above the screed.

Aerated and lightweight aggregate screeds are normally laid by specialist contractors and their advice and recommendations should be followed. These screeds should also be protected from damage by other trades.

Wet screeds which contain large quantities of water cannot be covered by the waterproofing membrane on the same day. A period of time is necessary to allow for drying and curing so that the top surface is suitable to accept the waterproofing. If the screed cannot be protected from rain, drainage holes should be formed in the deck.

SAND AND CEMENT SCREEDS

Sand and cement screeds are normally mixed in the ratio 4:1 and the surface should be finished with a wood float.

The screed should be laid direct to the deck to obtain a good key. It should not be laid continuously but in areas not exceeding 10m², to reduce the incidence of cracking due to drying and shrinkage. The screed contains considerable amounts of water and the surface should be adequately cured and dry before the roofing specification is applied.

AERATED SCREEDS

Portland cement, water and a foaming emulsion are combined to produce a cellular material which offers a hard surface when dry.

The insulation value should only be taken into account when it is reasonable to assume that the screed will be efficiently drained and dry.

LIGHTWEIGHT AGGREGATE SCREEDS: CEMENT BONDED

Suitable lightweight aggregates are formed from expanded clay or sintered pulverised fuel ash, bonded with a cement binder.

The material must be laid soon after mixing otherwise the cement binder may dry and not bond the aggregate together. A 13mm sand and cement topping is necessary to give a smooth level surface for the roofing specification. Walkboards must be used when applying the topping to prevent displacement of the aggregate.

The insulation value should only be taken into account when it is reasonable to assume that the screed will be efficiently drained and dry.

LIGHTWEIGHT AGGREGATE SCREEDS: BITUMEN EMULSION BONDED

The lightweight aggregate consists of expanded clay bonded together with a bitumen binder. This screed does not require a topping, only the passage of a light roller before the application of the waterproofing; this is not to compact the screed but to form a level surface.

Only as much screed should be laid as can be waterproofed the same day. It is recommended that this type of screed is laid with an underlay of bitumen roofing. This will allow a temporary seal to be formed between the underlay and the waterproofing to fully protect the screed from overnight rain.

PERLITE/BITUMEN SCREEDS

Perlite and bitumen binder is mixed in the factory and supplied bagged. It is laid as a loose fill to prepared gauges or screeding bars, and then compacted by rolling. There are no delays from drying and curing and the waterproofing can follow immediately.

Under normal conditions of internal humidity, this type of screed should be laid without an underlay. If a vapour barrier or vapour check is required by the humidity conditions, a smooth even finish to the roof slab is needed to prevent the formation of voids under the vapour barrier and ensure successful compaction of the screed by roller. Perlite is an efficient insulation formed from expanded autoclaved rock. Perlite bitumen screeds have good resistance to moisture. The screed may retain a rather loose granular texture not suitable to receive built up roofing without loading coats as a precaution against wind. Perlite screeds are normally for use under mastic asphalt, and can accept light pedestrian traffic.