

# Ronascreed 4 Day Overlay

## Rapid drying additive for screeds

### FEATURES

- ✓ additive 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 4 DAY OVERLAY, 75% RH AT 50MM THICK AFTER 4 DAYS @ 20°C

#### 1. Quick drying screed, 35mm minimum thickness, bonded

The rapid drying screed shall be Ronascreed 4 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. 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 4 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. 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 4 Day Overlay 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.

#### 4. Quick drying screed, 65mm minimum thickness, floating

The rapid drying screed shall be Ronascreed 4 Day Overlay mix design 1 by Ronacrete Ltd, telephone +44 (0) 1279 638700. The screed shall be laid at a minimum thickness of 65mm. 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 4 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 4 Day Overlay is supplied in powder form. Each 3kg sachet is sufficient for 1 bag of cement. 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 4 Day Overlay is typically incorporated within 35mm to 75mm thick floor screeds and applied by competent screeding and floor laying contractors. Ronascreed 4 Day Overlay 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.

### Drying

The data is based on drying @ 20°C in good drying conditions. Low temperature, high humidity, slow air movement and poor drying conditions will delay the drying times. 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 before proceeding to lay floor coverings. Standard practices should be followed including BS8203.

Drying concrete must be separated from the screed by polythene or Monoprufe DPM surface damp proof membrane. Screeds thicker than those referred to will take longer to dry out. Screeds which are wetted during their application or curing will take longer to dry out.

Note that Ronascreed 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 Self Smoothing Topping should be used.

|                                 |                                     |                                     |
|---------------------------------|-------------------------------------|-------------------------------------|
| <b>Ronascreed 4 Day Overlay</b> | Screed achieves 76% RH after 3 days | Screed achieves 74% RH after 4 days |
|---------------------------------|-------------------------------------|-------------------------------------|

### 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 1993 defines methods of testing the performance of bonded screeds. All bonded Ronascreed 4 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 4 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 4 Day Overlay surface as soon as 4 days after laying (for a 50mm screed).

The durability and hardness of a Ronascreed 4 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 4 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 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 Monoprufe DPM or install a sheet or similar membrane. If Monoprufe DPM is laid on to a clean, sound substrate as specified in the Monoprufe DPM data sheet it is possible to lay Ronascreed 4 Day Overlay at a minimum thickness of 35mm, bonded to the Monoprufe DPM with a primer of Ronafix and cement (see Screed Selection Guide).

# Ronascreed 4 Day Overlay

## Applications

Ronascreed 4 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 Monoprufe 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 4 Day Overlay screed are cement CEM1 52.5R for strength and Drying time as shown in the data sheet, and sand from grades 0/2 or 0/4 to BS EN 12620-2002 & A1-2008, Ronascreed 4 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.

Ronascreed 4 Day Overlay mix 1 gives a water/cement ratio of 0.36 and yields approximately 0.1m<sup>3</sup>. The density of the cured screed is approximately 2300kg/m<sup>3</sup>. 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.

## 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 Ronascreed 4 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.

### Mixing

Ronascreed 4 Day Overlay must be mixed using a forced action mixer to provide maximum workability and compaction with the minimum amount of liquid required to fully hydrate the cement. Dry mix the cement and sand then add the Ronascreed 4 Day Overlay powder 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 4 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 4 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 4 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 4 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 4 Day Overlay Screeds

Ronascreed 4 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

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 Ronascreed 4 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 4 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.

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

# Ronascreed 4 Day Overlay

## Health and Safety

Ronascreed 4 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 4 Day Overlay

The screed shall be site batched and contain a liquid rapid drying screed additive e.g. Ronascreed 4 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 compressive strength of 100mm laboratory cast and cured cubes shall be not less than 68N/mm<sup>2</sup> 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 <sup>2</sup> at 50mm | per m <sup>3</sup> |
|--------------------------|----------------------------|--------------------|
| Ronascreed 4 Day Overlay | 3kg                        | 60kg               |

**Table 3 - Drying Time**

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

| Days after Casting | Hygrometer Reading % |
|--------------------|----------------------|
| 1                  | 84                   |
| 2                  | 80                   |
| 3                  | 76                   |
| 4                  | 74                   |

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

**Table 1 - Minimum thickness and primer**

| TYPE     | THICKNESS                  | SUBSTRATE   | PRIMER                |
|----------|----------------------------|---|-----------------------|
| Bonded   | 35mm minimum, 40mm overall | suitable substrate, mechanically prepared (and optionally covered with Monoprufe DPM) | Ronafix :cement (1:1) |
| Bonded   | 50mm minimum               | suitable substrate, mechanically prepared   | cement:water (2:1)    |
| Unbonded | 50mm minimum               | Polythene membrane  | none                  |
| Floating | 65mm minimum (light use)   | Insulation board  | none                  |
| Floating | 75mm minimum (heavy use)   | Insulation board  | none                  |

**Table 2 - Compressive Strength**

|                    |                     |
|--------------------|---------------------|
| 1 day (Standard)   | 30N/mm <sup>2</sup> |
| 28 days (Standard) | 68N/mm <sup>2</sup> |

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

**Table 4 - Ronascreed 4 Day Overlay Mix Design by Weight & Volume**

|                          | by weight                | by volume                         |
|--------------------------|--------------------------|-----------------------------------|
| Portland cement          | 50kg                     | 1 part                            |
| sharp sand*              | 150kg                    | 2.5 parts                         |
| Ronascreed 4 Day Overlay | 6kg                      | 3kg per bag of cement             |
| water                    | 18 litres approx         | Sufficient water for workable mix |
| yield                    | 0.1m <sup>3</sup> approx | -                                 |

\* mix designs are based on dry, sand and aggregate. The amount of water added to the screed should be adjusted accordingly. Overdosing with Ronascreed 4 Day Overlay will not improve drying and will affect working time.

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