Ronacrete

Technical Data Sheet

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RonaScreed 8 Day Overlay Fast Drying Screed

Fast drying screed additive

FEATURES

- Will accept foot traffic after 24 hours
- Rapid drying—can receive floor coverings such as vinyl, tiles and carpet after 8 days @ 50mm thick and 15 days at 75mm
- Rapid early strength development
- Liquid admixture disperses quickly and fully in the gauging liquid
- Apply as a bonded screed from 35mm, unbonded from 50mm and floating from 65mm
- A compressive strength in excess of 40N/mm² can be achieved after 28 days, see mix designs
- Suitable for screed pumps
- Concentration of admixture saves packaging waste

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FEATURES

- √ **additives and cement replacements for quick drying screeds**
- √ **allows quick covering with vinyl and carpet**
- √ **reduces waiting and drying times**
- √ **accelerates building process**
- √ **quickly attains RH < 75% at the surface**
- √ **early strength gain allowing access by following trades**

SPECIFICATION CLAUSES FOR RONASCREED 8 DAY OVERLAY, 75% RH AT 50MM THICK AFTER 8 DAYS @ 20^{O}C

1. Quick drying screed, 35mm minimum thickness, bonded
The rapid drying screed shall be RonaScreed 8 Day Overlay mix design 1 by Ronacrete Ltd, telephone +44 (0) 1279 638700. The bonding primer shall be 1:1 Ronafix : cement. The screed shall be laid at a minimum thickness of 35mm, 40mm overall. The rapid drying screed additive shall contain traces of a styrene butadiene rubber liquid (sbr) dispersion. The sbr shall have a solids content not less than 47% and a relevant and current British Board of Agrement Certificate for its use in floor screeds. All materials to be applied in accordance with manufacturers instructions.

2. Quick drying screed, 50mm minimum thickness, bonded
The rapid drying screed shall be RonaScreed 8 Day Overlay mix design 1 by Ronacrete Ltd, telephone +44 (0) 1279 638700. The bonding primer shall be 2:1 cement : water. The screed shall be laid at a minimum thickness of 50mm. The rapid drying screed additive shall contain traces of a styrene butadiene rubber liquid (sbr) dispersion. The sbr shall have a solids content not less than 47% and a relevant and current British Board of Agrement Certificate for its use in floor screeds. All materials to be applied in accordance with manufacturers instructions.

3. Quick drying screed, 50mm minimum thickness, unbonded
The rapid drying screed shall be RonaScreed 8 Day Overlay mix design 1 by Ronacrete Ltd, telephone +44 (0) 1279 638700. The screed shall be laid at a minimum thickness of 50mm. The rapid drying screed additive shall contain traces of a styrene butadiene rubber liquid (sbr) dispersion. The sbr shall have a solids content not less than 47% and a relevant and current British Board of Agrement Certificate for its use in floor screeds. All materials to be applied in accordance with manufacturers instructions.

4. Quick drying screed, 65mm minimum thickness, floating
The rapid drying screed shall be RonaScreed 8 Day Overlay mix design 1 by Ronacrete Ltd, telephone +44 (0) 1279 638700. The screed shall be laid at a minimum thickness of 65mm. The rapid drying screed additive shall contain traces of a styrene butadiene rubber liquid (sbr) dispersion. The sbr shall have a solids content not less than 47% and a relevant and current British Board of Agrement Certificate for its use in floor screeds. All materials to be applied in accordance with manufacturers instructions.

SUMMARY APPLICATION PROCEDURE

1. prepare surfaces
2. prime substrate as necessary
3. mix and apply screed
4. cure and protect
5. optionally measure RH at the surface
6. lay covering

Description
RonaScreed 8 Day Overlay screeding additive for site batched screeds is used to quickly reduce the level of retained moisture within the screed allowing floor coverings to be laid over the screed much sooner than with conventional screeds. They also promote high early strength in compression, permitting early access by following trades.

RonaScreed 8 Day Overlay is supplied in concentrated form and used in low dilution. It promotes rapid drying and early laying of floor coverings such as sheet vinyl, tiles and other materials including the range of RonaFloor Epoxy and Polyurethane coatings (refer to Ronacrete Technical Department).

RonaScreed 8 Day Overlay is typically incorporated within 35mm to 75mm thick floor screeds and applied by competent screeding and floor laying contractors. RonaScreed 8 Day Overlay is simple and straightforward to use and can be purchased and laid by non-licensed screeding contractors.

