



SANDVIK(JINING) ROCBOLT TECHNOLOGIES CHINA CO.,LTD

Ground Control Technology for the Mining and Tunnelling Industry

Version 2024





Our number 1 priority

Safety first



Emergency exit



Assembly point



Protective equipment



Emergency number



First aid kit



In case of emergency



Psychological safety



Health and well-being



Cyber security



ROCBOLT TECHNOLOGIES CHINA LTD

Sandvik(Jining) Rocabolt Technologies China Co.,Ltd to be the foremost manufacturer and supplier of specialized ground control products to the underground mining and geotechnical industries of China. We have the unique ability to draw upon expertise from a diverse number of mining locations to deliver sophisticated, safe and cost-effective solutions to our clients. Our experienced staff of skilled personnel provides a comprehensive range of industry knowledge and a complete package of high-quality ground support products, systems and engineered solutions. Our quest for better solutions and technology is a critical part of our strategy of ongoing research and development.



TECHNICAL CONSULTING AND SERVICE

- A strong engineering team provides clients with ground control system design.
- Underground research to give you the safer, faster and cheaper solution
- On-site training and test
- On site performance instrumentation and evaluation



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DSI
UNDERGROUND
A SANDVIK COMPANY

QA/QC MANAGEMENT

- High quality products
- Tracing
- Customer feedback
- Products improvement





PRODUCTS MANUFACTURING

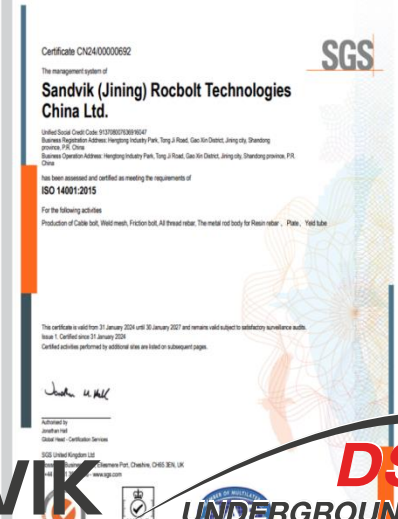
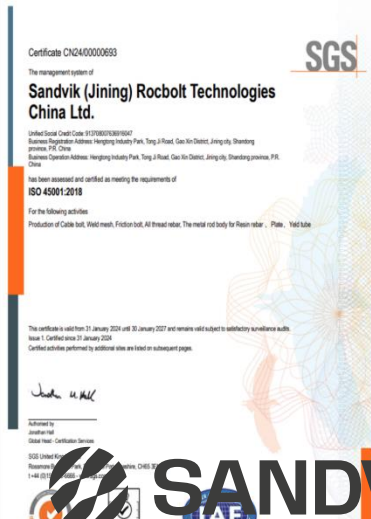
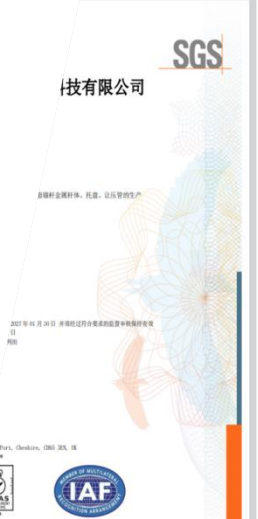
The advanced production lines provide you with:

- Quality products
- Varieties of products
- New products development



CERTIFICATES

- Mine Safety Certificates
- ISO 9001-2015
- ISO 14001-2015
- ISO 45001-2018





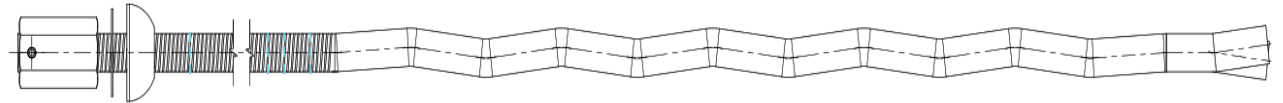
MINING PRODUCTS

SECTION 1 ROCK BOLTS & ACCESSORIES

WRIGGLE BOLT-T24 ; W/ PINNED NUT & DOME WASHER

Technical Features:

- Left hand continuously threaded bar, with 6[mm] pitch allowing higher tension for a given torque.
- Available as deboned version, or plain bar with a number of possible configurations of accessories.
- Dynamic testing conducted without bolt failure to 47[kJ] absorbed energy.
- Suitable for use with either resin capsules or cementitious grout.
- Resin Shredder actively promotes shredding of the capsule film and mixing of the resin components while centralizing the bolt in boreholes up to 40[mm].
- Available in BIGalvanized.



