

## Description

rbs Rapid Concrete is a rapid set, high early strength repair concrete, consisting of a dry blend of polymer modified Portland Cement and limestone aggregate. Its high performance exhibits a fast development of physical properties allowing early return to service, especially suitable for heavily trafficked areas. New improved formula provides an improved cold working performance giving a faster set and improved strengths at early stages.

## Uses

- High strength repairs to pavement concrete thin bed and full depth.
- Industrial floors, loading bays or failed floor slabs.
- Parking decks and ramps.
- Airport hardstandings.

## Benefits

- High early strength
- Rapid setting time between 25-30 mins
- Works at lower temperatures  $\geq 5^{\circ}$
- Shrinkage compensated

## Directions for Use

**Substrate preparation** – The substrate must be sound and free from dust, oil, grease, or other contaminants and should be suitably textured to provide adequate mechanical key; this may be achieved by scabbling or needle gunning. Generally the area should be scabbled to a minimum depth of 12mm for foot traffic or 20mm for wheeled traffic, with the edges cut back to a minimum of 16mm to avoid feather edging. Repairs with free edges should be firmly shuttered to resist the expansive force generated during setting.

**Exposed steelwork** - When reinforcement is exposed during the works then the steel bar must be thoroughly cleaned over the whole circumference to remove all traces of rust, millscale etc.

**Priming** - The prepared substrate must be thoroughly saturated with clean water for several hours, the duration depending upon the amount of suction in the concrete.

All standing water should be removed immediately prior to the application of rbs Rapid Concrete, leaving the surface wet.

**Mixing** - It is recommended that rbs Rapid Concrete is mixed by forced action mixer (e.g. Creteangle), adding

the powder to the water and mixing until homogeneous; care must be taken to avoid overmixing since undue air entrainment will reduce the properties of the material. Alternatively, for a single pack application mixing with a suitable slow speed rotary drill fitted with a paddle attachment, such as EPI MR4, is satisfactory.

rbs Rapid Concrete requires 3.5 litres of water per bag. This may be adjusted by  $\pm 0.5$  litres to vary the consistency of the mix. The mix remains workable for up to 25 minutes, depending on conditions.

rbs Rapid Concrete can be applied to a maximum thickness of 50mm, for repair sections thicker than 50mm it is possible to mix additional aggregate with rbs Rapid Concrete (up to a maximum thickness of 250mm). The precise quantity of aggregate used will depend upon the particle size and grading, but typically 12kg of a single-sized aggregate may be added to a mixed pack of rbs Rapid Concrete. Under no circumstances should sand or any aggregate containing fine material (under 6mm) be added.

**Application** - The mixed rbs Rapid Concrete must be applied whilst the existing concrete is still wet, then well compacted and finished with a float. Thicknesses from 12mm upwards are possible in one application. Rapid loss of water from the exposed surface may result in plastic cracking, and consequently the repair area must be protected in line with good concreting practice. In line with good practice the maximum bay size, which depends upon the repair thickness, must be observed, and in all cases the length to width ratio must not exceed 2:1.

N.B. In common with other cement based materials, rbs Rapid Concrete should not be applied at temperatures below  $5^{\circ}\text{C}$  or if there is danger of frost. In addition, the early strength development will be substantially reduced at low ambient temperatures.

**Curing** - It is essential rbs Rapid Concrete is properly cured for at least two hours with wet hessian and polythene sheet, or an efficient curing membrane.

**Cleaning** - Tools should be cleaned immediately after use with water.

## Packaging

rbs Rapid Concrete is supplied in 25kg bags.

## Storage

Store in dry, cool, frost-free conditions. Under such conditions the shelf life will be at least 6 months.

## Technical Data

Unless otherwise stated data refers to rbs Rapid Concrete at a water content of 3.5 litres per pack.

Pot Life	15 minutes @ 20°C 15 minutes @ 5°C
Setting Time	25 minutes @ 20°C 30 minutes @ 5°C

Water/Pack	Density	Yield
3.0 litres	2315 kg/m <sup>3</sup>	12.1 litres
3.5 litres	2265 kg/m <sup>3</sup>	12.6 litres
4.0 litres	2210 kg/m <sup>3</sup>	13.1 litres

### Typical compressive strengths (MN/m<sup>2</sup>) at 20°C:

2 hrs	4 hrs	1 day	7 days	14 days	28 days
13.02	25.68	28.13	29.525	32.96	35.595

### Typical compressive strengths (MN/m<sup>2</sup>) at 5°C:

2 hrs	4 hrs	1 day	7 days	14 days	28 days
14.68	21.04	27.62	30.285	32.84	38.625

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