Ronacrete provides full on site support and guidance together with a design and advisory service. For further information contact Ronacrete; also refer to BS8204 Part 1.

Drying
A RonaScreed 8 Day Overlay screed will achieve 80% RH after 3 days and 74% RH after 8 days based on application and curing at 20°C and good drying conditions.

Poor drying conditions such as; low temperature, high humidity and insufficient air movement 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 measured with a hygrometer before proceeding to lay floor coverings. Standard practices should be followed including BS8203.

Drying concrete must be separated from the screed by polythene or RonaScreed DPM surface damp proof membrane. Screeds thicker than 50mm will take longer to dry. Screeds which become wet during their application or curing, or are used for material storage will take longer to dry.

Note that RonaScreed modified screed mix designs are formulated to be covered with carpet, vinyl, tiles or other coverings and are not designed as wearing screeds or toppings. For wearing screeds Ronafix or RonaScreed Self Smooth Topping should be used.

Advantages
- promotes rapid drying of floor screeds
- reduces waiting time before laying floor coverings
- allows early foot trafficking
- can be purchased and applied by competent flooring contractors
- minimises site delays and access
- simple and cost effective
- can be pumped to raised levels

BS8204 Part 1 defines methods of testing the performance of bonded screeds. All bonded RonaScreed 8 Day Overlay mix designs tested to this standard meet the requirements of categories A, B and C of BS8204 Part 1 and are therefore suitable for use in the following areas:

Category A - Very Heavy Traffic
e.g. hospital corridors, operating theatres, x-ray rooms, laboratories

Category B - Heavy Traffic
e.g. canteens, restaurants, hospital wards, main corridors

Category C - Light Traffic
e.g. foot traffic, light trolleys, offices, domestic housing

Drying and Hardening
Floor screeds incorporating RonaScreed 8 Day Overlay dry out more quickly than unmodified screeds and will generally accept foot traffic after 24 hours only. Vinyl floor coverings and tiles can be laid over a RonaScreed 8 Day Overlay surface as soon as 8 days after laying (for a 50mm screed).

The durability and hardness of a RonaScreed 8 Day Overlay floor is superior to standard floor screeds due to its high density, compressive strength and impact resistance.

Bonded, Unbonded and Floating Screeds
RonaScreed 8 Day Overlay screeds can be laid either bonded, unbonded or floating, determined by the substrate type. Bonded screeds must be laid on to a suitably prepared substrate (see Surface Preparation). Unbonded screeds are those laid on a separating layer or preformed damp proof membrane. Floating screeds are those laid on to an insulation board.

Damp proof membranes
A damp proof membrane should be present the under the concrete slab to prevent moisture penetration from below. If no membrane is present or if the concrete is drying, apply two coats of RonaScreed DPM or install a sheet or similar membrane. If RonaScreed DPM is laid on to a clean, sound substrate as specified in the RonaScreed DPM data sheet it is possible to lay RonaScreed 8 Day Overlay at a minimum thickness of 35mm, bonded to the RonaScreed DPM with a primer of Ronafix and cement (see Screed Selection Guide).

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Applications
RonaScreed 8 Day Overlay screeds can be laid in the following situations:

- over concrete slabs
- over existing screeds
- on to damp proof membranes (minimum thickness 35mm on to RonaScreed DPM)
- on to insulating board (minimum thickness 65mm)
- on to precast concrete, slabs/planks
- on to lightweight screeds

Mix Components and Design
The basic components of a RonaScreed 8 Day Overlay screed are cement (BSEN197 CEM1 42.5), sand from grade C or M of table 5 of BS882, RonaScreed 8 Day Overlay and clean water, the water content shown in mix designs must be adhered to, dry mixes will fail to fully hydrate the cement. Larger sized aggregates are used for concrete or granolithic finishes; see Table 4 of BS882.

RonaScreed 8 Day Overlay mix 1 gives a water/cement ratio of 0.36 and yields approximately 0.1m^3. The density of the cured screed is approximately 2300kg/m^3. This mix design can be leaned out to 1:4 (cement:sand) by weight if preferred, but strength will be reduced.

Aggregate Water Content
If damp sand is used the amount of water should be adjusted accordingly to ensure the correct amount of RonaScreed 8 Day Overlay is added.

Hardening, Drying and Curing Times
Hardening and drying times are dependent on screed thickness, liquid content, cement grading, ambient conditions, mixing, air circulation, substrate conditions and other variables.