Specifications				
Characteristic Value / Type	Symbol	Unit	Min. Value	Typical Value
External Dia.	De	[mm]	23.5	23.5
Nominal weight	M	[kg/m]	3.4	3.4
Ultimate load	Fm	[kN]	290	310
Yield Load		[kN]	215	250
Yield strength	Re	[Mpa]	500	570
Ultimate strength	Rm	[Mpa]	650	720
Elongation	A	[%]	15	21
Nut Integrity test		[kN]	260	280
Delivery lengths	L	[mm]	2200 or 2400	



MINING PRODUCTS

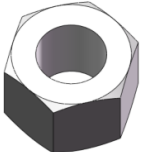


SECTION 1 ROCK BOLTS & ACCESSORIES

REBAR BOLT

Technical Specifications Double Coated Rebar Bolt 25 [mm] diameter

Characteristic Value / Type	Symbol	Unit	Rebar bolt-M24
Steel Grade	-	-	HRB500
Nominal core diameter	Dc.nom	[mm]	ϕ24.2
Nominal Core Cross Section	SC.nom	[mm ²]	491
min. Yielding Strength	Re	[MPa]	>500
min. Tensile Strength	Rm	[MPa]	>630
min. Breaking Load	Fm.nom	[kN]	>222
Nominal Elongation	A5	[%]	>15
Thread	M	[mm]	M24x180
Wrench size nut	SW	[mm]	36
Min. Torque nut	T	[mm]	>100
Delivery lengths	L	[mm]	1200-6000
Estimate anchor bar weight		[kg/m]	3,85

Product Accessories Examples

Product Group	Hex Nut	Ball washer	Wedge
Product Imagery			



Technical Features:

- Rebar bolt are the most common type of bolts used in Tunneling. They increase the self-supporting ability of the ground and limit loosening of blocks as well as shear displacements. Weld spot and corresponding nut available if requested.
- Rebar bolt are fully grouted over the entire length and are usually installed un-tensioned. Cementitious or resin-based grouts are used as bonding media between borehole wall and tendon.
- Rebar bolt provide reliable support in various ground conditions and are a cost effective, field-proven, and standardized system
- Available in black or galvanized or combi-coat (DCP coating).





MINING PRODUCTS

SECTION 1 ROCK BOLTS & ACCESSORIES

SNAKE BOLT

Technical Features:

- High pre-tension force: Pre-tension force is the source of active and timely support for anchor rods, and its magnitude is related to the quality and effectiveness of tunnel support.
- Equal strength: The main material of the rod body is made of positive and negative Q500MPa mining left-handed threaded steel, and advanced processing technology is used to ensure the equal strength of the anchor rod.
- High elongation: The elongation of the rod body of an ordinary anchor rod is greater than 15%, while the elongation of this anchor rod is greater than 22%.
- High impact energy: The impact energy requirement for the rod body of an ordinary anchor rod is greater than 45J, while the impact energy of this special rod body is greater than 100J.
- High anchoring force: The snake-shaped structure at the anchoring end of the anchor rod can increase the anchoring force by 35%, and the snake-shaped size can be designed separately according to the site conditions.
- This product is suitable for mining tunnels with a depth greater than 600 meters, high stress, and with tendencies for impact dynamic pressure and strong dynamic pressure influence.



Specifications						Standard component		
Nominal diameter (mm)	Standard Length (m)	End thread length (mm)	Yield load (KN)	Ultimate Load (KN)	Elongation %	Plate	Washer	Nut
16	1.5,1.6,1.8	80~150	95	130	22	150x150x8mm High strength damping nut	"Sandwich"	M18 High pre tightening damping nut
18	1.8,2.0,2.2	80~150	132	180	22	150x150x8mm High strength damping nut	"Sandwich"	M20 High pre tightening damping nut
20	2.0,2.2,2.4	80~150	162	225	22	150x150x10mm High strength damping nut	"Sandwich"	M22 High pre tightening damping nut
22	2.2,2.4,2.8	80~150	200	270	22	150x150x10mm High strength damping nut	"Sandwich"	M24 High pre tightening damping nut



MINING PRODUCTS

SECTION 1 ROCK BOLTS & ACCESSORIES

R-TECH BOLT

Technical Features:

- Left hand continuously threaded bar, with 6[mm] pitch allowing higher tension for a given torque.
- Available as deboned version, or plain bar with a number of possible configurations of accessories.
- Dynamic testing conducted without bolt failure to 47[kJ] absorbed energy.
- Suitable for use with either resin capsules or cementitious grout.
- Resin Shredder actively promotes shredding of the capsule film and mixing of the resin components while centralizing the bolt in boreholes up to 40[mm].
- Available in Galvanized.



