RonaScreed SBR

SBR admixture for site batched polymer screeds

Description

RonaScreed SBR is an admixture for site batched screeding mortars and fine concretes. The mix design for each is RonaScreed SBR admixture, cement, medium grade sharp sand, aggregate as determined by the mix design, plus water. The components are measured by weight (or by volume using batch boxes) and mixed using a forced action mixer.

Bonded screeds are primed with a mixture of RonaScreed SBR and cement, which achieves monolithic adhesion to correctly prepared concrete or screeds.

RonaScreed SBR screeds are used to lay new screeds and toppings as thin as 10mm bonded or 35mm unbonded and floating. The cured mortar bonds securely to suitably prepared surfaces and is water resistant.

Features

- **improved physical properties**
- **excellent wear resistance**
- **rapid drying**
- **user friendly mix designs**
- **reduced application thickness**
- **excellent resistance to the passage of water**
- **can be laid to falls**
- **internal and external application**

Mix Design	Minimum thickness			
	Bonded	Unbonded	Floating*	Heated**
Mix 1	10mm	35mm	35mm	40mm
Mix 2	25mm	50mm	65mm	65mm
Mix 3	15mm	-	-	-

Notes:
* minimum application thickness for light duty usage (residential)
** minimum application thickness for light duty usage (residential) when used with 16mm diameter underfloor heating pipework. Minimum 20mm cover to pipework to be maintained.

Slip resistance of RonaScreed Mix 1 & Mix 3

Slip resistance (BS 8204-3 Annex A1)	
Steel float finish (dry)	PTV 57
Steel float finish (wet)	PTV 46

Mix Designs

	Mix 1	Mix 2	Mix 3
Cement (CEM II 42.5)	50kg	50kg	50kg
0/4mm screeding sand	200kg	200kg	150kg
3-6mm granite	-	-	50kg
RonaScreed SBR	10 litres	5 litres	10 litres
Water addition	See note below	See note below	See note below
Yield per mix	0.12m^3	0.12m^3	0.12m^3
Wearing screed	yes	no	yes

Note: Water addition
Water addition will depend on the sand water content. To test for correct consistency a ball should be made of the mortar, squeezing of the ball should not produce free liquid. When the ball is pulled apart it should separate in two pieces without crumbling.

Physical Properties

	Mix 1	Mix 2	Mix 3
Compressive Strength (N/mm²)			
1 day	> 12	> 11	> 20
3 days	> 32	> 30	> 40
7 days	> 40	> 34	> 56
28 days	> 45	> 40	> 60
Tensile Strength (N/mm²)			
7 days	> 4.0	> 3.0	> 4.5
28 days	> 4.5	> 3.5	> 5.0
Flexural Strength (N/mm²)			
7 days	> 10	> 6.5	> 9.0
28 days	> 10	> 7.0	> 10
Abrasion resistance (BS EN 13892-4)			
Value	AR2	N/A	AR0.5

All quoted data is based on tests conducted at 20°C by casting 100mm cubes which are air cured. Results shown are typical strengths achieved by casting and curing cubes in laboratory conditions; site strengths will be lower.

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Working temperatures
RonaScreed SBR screeds can be used in most weather conditions and in a wide temperature range, typically from +5°C to 25°C and above. Note that at high ambient temperatures the working time of the mix will be reduced; it will be increased at lower temperatures. In cold weather the surface temperature of the laid screed (not the air temperature) should be maintained at above 5°C during construction and for four to five days after laying. In this way the screed will normally achieve sufficient strength to resist damage by freezing.

Substrate requirements
The substrate to which RonaScreed SBR screeds are to be bonded must be structurally sound and stable. Minimum compressive strength should be 25N/mm^2 and minimum pull-off strength should be 0.8N/mm^2.
The base should be dry (<75%RH) and should incorporate an effective DPM. In the absence of a functioning DPM, use RonaFloor Epoxy DPM beneath the screed (refer to separate data sheet).

Preparation
For bonded application, surfaces should be vacuum shot blasted, planed or scabbled to expose aggregate, remove laitance and provide a mechanical key. All grease and oil must be removed. Dust, debris and loose material must be removed by vacuuming. Any defect or weakness in the substrate may result in failure of the topping or screed applied to it. The recommendations given in BS8204-3 section 7 should be followed, to assess the suitability of the substrate and ensure the performance of the topping. When repairing concrete with RonaScreed SBR mortar, repair perimeters must be saw cut and the concrete scabbled as required, to allow the minimum depth of mortar to be placed throughout.

For unbonded application, all sudden deviations in the substrate levels may be points of restraint (causing cracking), therefore should be removed before application of a polythene slip membrane.

For floating application, ensure the base provides a level bearing surface for the insulation to prevent rocking of the boards. Ensure the insulation is sufficiently strong to support the anticipated load transmitted through the screed without deforming. Apply a suitable slip membrane (500 gauge polythene) over the insulation prior to the application of the screed.

For unbonded and floating application, position isolation joints in doorways and around all perimeters and openings in the screed to prevent restraint by fixed elements, thus ensuring free movement of the screed.

Surface wetting
For bonded application, the prepared surfaces must be thoroughly wetted with clean water. Very porous surfaces may require soaking for up to 24 hours. All surplus water must be removed before the primer is applied.

Priming
Brush apply a coat of RonaScreed SBR / cement primer mixed 1:1 by volume to the damp surface immediately before applying the screed, at the rate of 3-4m^2 approximately per litre of RonaScreed SBR. Mix the primer thoroughly and apply evenly over the surfaces ensuring total and uniform coverage, taking care to avoid ponding. Only prime an area of floor which can be covered by the mortar within the working time of the primer.

Note that the primer must not be allowed to dry. If it dries it must be thoroughly scratched and reapplied.

