

MECHANICALLY ANCHORED ROCK BOLT ASSEMBLIES

DESCRIPTION

Rock bolts / studs are mechanically point anchored within the rock using 3 leaf bail-type expansion shells attached to the inserted end of the bolt. Expansion shells are supplied screwed to the end of the rock tendon and are inserted into the hole. When tension is applied to the tendon the tapered plug within the shell forces the leaves to move outwards, thus wedging them against the walls of the borehole. This means that the mechanical bolt is functional immediately on installation. In many applications the installation is post-grouted for additional stability.

The complete rock bolt assembly includes the threaded bar, bearing plate (washer), nut, seat and expansion shell. Numerous combinations are available to suit individual strata control requirements. These include:

- Bar Type
- Bar diameter
- Thread type
- Expansion shell size
- Washer profile
- Washer dimensions

All deformed bar (ribbed bar) used for mechanical anchors is high tensile (min 480 MPa) steel hot rolled in accordance with SABS 920. Step™ Bar, High Step™ Bar and KAT™ bar are specifically designed for mining applications (please refer to the individual Product Information Sheets for more detail).

FEATURES

- Mechanical Anchors provide support immediately.
- Wide choice of combinations to meet specific support requirements.
- High tensile steel to SABS 920
- Can be post grouted.
- The wedge and leaf arrangement provides parallel contact with the hole sides.
- Up to 9 mm range in hole diameter can be tolerated (depending on the choice of shell).
- Nominal pull-out strength is 70 kN (as this is application and rock-type dependant the actual loads should be determined *in situ*).

EXPANSION SHELL DIMENSIONS

NOMINAL SHELL DIAMETER (mm)	MAX BAR DIAMETER (mm)	HOLE SIZE (mm)	SHELL LENGTH (mm)	WEDGE LENGTH (mm)
30	16	30 – 34	60	36
32	18	32 – 36	60	36
35	20	35 – 39	60	36
38	20	38 – 42	60	36
43	24	43 – 47	85	45

CONFIGURATION OPTIONS

BAR OPTIONS

TYPE	DIAMETER	LENGTH	THREAD
Round Bar	14.5 mm	0.5 m to 3 m	16 mm DIN 405
Rebar	25 mm	0.5 m to 3 m	M24
Step Bar	14.5, 16, 18, 20mm	0.5 m to 3 m	Diameter +2mm DIN 405
High Step Bar	20 mm	0.5 m to 3 m	22 mm DIN 405
Fully threaded Kat Bar	16 mm, 20 mm	0.5 m to 3 m	"Kat" hot-rolled double-start

BEARING PLATE (WASHER) OPTIONS

TYPE	SQUARE SIZE	THICKNESS	HOLE SIZE
Flat	100, 125, 300 mm	4.5, 5.0, 6.0 mm	As per bar diameter requirements
Domed dog ear	125, 150 mm		As per bar diameter requirements
Ribbed dog ear	125, 150 mm		As per bar diameter requirements
Flat Dog ear	125 mm		As per bar diameter requirements

EXPANSION SHELL OPTIONS

TYPE	DIAMETER	HOLE DIAMETER	MAXIMUM BAR DIAMETER
3 LEAF EXPANSION SHELL	30, 32, 35, 38mm	SHELL + 4 mm	30 – 32 mm = 16 mm, 32 - 35 = 18 - 20 mm
	43 mm	SHELL + 4 mm	38 – 43 mm = 20 mm

NUT OPTIONS

	KAT BAR 16, 20 mm	HIGH STEP 20 mm	RE-BAR 16 - 20 mm	RE-BAR 25 mm
NUT TYPES	Ball-nose, Dome	Plain, Flange	Plain, Flange	Plain, Flange
ACCESSORIES	Shearpin, Crimp, Torque indicator, Spherical seat, Foskote, Nibbed bar			

APPEARANCE