Specifications						
R-TECH			20MM		25MM	
Characteristic Value / Type	Symbol	Unit	Min. Value	Typical Value	Min. Value	Typical Value
External Dia.	De	[mm]	19.5	19.5	23.5	23.5
Nominal weight	M	[kg/m]	2.46	2.46	3.4	3.4
Ultimate load	Fm	[kN]	190	220	290	310
Yield Load		[kN]	160	173	215	250
Yield strength	Re	[Mpa]	500	550	500	570
Ultimate strength	Rm	[Mpa]	600	700	650	720
Elongation	A	[%]	15	20	15	21
Delivery lengths	L	[mm]	2400/3000			



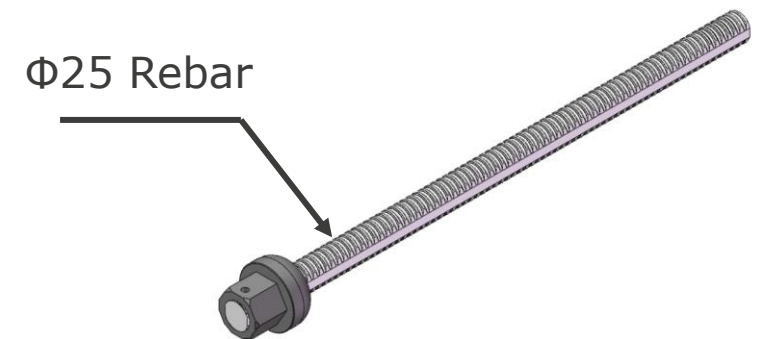
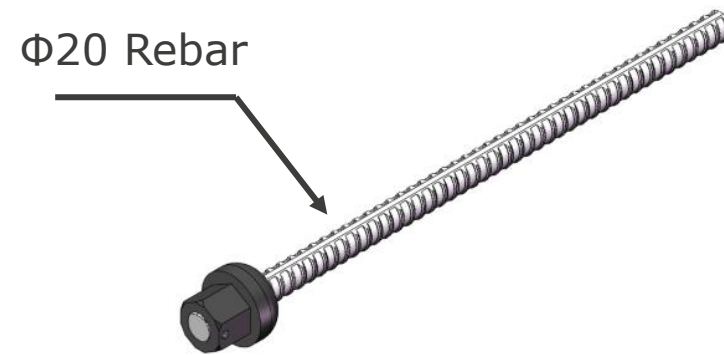
MINING PRODUCTS SECTION 1 ROCK BOLTS & ACCESSORIES

REBAR; GEWI

Technical Features:

- Left hand thread bar.
- Suitable for use with either resin capsules or grout.
- Paddle resin mixing device actively promotes resin mixing and anchorage in smaller hole diameters.
- Dome nut design allows the use of a standard 36mm A.F. tightening spanner.
- Various torque rated shear pin break-out nuts available for use on R-Tech 20mm bolts.
- Available in black or galvanized.

Specifications				
Nominal Dia (mm)	Yield strength (MPa)	Ultimate strength (MPa)	Elongation	Length (m)
20	500	630	15%	1200-3000
25	500	630	15%	





MINING PRODUCTS

SECTION 1 ROCK BOLTS & ACCESSORIES

K-BOLT

Technical Features:



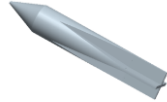
- The specialised steel used has both high tensile strength and elongation properties.
- The bolt can be installed in a drilled hole with either resin or cementitious grouts with equally similar properties.
- The end has a cross wedge to make the bolt more secure once installed.
- Available in black or galvanized.

Technical Specifications

Characteristic Value / Type	Symbol	Unit	K Bolt-M22	K Bolt-M24
Material grade			MG500	HRB500
Rebar diameter	Dc.nom	[mm]	20	25
Nominal Core Cross Section	SC.nom	[mm ²]	314	491
Min. Rebar Yield stress	Rel	[MPa]/[kN]	500MPa/157kN	500MPa/245kN
Min. Rebar Tensile strength	Rm	[MPa]/[kN]	630MPa/198kN	630MPa/310kN
Nominal Elongation	A5	[%]	>15	>15
Thread	M	[mm]	M22x200	M24x200
Wrench size nut	SW	[mm]	33-34	35-36
Delivery lengths	L	[mm]	1200-3500	1200-3500