Mixing
RonaScreed SBR screeds should be mixed by forced action mixer or high powered, slow speed drill and suitable spiral paddle. Machine mixing will more easily provide a mortar with even dispersion of mix components and a lower water/cement ratio. The use of a forced action mixer (e.g.. Creteangle or Baron) will provide optimum performance; free fall mixers cause the mortar to ball up with a resultant reduction in performance and their use is not recommended. When using an efficient mixer, a mixing time of 2-3 minutes is normally sufficient. Do not overmix as this will entrain air and may affect performance. It is essential to the performance of the screed that there is sufficient gauging liquid in the mix and that the correct amount of RonaScreed SBR is used. **RonaScreed SBR must not be pre-diluted before adding to the mix.**
The consistency of the screed must **not** be semi-dry, good compaction cannot be achieved with a semi-dry mix. To test for correct consistency, make a ball of the mixed material. If the ball can be pulled apart without crumbling, the mortar will contain sufficient gauging liquid to fully hydrate the cement and allow proper compaction. Once mixed the mortar should be used as quickly as possible.

Placing
As soon as the mortar is mixed, it should be placed onto the wet/ tacky primer (if bonded), compacted, ruled and closed with a float or trowel. Avoid overworking the surfaces, this will increase the tackiness of the mortar. The float should be regularly washed, to prevent build up of polymer/cement paste. Some RonaScreed SBR Wearing Screeds contain granite and may need to be polished and finished by final trowelling after placing.

Screeds and toppings with an overall thickness greater than the maximum depth per layer, 50mm approximately, must be placed monolithically (wet on wet) in more than one layer to ensure compaction. Each layer should be of approximately equal thickness. To ensure satisfactory adhesion the lower layer(s) should be lightly combed, raked or roughened to provide a key for the next layer. Should intermediate layers dry, a priming coat must be applied between layers.

Bay proportions
Screed bay proportions should ideally be 1:1 length to width and should not exceed 3:2 to avoid the risk of stress relief cracking,

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the risk increases with the difference between bay length and width. Stress relief joints may be cut into fresh screed with the edge of a steel float and trowelled over to produce a smooth surface, or formed by laying separate bays. The depth of the cut should extend to at least 50% of the screed thickness unless steel mesh, heating pipes or conduits require a shallower cut. Stress relief joints may also be formed by early age saw cutting but care must be taken to ensure that cutting is carried out before stress relief cracks can form. Where rigid finishes such as tiles are to be laid, bay joints should be positioned to coincide with tile joints and the use of an uncoupling layer should be considered.

Joints

Joints should be formed in the floor screed/topping in line with expansion, contraction and movement joints and, on suspended floors, over support positions to accommodate movement. Isolation joints should also be placed around the perimeter of floor slabs and around columns, manholes and fixed bases. Joints should also be formed between any hot and cold areas of the floor. For further information refer to BS8204-3.

Expansion joints for heated screeds to receive most types of rigid floorings and some types of resilient floorings should be positioned so that screed bays are no larger than 40m² with a length no greater than 8m, see BS 8204-1 Design Considerations. Separate heating zones should be divided by expansion joints

Curing

As soon as possible after finishing the surface, cure with Ronacrete Curing Membrane. Alternatively use tight fitting polythene, to be left in place for at least 24 hours, to prevent rapid moisture loss from the surface. The use of Ronacrete Curing Membrane is preferred, because curing may commence immediately after trowelling is complete. Early application of curing membrane is particularly important when the surface is exposed to sunlight and/ or drying winds.

Using the surface

RonaScreed SBR screeds can typically receive foot traffic after 24 hours and heavy traffic after 3-5 days at 20^{0}C. Allow additional time in colder conditions.

Drying Data

The drying data is based on drying at 20ºC and 60±5% relative humidity. Low temperature and high humidity will delay drying. If the screed is covered with a curing membrane such as polythene, then the drying time starts when the membrane is removed.

The relative humidity (RH) at the surface of the screed should be measured with a hygrometer, as required by BS 8203 Annex B, before proceeding to lay floor coverings. Drying times on site will vary according to site conditions.

Accelerated drying of the screed by forced heating or ventilation should not be used. Gentle background heating to maintain temperature of 15ºC to 20ºC after curing is acceptable (BS 8204-3, 8.8.4)

Mix 1 Drying data (time to achieve 75%RH)	
25mm thickness	14 days
50mm thickness	12 days
75mm thickness	7 days
90mm thickness	7 days

Mix designs containing less RonaScreed SBR will take longer to achieve 75%RH.

Packaging

Supplied in 5, 25, 210 & 1000 litre units.

Shelf life & storage

RonaScreed SBR should be stored unopened between 5°C and 25°C in dry warehouse conditions and out of direct sunlight. Do not allow to freeze. In these conditions shelf life is approximately 6 months.

Health & Safety

Refer to product Safety Data Sheet

Site attendance

When on site Ronacrete representatives are able, if asked, to give a general indication of the correct method of installing a Ronacrete product. It is important to bear in mind that Ronacrete Ltd is a manufacturer and not a contractor and it is therefore the responsibility of the contractor and his employer to ensure he is aware of and implements the correct practices and procedures to ensure the correct installation of the product. Liability for correct installation lies with the contractor and not with Ronacrete Ltd.

The information detailed in this leaflet is liable to modification from time to time in the light of experience and of normal product application, and before using, customers are advised to check with Ronacrete Ltd, quoting the reference number, that they possess the latest issue. Any person or company using the product without first making further enquiries as to the suitability of the product for the intended use does so at his own risk, and Ronacrete Ltd can accept no responsibility for the performance of the product, or for any loss or damage arising out of such use.

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