

## Description

rbs Anchor Grout S is a free flow polyester grout, specifically designed and developed for anchoring bolts and dowels into vertically downward holes into rock, concrete, brickwork and masonry. Typical applications are the permanent fixing of starter bars and dowels, foundation bolts, ground anchors, base plates for building systems, and rail and crane tracks.

rbs Anchor Grout S is a two pack system consisting of a liquid polyester resin and a filler component containing graded silica sands and an activator.

## Directions For Use

**Drilling the hole** – Using the correct diameter drill bit (see table), drill the hole to the required depth. A rotary percussive machine should be used. If for any reason diamond drilling is required the smooth hole produced must be thoroughly roughened.

**Cleaning the hole** – Drilling debris and dust must be thoroughly cleaned from the hole using a suitable brush and clean compressed air and/or clean water. If water is used the hole may be left damp or even full of water, but the water and the sides of the hole must be clean.

**Mixing** – Pour the resin component into a suitable clean mixing vessel, and whilst stirring slowly add the activated filler component. Once the filler component is completely added, mix for a further 1 minute. A mechanical mixer such as a slow speed drill and EPI MR2 mixer paddle is recommended.

**Application** – Pour the mixed rbs Anchor Grout S into the drilled hole taking care not to entrap air or water. If the hole is of a particularly small diameter or if the displacement of water is difficult by pouring, the rbs Anchor Grout S can be injected by using applicator cartridges and injection tubing. The tube should be placed to the bottom of the hole and the resin injected through it, the tube being slowly withdrawn as the hole fills with resin.

The hole should be filled to approximately 50% of its depth, depending upon application, and the fixing should be immediately pushed slowly down into the resin, with a twisting action, displacing the resin up towards the top of the hole to completely fill the annular space. The bolt must then be left undisturbed until the resin has set. A fixture can be attached once the service time of the resin has elapsed.

**Cleaning** – Tools should be cleaned immediately after use, before the resin sets, using proprietary cleaner. Once the resin has set it can only be removed by mechanical means.

## Technical Data

### Hole sizes:

#### Rebar anchor

Nominal Bolt Diameter (mm)	8	10	12	16	20	25	32	40
Required Hole Diameter (mm)	12	14	16	20	25	32	40	50

#### Allthread stud

Nominal Bolt Diameter (mm)	8	10	12	16	20	24	30
Required Hole Diameter (mm)	12	12	14	20	24	28	35

N.B. Hole diameters stated are nominal diameters when holes are drilled with the appropriate diameter drill bit to ISO 5468:1992.

## Physical Properties

### Setting times:

Temperature (°C)	Pot Life (mins)	Initial Set (mins)	Service Time (hours)
5	90	120	16
10	50	75	4
20	20	40	2
30	10	20	1

### Typical ultimate physical properties

(Testing to BS 6319 cured for 7 days @ 35°C)

Compressive Strength	90 MPa
Tensile Strength	12 MPa
Flexural Strength	28 MPa
Compressive Modulus	15 GPa
Density	2.0 +/- 0.1

## Load capacity data for all thread studs:

Stud Diameter d (mm)	Hole Depth h <sub>o</sub> (mm)	Characteristic Load in 30MPa Concrete N <sub>rk</sub> (kN)	Recommend Load in 30MPa Concrete N <sub>rec</sub> (kN)
8	80	12.5	4.2
10	90	23.1	7.7
12	110	23.9	8
16	125	36.9	12.3
20	170	53.6	17.8
24	210	66.0	22.0

## Load capacity for reinforcing bar anchors:

Equation for tensile load capacity (assumes f<sub>cm</sub> = 20MPa)  
Tension  $N_{rk} = (h_{ef} - 50) / 2.5$

## Concrete capacity reduction factors:

Close edge, tension:

$$Rf_{cN} = 0.4 + [0.4 C / h_{ef}] \quad 0.5 d [C / h_{ef}] d 1.5$$

Close edge, shear:

$$Rf_{cV} = 0.25 + [0.5 C / h_{ef}] \quad 0.5 d [C / h_{ef}] d 1.5$$

Close spacing, tension:

$$Rf_s = 0.4 + [0.6 S / h_{ef}] \quad 0.25 d [S / h_{ef}] d 1$$

h <sub>ef</sub>	Effective bond length (rebar) (mm)
C	Close edge distance (mm)
S	Anchor spacing (mm)
N <sub>rk</sub>	Anchor characteristic load, tension (kN)
N <sub>rec</sub>	Anchor recommended load (kN)
Rf <sub>cN</sub>	Close edge reduction factor, tension only
Rf <sub>cV</sub>	Close edge reduction factor, shear only
Rf <sub>s</sub>	Close spacing reduction factor, tension and shear

## Notes on Load Capacity Data

Quoted values for N<sub>rk</sub> are corrected to f<sub>cm</sub> = 30, according to the ETAG 'Metal Anchors for use in Concrete'.

The equations for calculating the values of the (unfactored) characteristic loads N<sub>rk</sub> and V<sub>rk</sub> for reinforcing bar assume f<sub>cm</sub> = 30. All load capacity equations and values assume adequate steel strength; all thread stud tests were carried out on grade 8.8 steel.

Hole diameters for reinforcing bar assumes compliance to EN10080:1996 the use of bar with a high rib pattern could call for larger diameter holes, and tests may be required to determine the characteristic loads.

## Storage

Store in cool dry, frost-free conditions away from direct sunlight, under such conditions the shelf life will be 12 months.

## Packaging

rbs Anchor Grout S is available as a 5.5kg/2.75ltr unit.

## Important Note

Whilst all reasonable care is taken in compiling technical data on the Company's products, all recommendations or suggestions regarding the use of such products are made without guarantee, since the conditions of use are beyond the control of the Company.

It is the responsibility of the customer to satisfy himself that each product is fit for the purpose for which he intends to use it, that the actual conditions of use are suitable, and that in the light of our continual research and development programme the information relating to each product has not been superseded.

## Resapol Foundation

Giving back with every pack

For more information on the Resapol Foundation, please visit our website at [www.resapol.com](http://www.resapol.com).

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