Product Accessories Examples

Product Group	Hex Nut	Ball washer	Wedge
Product Imagery			





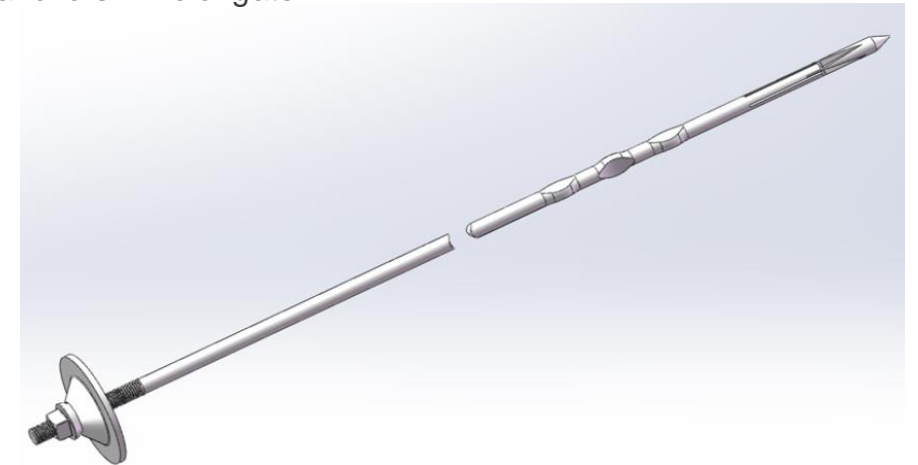
MINING PRODUCTS SECTION 1 ROCK BOLTS & ACCESSORIES

VERSAL BOLT OF LKAB

Technical Features:

- The bolt is made from a smooth steel bar with either two or three anchors positioned along its length.
- The specialised steel used has both high tensile strength and elongation properties.
- The bolt can be installed in a drilled hole with either resin or cementitious grouts with equally similar properties.
- Once installed, the anchors become fixed and do not move within the grout column.
- In the event of a rock burst or rock dilation due to squeezing ground, the smooth bar sections between the anchors will elongate.

	K-RBT 40	K-RBT 60
Steel Grade	MG500 ϕ 20mm	MG500 ϕ 22mm
Thread 1	M22x2.5	M24x3
Thread 2	7/8-9UNC-LH	15/16-10UNC-LH
Paddles Shape follow Canada design	2+1 width= 26-28mm	2+1 width= 28-30 mm
Round domed plate	Φ 150x8mm Q355B	Φ 150x8mm Q355B
Wedge	Φ 20x120	Φ 22x120
Surface	Black / galvanizing	Black / galvanizing
Yield Strength (KN)	152(M22)/142(DIN 405 Rd22x1/8)	177(M24)/174(DIN405 Rd24x1/8)
Tensile Strength (KN)	191(M22)/179(DIN 405 Rd22x1/8)	222(M24)/219(DIN405 Rd24x1/8)
Elongation(after fracture)%	20	20
Mass per meter (kg/meter)	2.47	3.85
Pin Nut Torque(Nm)	Standard/Heavy Duty	155 +/-15
Surface	Black/HDG	Black/HDG





MINING PRODUCTS SECTION 1 ROCK BOLTS & ACCESSORIES

SN25-250 BOLT

Technical Features:

- Field-proven bolting system
- Effective and standardized installation
- Embedding of the tension member in grout ensures optimal bond strength
- Low sensitivity concerning the actual diameter of the borehole
- ALWAGRIP special rib geometry for optimized bond strength available upon request

Technical Specifications			
Characteristic Value / Type	Symbol	Unit	SN25-250 Bolt
Material grade			HRB500
Nominal Core Cross Section	SC.nom	[mm ²]	490
Min. Rebar Yield stress	Rel	[MPa]/[kN]	500MPa/245kN
Min. Rebar Tensile strength	Rm	[MPa]/[kN]	630MPa/310kN
Nominal Elongation	A5	[%]	>15
Thread	M	[mm]	M26x3
Wrench size nut	SW	[mm]	40-41
Delivery lengths	L	[mm]	1500-6000





MINING PRODUCTS SECTION 1 ROCK BOLTS & ACCESSORIES

POSIMIX BOLT

Technical Features:

- Specially designed spring wire attached to the up hole end.
- Ideal for installation of resin grouted bolts in larger diameter boreholes.
- Helix features bolt centralization and improved mixing of resin cartridges.
- Reduction of “gloving” effects.
- Available in black or thermal diffusion coating.



Technical Specifications

Characteristic Value / Type	Symbol	Unit	Posimix Bolt-20
Material grade			MG500
Rebar diameter	Dc.nom	[mm]	20
Nominal Core Cross Section	SC.nom	[mm ²]	314
Min. Rebar Yield stress	Rel	[MPa]/[kN]	500MPa/157kN
Min. Rebar Tensile strength	Rm	[MPa]/[kN]	630MPa/198kN
Nominal Elongation	A5	[%]	>15
Wrench size nut	SW	[mm]	35-36
Delivery lengths	L	[mm]	1200-3500

Product Accessories Examples

Product Group	Hex Nut	Ball Washer	Plastic washer	spring
Product Imagery				





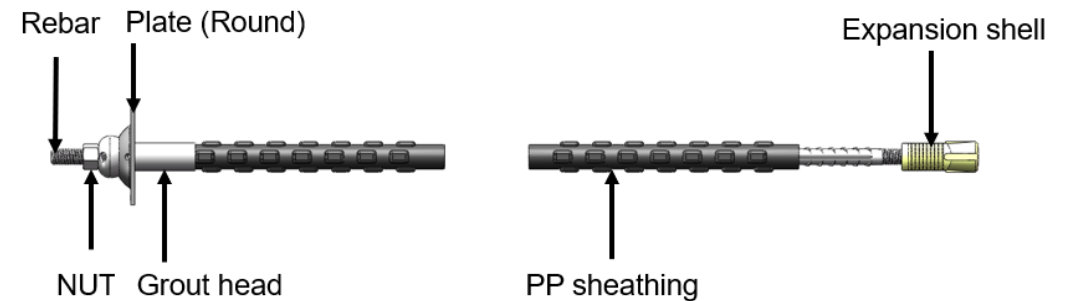
MINING PRODUCTS

SECTION 1 ROCK BOLTS & ACCESSORIES

CT BOLT

Technical Features:

- Active reinforcement by pre-stressing of the expansion shell anchor
- Allowance of a certain amount of elastic deformation of the R-Tech bolt included by displacements of the ground
- Flexible grouting behind the working face allows an optimum adaptation of the CT-Bolt to given ground and operation conditions
- Optimum alignment and completer grout coverage of the bolt are ensured by the polyethylene sleeve
- Available in black or galvanized of combi-coat (DCP coating)



Specifications

Characteristic Value / Type	Symbol	Unit	CT-M20	CT-M22	CT-M24	CT-M33	
Rebar diameter		[mm]	20	22	25	32	
Thread designation		[mm]	M20	M22	M24	M33	
Rebar cross-sectional area	At	[mm ²]	314	380	491	804	
Thread cross-sectional area	Ar	[mm ²]	245	303	353	694	
Mechanical Anchor	Yield strength (HRB500)	Rel	[MPa]	500	500	500	500
	Ultimate strength (HBR500)	Rm	[MPa]	630	630	630	630
	Yield strength (HRB600)	Rel	[MPa]	600	600	600	600
	Ultimate strength (HBR600)	Rm	[MPa]	730	730	730	730
Minimum load capacity – Point anchored	Yield load (HRB500)		[kN]	123	151	177	347
	Ultimate load (HBR500)		[kN]	154	191	222	437
	Yield load (HRB600)		[kN]	147	182	212	416
	Ultimate load (HBR600)		[kN]	179	221	258	507
Core diameter – bar		[mm]	20	22	25	32	
Borehole diameter		[mm]	φ45-48	φ45-48	φ53-55	φ60-65	
Corrosion protection			GALV or DCP Coating				
Delivery lengths		[mm]	2000-6800				

Product Accessories Examples

Product Group	Hex Nut	Dome Plate	Grout tube	Plastic Tube	Expansion Shell
Product Imagery					





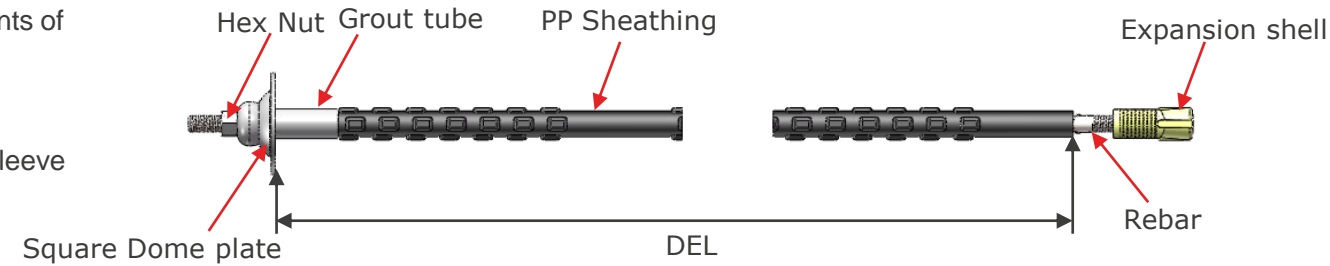
MINING PRODUCTS

SECTION 1 ROCK BOLTS & ACCESSORIES

CT BOLT TYPE B

Technical Features:

- Active reinforcement by pre-stressing of the expansion shell anchor
- Allowance of a certain amount of elastic deformation of the R-Tech bolt included by displacements of the ground
- Flexible grouting behind the working face allows an optimum adaptation of the CT-Bolt to given ground and operation conditions
- Optimum alignment and completer grout coverage of the bolt are ensured by the polyethylene sleeve
- Calcuatory ultimate load rebar tendon d.25[mm]:310[kN].
- DEL:1600mm; 2000mm; 2500mm; 3500m
- Total length: 1911; 2311; 2811; 3811
- Available in black or galvanized or combi-coat (DCP coating)



Specifications

Characteristic Value / Type	Sym-bol	Unit	CP Type C - M24	
Rebar diameter		[mm]	25	
R-Tech diameter		[mm]	M25	
Rebar cross-sectional area		[mm ²]	491	
Thread cross-sectional area	Ar	[mm ²]	353	
Mechanical Anchor	Yield strength	Rel	[MPa]	500
	Ultimate strength	Rm	[Mpa]	630
Minimum load capacity – Point anchored	Yielding load		[kN]	177
	Ultimate load		[kN]	222
Core diameter -bar		[mm]	25	
Borehole diameter		[mm]	ϕ53-55	

Corrosion protection

DCP coating:
1.HOT DIP GALVANIZED ACC.TO DIN EN ISO 1461-COATING.
2.EPOXY COATING ACC.TO ISO 12944-5-THICKNESS 80µm MIN.