GENERAL SPECIFICATION
Surface Preparation
The surface on to which a RonaScreed 8 Day Overlay screed is to be bonded must be clean, structurally sound and stable. All grease, oil, laitance and loose material must be removed. The surface must be keyed to expose the aggregate and to provide good adhesion. This is best achieved by scabbling, planing or blasting. The prepared surface must be cleaned (ideally by vacuum), damped with clean water and excess water removed.

Mix Designs
Select the most suitable RonaScreed 8 Day Overlay mix design from the Screed Selection Guide (Table 1) and table 4, RonaScreed 8 Day Overlay Mix Designs.

Mixing
RonaScreed 8 Day Overlay is best mixed using a forced action mixer to provide maximum workability and compaction with the minimum amount of liquid, Mix 1 must always be mixed with a forced action mixer. Dry mix the cement and sand then add the RonaScreed 8 Day Overlay liquid followed by sufficient clean water to provide the desired level of workability. The screeder should be able to make a ball of the mixed mortar and pull it apart without crumbling of the mortar.

Priming
Where thickness dictates the use of a bonding coat, the prepared surface must be well damped with clean water and the water allowed to soak in.

Excess water must be removed and the appropriate bond coat applied. For bonded screeds this is a mix of 1:1 Ronafix :cement brushed in to the surface or, depending on thickness, a 2:1 cement/water slurry. Before this dries the screed must be laid. If the bonding coat dries it must be vigorously scratched and reapplied.

Laying
Standard screeding practices should be followed. The mortar must be placed as soon as possible after mixing and well consolidated. Conventional tools such as float and trowel are used to obtain the desired surface finish.

Embedded Conduits and Pipes
When laying conduits or pipes within RonaScreed 8 Day Overlay screeds the conduit or pipe should be a minimum of 25mm beneath the top surface. It is advisable to incorporate reinforcing mesh centrally within the depth of the screed over the conduit or pipe, extending for not less than 150mm each side to minimise the risk of cracking.

Bay Sizes
A RonaScreed 8 Day Overlay screed should be laid as one continuous area, taking care to observe the following:

- construction joints in the substrate must be expressed through into the screed
- expansion joints in the substrate must be expressed through into the screed
- when laying on suspended floors movement joints should be installed in the screed over support positions to accommodate movement
- isolation joints should be installed around the perimeter of the floor and around columns, manholes and fixed spaces to accommodate movement

Curing
Curing must commence as soon as possible after finishing the screed. Cure the screed with tight fitting polythene, placed on to the screed as early as possible without damaging the surface. Cover for 24 hours then remove and air cure.

Laying on to Damp Proof Membrane
When laying a RonaScreed 8 Day Overlay screed on to a dpm we recommend the guidelines shown in BRE paper CP 94/74 'The rippling of thin flooring over discontinuities in screeds' are followed.

Laying on to Precast Planks
When laying a RonaScreed 8 Day Overlay screed on to precast planks the screed should ideally be laid unbonded with a separating membrane. If the screed can not be laid thick enough to be unbonded, the planks should either be provided with an acceptable rough clean laitance free finish or be lightly shot blasted and vacuum cleaned. The screed should be bonded using a primer of 1:1 Ronafix: cement. Hairline cracks forming in line with the joints between the units will not be detrimental to the screed provided the screed is well bonded.

Reinforcing the screed with a suitable mesh (e.g. D49 mesh placed in the lower third to half depth of the screed) may be appropriate for particular types of suspended floor design. Consult the Ronacrete Technical Department.

Pumping RonaScreed 8 Day Overlay Screeds
RonaScreed 8 Day Overlay modified screeds can be pumped to the point of laying. Tests have been conducted using Putzmeister equipment and specific guidance should be sought from Ronacrete Ltd.

Testing
The strength of the screed can be measured using a BRE Screedtester.

Contractors
Unlike other screeds of a similar nature RonaScreed 8 Day Overlay can be purchased and applied by competent screeding contractors throughout the country.

Ronacrete Ltd maintains a list of national and local contractors who are familiar with this type of flooring system and their application procedure.

The use of RonaScreed 8 Day Overlay is simple and straightforward and satisfactory performance will be achieved provided the correct methods are followed.
There are obvious advantages in selecting a contractor who has previous experience of the material but if requested the Ronacrete Technical Department will provide guidance and assistance to other contractors.

