



Uniscreed Standard Uniscreed Rapid

Rapid screed drying additives for fast dry screeds in 2-3 days

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 SCREEDS DRY ENOUGH AFTER 8 DAYS TO RECEIVE VINYL COVERINGS

1. Quick drying screed, RH < 75% in 8 days, 35mm minimum thickness, bonded

The rapid drying screed shall be Uniscreed Standard 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 Agreement Certificate for its use in floor screeds. All materials to be applied in accordance with manufacturers instructions.

2. Quick drying screed, RH < 75% in 8 days, 50mm minimum thickness, bonded

The rapid drying screed shall be Uniscreed Standard 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 Agreement Certificate for its use in floor screeds. All materials to be applied in accordance with manufacturers instructions.

3. Quick drying screed, RH < 75% in 8 days, 50mm minimum thickness, unbonded

The rapid drying screed shall be Uniscreed Standard 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 Agreement Certificate for its use in floor screeds. All materials to be applied in accordance with manufacturers instructions.

4. Quick drying screed, RH < 75% in 8 days, 65mm minimum thickness, floating

The rapid drying screed shall be Uniscreed Standard 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 Agreement Certificate for its use in floor screeds. All materials to be applied in accordance with manufacturers instructions.

5. Quick drying screed, RH < 75% in 8 days, 75mm minimum thickness, floating

The rapid drying screed shall be Uniscreed Standard 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 Agreement Certificate for its use in floor screeds. All materials to be applied in accordance with manufacturers instructions.

SPECIFICATION CLAUSES FOR SCREEDS DRY ENOUGH AFTER 4 DAYS TO RECEIVE VINYL COVERINGS

6. Quick drying screed, RH < 75% in 4 days, 35mm minimum thickness, bonded

The rapid drying screed shall be Uniscreed Rapid 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. All materials to be applied in accordance with manufacturers instructions.

7. Quick drying screed, RH < 75% in 4 days, 50mm minimum thickness, bonded

The rapid drying screed shall be Uniscreed Rapid 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. All materials to be applied in accordance with manufacturers instructions.

8. Quick drying screed, RH < 75% in 4 days, 50mm minimum thickness, unbonded

The rapid drying screed shall be Uniscreed Rapid mix design 1 by Ronacrete Ltd, telephone +44 (0) 1279 638700. The screed shall be laid at a minimum thickness of 50mm. 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

Uniscreed screeding additives for site batched levelling screeds are 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.

Both forms of Uniscreed (Standard and Rapid) are supplied in concentrated form and used in low dilution. They promote rapid drying and early laying of floor coverings such as sheet vinyl, tiles and other materials including the range of Ronascreed Epoxy and Polyurethane coatings (refer to Ronacrete Technical Department).

Uniscreed is incorporated within (typically) 50mm and thicker floor screeds and are applied by competent screeding and floor laying contractors. Uniscreed is simple and straightforward to use and can be purchased and laid by non-licensed screeding contractors.

Ronacrete provide full on site support and guidance together with a design and advisory service. For further information contact Ronacrete; also refer to BS8204 Part 1 1987.

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Uniscreed Standard	Screed reaches RH below 80% after 3 days	Screed reaches RH below 75% after 8 days
Uniscreed Rapid	Screed reaches RH below 80% after 2 days	Screeds reaches RH below 75% after 4 days

Uniscreed Standard/Rapid

Uniscreed Standard/Rapid - Rapid screed drying additives for fast dry screeds in 2-3 days

Note that Uniscreed modified screeds are designed 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 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
- rate of drying—Relative Humidity at the surface

Uniscreed Standard

Screed reaches RH below 80% after 3 days	Screed reaches RH below 75% after 8 days
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Uniscreed Rapid

Screed reaches RH below 80% after 2 days	Screed reaches RH below 75% after 4 days
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BS8204 Part 1 1993 defines methods of testing the performance of bonded screeds. All bonded Uniscreed 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 Uniscreed 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 Uniscreed surface as soon as 2 days after laying (for a 50mm screed).