Product Accessories Examples

Product Group	Hex Nut	Dome Plate	Grout tube	Plastic Tube	Expansion Shell
Product Imagery					



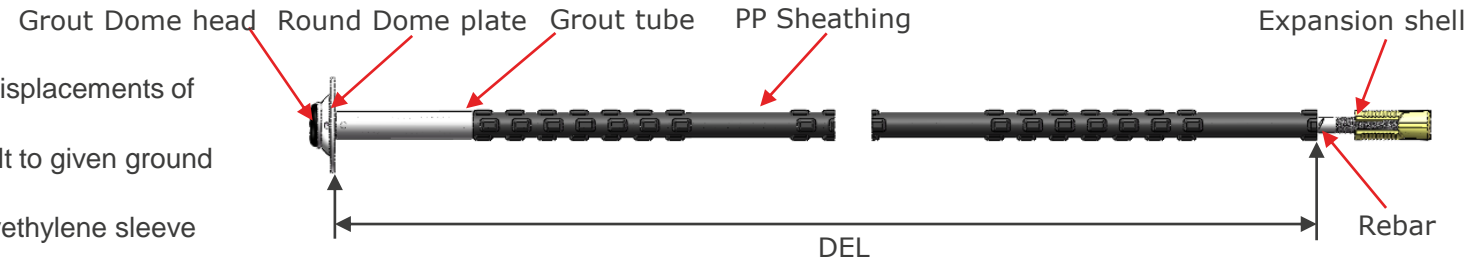


MINING PRODUCTS SECTION 1 ROCK BOLTS & ACCESSORIES

LP BOLT TYPE C

Technical Features:

- Active reinforcement by pre-stressing of the expansion shell anchor
- Allowance of a certain amount of elastic deformation of the R-Tech bolt included by displacements of the ground
- Flexible grouting behind the working face allows an optimum adaptation of the LT-Bolt to given ground and operation conditions
- Optimum alignment and completer grout coverage of the bolt are ensured by the polyethylene sleeve
- Calculatory ultimate load rebar tendon d.25[mm]:310[kN].
- DEL:1600mm; 2000mm; 2500mm
- Total length; 1827mm; 2227mm; 2727mm
- Available in black or galvanized or combi-coat (DCP coating)



Specifications

Characteristic Value / Type	Sym-bol	Unit	LP Type C - M24
Rebar diameter		[mm]	25
R-Tech diameter		[mm]	M25
Rebar cross-sectional area		[mm ²]	491
Thread cross-sectional area	Ar	[mm ²]	353
Mechanical Anchor	Yield strength	Rel	[MPa] 500
	Ultimate strength	Rm	[Mpa] 630
Minimum load capacity - Point anchored	Yielding load		[kN] 177
	Ultimate load		[kN] 222
Core diameter -bar		[mm]	25
Borehole diameter		[mm]	φ53-55
Corrosion protection			DCP coating: 1.HOT DIP GALVANIZED ACC.TO DIN EN ISO 1461-COATING. 2.EPOXY COATING ACC.TO ISO 12944-5-THICKNESS 80μm MIN.

Product Accessories Examples

Product Group	Grout dome head	Round Dome Plate	Grout tube	Plastic Tube	Expansion Shell
Product Imagery					



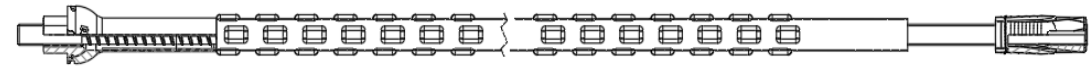


MINING PRODUCTS SECTION 1 ROCK BOLTS & ACCESSORIES

DCPA BOLT

Technical Features:

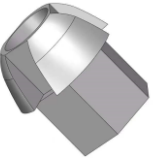



- Active reinforcement by pre-stressing of the expansion shell anchor
- Allowance of a certain amount of elastic deformation of the bolt included by displacements of the ground
- Flexible grouting behind the working face allows an optimum adaptation of the DCPA Bolt to given ground and operation conditions
- Optimum alignment and complete grout coverage of the bolt are ensured by the polyethylene sleeve
- Available in black or galvanized or combi-coat (DCP coating)