Other Flooring Materials
Depending on the specific requirements of the floor system being laid Ronacrete may recommend an alternative product and specification which may be more suited to the application.

To discuss the use of Ronacrete materials for any application please contact the Ronacrete Technical Department for full technical and practical guidance at design and specification stage together with site assistance and practical backup.

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Health and Safety
RonaScreed 8 Day Overlay is non-flammable and harmful by ingestion. Prolonged contact with skin should be avoided. Any splashes should be washed well with water. If contact with eyes occurs wash thoroughly with water and seek medical advice.

Performance Specification for RonaScreed 8 Day Overlay Mix 1 or 2
The screed shall be site batched and contain a liquid rapid drying screed additive e.g. RonaScreed 8 Day Overlay (as manufactured by Ronacrete Ltd - Tel: +44 (0) 1279 638700, Fax +44 (0) 1279 638701 or similar to be laid by suitably qualified but non-licensed contractors. The mix design shall be RonaScreed 8 Day Overlay mix design 1 or 2. The rapid drying screed additive shall contain traces of a styrene butadiene rubber liquid (sbr) dispersion. The sbr shall have a solids content not less than 47% and a relevant and current British Board of Agrement Certificate for its use in floor screeds. The compressive strength of 100mm laboratory cast and cured cubes shall be not less than 48N/mm^2 after 28 days. The screed shall be capable of achieving an RH at the surface of 74% or less after 8 days (Mix 1) or 68% (Mix 2).

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 an application 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 and that liability for its correct installation lies with the contractor and not with Ronacrete Ltd.

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Table 1—Screed Selection Guide

TYPE	THICKNESS	SUBSTRATE	PRIMER	MIX DESIGNS FOR RONASCREED 8 DAY OVERLAY
Bonded	35mm minimum, 40mm overall	suitable substrate, mechanically prepared (and optionally covered with RonaScreed DPM)	Ronafix: cement (1:1)	Mix 1
Bonded	50mm minimum	suitable substrate, mechanically prepared	cement: water (2:1)	Mix 1 to 75mm; consider Mix 2 above 75mm for easier laying & compaction
Unbonded	50mm minimum	Polythene membrane	none	Mix 1 to 75mm; consider Mix 2 above 75mm for easier laying & compaction
Floating	65mm minimum (light use)	Insulation board	none	Mix 1 to 75mm
Floating	75mm minimum (heavy use)	Insulation board	none	Mix 1; consider Mix 2 for easier laying & compaction

Table 2 - Performance Data

MIX 1	**Compressive**
1 day (Standard)	23N/mm²
28 days (Standard)	48N/mm²
MIX 2	**Compressive**
1 day	23N/mm²
28 days	65N/mm²

The above are typical laboratory results @ 20°C. Site strengths will be lower.

Table 3 - Drying Time

Drying time for each 50mm of screed
(* tests conducted by Stanger Consultants Ltd)

	Mix 1	Mix 2
Days after Casting	Hygrometer Reading %	
2	86	85
3	80	84
6	78	69
8	74	68

The accepted figure for the laying of vinyl floor coverings, tiles etc is 75%. Also refer to "Drying Data for RonaScreed 8 Day Overlay"

Table 4 - RonaScreed 8 Day Overlay Mix Designs

	RonaScreed 8 Day Overlay Mix Design 1		RonaScreed 8 Day Overlay Mix Design 2	
	by weight	**by volume**	**by weight**	**by volume**
Portland cement	50kg	1 part	50kg	1 part
medium grade sharp sand**	150kg	2.5 parts	100kg	1.5 parts
10-5mm aggregate**	-	-	100kg	1.5 parts
RonaScreed 8 Day Overlay	1 litre	1 part RonaScreed 8 Day Overlay:18 parts water*	1 litre	1 part RonaScreed 8 Day Overlay:18 parts water*
water	18 litres approx	-	18 litres approx	-
yield	0.1m³ approx	-	0.14m³ approx	-

* add diluted RonaScreed 8 Day Overlay to cement and sand to achieve working consistency

** mix designs are based on dry, sand and aggregate. The amount of water added to the screed should be adjusted accordingly. Overdosing with RonaScreed 8 Day Overlay will not improve drying and may even extend drying times.

Estimating Guide

	per m² at 50mm	per m² at 75mm	per m³
Mix 1	0.5 litres	0.75 litres	10 litres
Mix 2	0.35 litres	0.525 litres	7 litres

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Ronacrete manufacturer of specialist construction products

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