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

Bonded, Unbonded and Floating Screeds

Uniscreed 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 preformed damp proof membrane, separating layer or contaminated concrete base. Floating screeds are those laid on to an insulating quilt or board.

Damp proof membranes

A damp proof membrane should be present underneath Uniscreed screeds to prevent moisture penetration from below. If no membrane is present apply two coats of Ronacrete Monoprufe or install a sheet or similar membrane. If Monoprufe is laid on to a clean, sound substrate as specified in the Monoprufe data sheet it is possible to lay Uniscreed at a minimum thickness of 35mm, bonded to the Monoprufe with a primer of Ronafix and cement (see Screed Selection Guide).

Applications

- Uniscreed screeds can be laid in the following situations:
- over concrete slabs
- over existing screeds
- on to damp proof membranes (minimum thickness 35mm on to Monoprufe dpm)
- on to insulating quilts or board (minimum thickness 65mm)
- on to precast concrete, slabs/planks
- on to stair treads and risers
- on to lightweight screeds

Mix Components and Design

The basic components of a Uniscreed screed are cement (BSEN197 CEM1 42.5), sand from grade C or M of table 5 of BS882:1983, Uniscreed Standard or Uniscreed Rapid and clean potable water. Larger sized aggregates are used for concrete or granolithic finishes; see Table 4 of BS882: 1983.

Uniscreed mix 1 gives a water/cement ratio of 0.36 and a yield of 0.1m³. The density of the cured screed is approximately 2300kg/m³. 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 Uniscreed is added.

Hardening, Drying and Curing Times

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

GENERAL SPECIFICATION

Surface Preparation

The surface on to which a Uniscreed screed is being laid must be clean, structurally sound and stable. All grease, oil, laitence and loose material must be removed. The surface should be keyed to expose the aggregate and to provide additional 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 Uniscreed mix design from the Screed Selection Guide (Table 1) and the tables 4 and 5, Uniscreed Mix Designs.

Mixing

Both grades of Uniscreed are best mixed using a pan or forced action mixer to provide maximum workability and compaction with the minimum amount of liquid. Dry mix the cement and sand then add either the Uniscreed Standard liquid or Uniscreed Rapid powder followed by sufficient clean water to provide the desired level or workability.

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 Uniscreed 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 250mm each side to minimise the risk of cracking.

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Uniscreed Standard/Rapid - Rapid screed drying additives for fast dry screeds in 2-3 days

Bay Sizes

A Uniscreed 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 Uniscreed 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 Uniscreed screed on to precast planks these should either be provided with an acceptable rough clean laitence 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 Uniscreed Screeds

Uniscreed 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

As sections of screed are completed the strength of the screed can be measured using a BRE Screedtester.

Contractors

Unlike other screeds of a similar nature Uniscreed can be purchased and applied by competent screeding contractors throughout the country.

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

Furthermore, the use of Uniscreed 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.

Instruction and tuition can also be given to those contractors and specifiers not familiar with Ronacrete products and techniques.

Health and Safety

Uniscreed 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 Uniscreed Standard Mix 1 or 2

The screed shall be site batched and contain a liquid rapid drying screed additive e.g. Uniscreed Standard (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 Uniscreed Standard 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 Agreement Certificate for its use in floor screeds. The compressive strength of 100mm laboratory cast and cured cubes shall be not less than 48N/mm² 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).

Performance Specification for Uniscreed Rapid Mix 1

The screed shall be site batched and contain a powder rapid drying screed additive e.g. Uniscreed Rapid (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 Uniscreed Rapid mix design 1 or 2. The compressive strength of 100mm laboratory cast and cured cubes shall be not less than 68N/mm² after 28 days. The screed shall be capable of achieving an RH at the surface of 74% or less after 4 days.

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.