Specifications

Characteristic Value / Type	Sym-bol	Unit	DCPA BOLT- M24
Material grade			MG600
Rebar diameter		[mm]	22
Rebar cross-sectional area		[mm ²]	380
Thread cross-sectional area	Ar	[mm ²]	353
Mechanical Anchor	Yield strength	Rel	[MPa] 600
	Ultimate strength	Rm	[Mpa] 730
Minimum load capacity – Point anchored	Yielding load		[kN] 211
	Ultimate load		[kN] 257
Core diameter -bar		[mm]	22
Borehole diameter		[mm]	ø45-50

Product Accessories Examples

Product Group	Grout dome nut	Grout tube	Plastic Tube	Expansion Shell
Product Imagery				





MINING PRODUCTS SECTION 1 ROCK BOLTS & ACCESSORIES

FIBERGLASS BOLT

Technical Features:

- Glass-reinforced plastic (GRP) bolts are used as an alternative to conventional ground control elements made of steel. Thanks to the rapid development of production technologies and an increasing share of mechanical excavation, GRP systems have gained importance in Tunneling around the world.
- Fields of application of GRP bolts range from cuttable bolts for mechanical excavations to injection lances or forepoling.
- DSI Underground provides a diversified portfolio of GRP systems for various underground applications which is completed by longtime experience in the production and application of GRP bolts.



Specification								
Characteristic Value / Type	Symbol	Unit	CS20-190	CS25-300	CS32-560	CH25-250	CH32-350	CR32-315
Nominal external dia.	De.nom	[mm]	20	25	32	25	32	32
Nominal cross-section	S0	[mm ²]	186	346	580	230	340	340
Nominal weight	M	[kg/m]	0.60	0.90	1.30	0.65	1.00	0.95
Ultimate load bar	Fm.nom	[kN]	190	300	560	250	350	315
Ultimate strength bar	Rm.nom	[N/mm ²]	1,000	900	1,000	1,000	1,000	900
Ultimate elongation bar	A	[%]	2.5	1.7	2.5	2.5	2.5	1.5
Share force bar	Fs.nom	[kN]	90	160	230	110	140	140
Modulus of elasticity	E	[N/mm ²]	40,000	51,000	40,000	40,000	40,000	61,000
Ultimate load system	Steel hex nut	[kN]	70	170	130	100	130	140
	GPR domed nut	[kN]	70	70	90	70	90	105
	GPR hex nut	[kN]	70	170	120	100	120	200
	Steel coupling	[kN]	80	165	180	170	180	185
Delivery lengths	L	[mm]	1.0-6.0					





MINING PRODUCTS

SECTION 1 ROCK BOLTS & ACCESSORIES

BALL NUT

Technical Features:

- Allows centralization of the bolt onto the surface support maximizing load transfer in non-axial conditions.
- Available in black or galvanized.

Specification

L-Tech Bolt Diameter (mm)	Height (mm)	Hex Diameter (mm)	Weight (kg)
20	46	35~36	0.39
25	54	35	0.40





MINING PRODUCTS

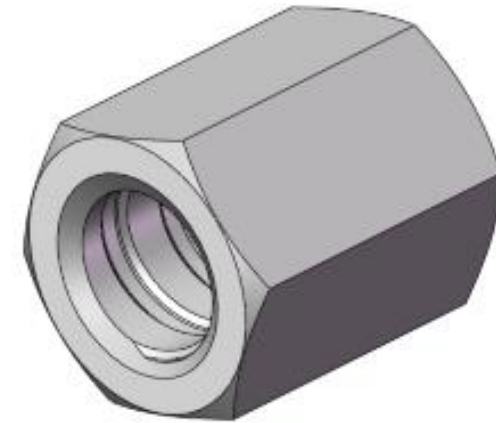
SECTION 1 ROCK BOLTS & ACCESSORIES

HEX NUT

Technical Features:

- Allows centralization of the bolt onto the surface support maximizing load transfer in non-axial conditions.
- This nut is used in conjunction bolt with full screw threads.
- Available in black or galvanized.

Specification		
L-Tech Bolt Diameter (mm)	height (mm)	Hex Diameter (mm)
20	46	35 ~ 36
25	54	35 ~ 36





MINING PRODUCTS

SECTION 1 ROCK BOLTS & ACCESSORIES

R-TECH COUPLER

Technical Features:

- Allows for versatility in support options
- Multiple bar lengths can be joined together to maximize reinforcement length as required
- Load tested for capacity compatibility with the R-Tech bar
- Available in black or galvanized

Specification			
R-Tech Bolt Diameter (mm)	Length (mm)	OD (mm)	Weight (kg)
20	130	35	0.50
25	130	35	0.50