Estimating Guide

		per m ² at 50mm	per m ³
Rapid	Mix 1	3 kg	60 kg
Standard	Mix 1	0.5 litres	10 litres
Standard	Mix 2	0.35 litres	7 litres

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Uniscreed Standard/Rapid - Rapid screed drying additives for fast dry screeds in 2-3 days

Screed Selection Guide

Select the most suitable Uniscreed mix design by the following categories

Table 1

TYPE	THICKNESS	SUBSTRATE	PRIMER	MIX DESIGNS FOR UNISCREED STANDARD OR RAPID
Bonded	35mm minimum, 40mm overall	suitable substrate, mechanically prepared (and optionally covered with Ronacrete Monoprufe)	Ronafix:cement (1:1)	Mix 1 (Standard or Rapid)
Bonded	50mm minimum	suitable substrate, mechanically prepared	cement:water (2:1)	Mix 1 (Standard or Rapid) to 75mm; consider Uniscreed Mix 2 (Standard) above 75mm for easier laying & compaction
Unbonded	50mm minimum	a damp proof membrane, separating layer or contaminated concrete base	none	Mix 1 (Standard or Rapid) to 75mm; consider Uniscreed Mix 2 (Standard only) above 75mm for easier laying & compaction
Floating	65mm minimum (light use)	insulating quilt or board	none	Mix 1 (Standard or Rapid) to 75mm; consider Uniscreed Mix 2 (Standard only) above 75mm for easier laying & compaction
Floating	75mm minimum (heavy use)	insulating quilt or board	none	Mix 1 (Standard or Rapid) or Uniscreed Mix 2 (Standard only) for easier laying & compaction

Table 2 - Performance Data

MIX 1	Compressive
1 day (Standard)	23N/mm ²
1 day (Rapid)	30N/mm ²
28 days (Standard)a	48N/mm ²
28 days (Rapid)	68N/mm ²
MIX 2	Compressive
1 day	23N/mm ²
28 days	65N/mm ²

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)

Days after Casting	Mix 1		Mix 2	
	Standard*	Rapid	Standard*	Rapid
	Hygrometer Reading %			
1	n/a	84	n/a	n/a
2	86	80	85	n/a
3	80	76	84	n/a
4	n/a	74	n/a	n/a
6	78	n/a	69	n/a
8	74	n/a	68	n/a

The accepted figure for the laying of vinyl floor coverings, tiles etc is 75%.

Uniscreed Standard/Rapid

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Uniscreed Standard/Rapid - Rapid screed drying additives for fast dry screeds in 2-3 days

Table 4 - Uniscreed Standard Mix Designs

	Uniscreed Standard Mix Design 1		Uniscreed Standard 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
Uniscreed Standard	1 litre	1 part Uniscreed:18 parts water*	1 litre	1 part Uniscreed:18 parts water*
water	18 litres approx	-	18 litres approx	-
yield	0.1m ³ approx	-	0.14m ³ approx	-

** mix designs are based on dry, sand and aggregate. The amount of water added to the screed should be adjusted accordingly

Table 5 - Uniscreed Rapid Mix Designs

	Uniscreed Rapid Mix Design 1	
	by weight	
Portland cement	50kg	
medium grade sharp sand**	150kg	
10-5mm aggregate**	-	
Uniscreed Rapid	6kg	
water	18 litres approx	
yield	0.1m ³ approx	

* add diluted Uniscreed 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 according to the moisture content of the sand

Table 6 - Primers

screed type	thickness	substrate	primer mix design by volume	coverage
bonded Uniscreed mix design 1	35mm minimum, 40mm overall	mechanically prepared; structurally sound; may be treated with Monoprufe dpm before screed laid	1:1 Ronafix:cement	3-4m ² per litre of Ronafix
bonded Uniscreed mix design 1 or 2	50mm thickness	mechanically prepared; structurally sound	2:1 cement:water	3-4m ² per kg of cement