MINING PRODUCTS

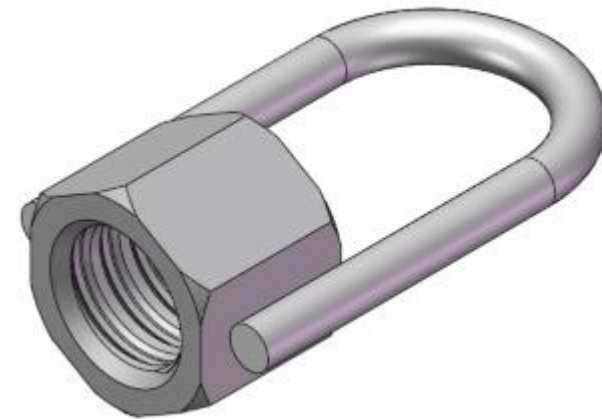
SECTION 1 ROCK BOLTS & ACCESSORIES

U HANGER NUT

Technical Features:

- 8mm diameter "U" hanger
- Available in all thread types
- Readily threaded onto the base of rock bolts for use as a hanger
- Available in black or galvanized

Specification		
R-Tech Bolt Diameter (mm)	Length (mm)	Width (mm)
20	95	35
25	90	35





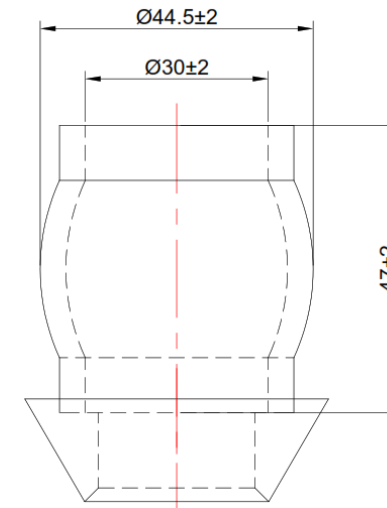
MINING PRODUCTS

SECTION 1 ROCK BOLTS & ACCESSORIES

YIELD TUBE FOR 25MM

Technical Features:

- The yield tube can adapt to the characteristics of large deformation and strong dynamic pressure of the tunnel, maximize the protection of the bolt breaking in advance or elastic deformation, ensure the stability of the supporting system, and improve the supporting effect of the tunnel
- Available in black or galvanized



Specification

YIELD TUBE	External Diameter (mm)	Internal Diameter (mm)	Height (mm)	Thickness (mm)	Yield Strength (KN)
	44.5	30	47	4.0	170~200



MINING PRODUCTS

SECTION 1 ROCK BOLTS & ACCESSORIES

SHELL; EXPANSION; 24MM; LHTHR; TRI LEAF & SPRING

Technical Features:

- Available in black or galvanized.
- LH.

Specification

EXPANSION SHELL (mm)	height (mm)	Leaf quantity	Weight (kg)
M24	112~115	3	0.52





MINING PRODUCTS

SECTION 2 FRICTION BOLTS & ACCESSORIES

HD FRICTION BOLT

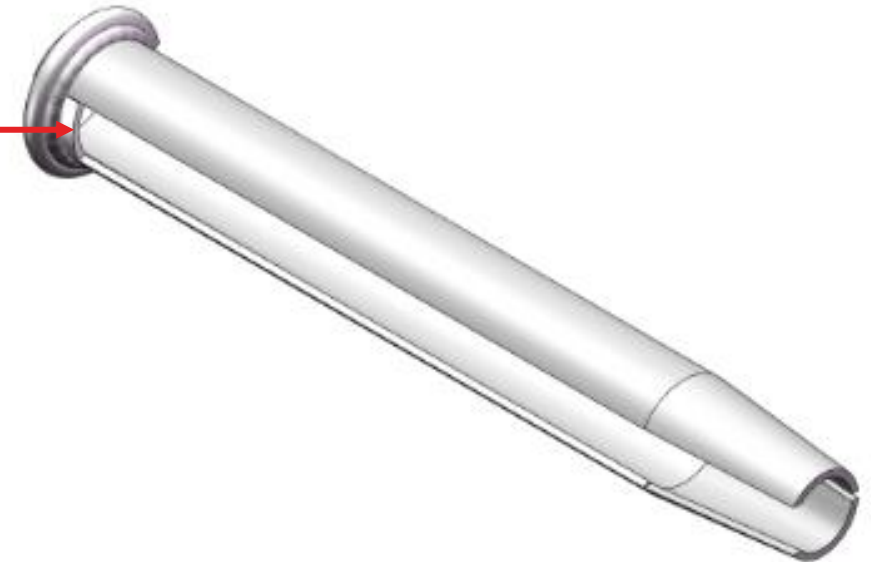
Technical Features:

- The HD Friction Bolt is manufactured from high strength steel tube which has a slot along its entire length. A ring, or collar, is welded on the outer end to hold a domed plate to the rock surface.
- HD Friction bolts can be load tested by fitting a special ring to the bolt prior to its installation. Pull tests can then be conducted with a hollow ram hydraulic jack.
- HD Friction has higher strength compared to Friction bolt, which maximizes the protection of the rod from damage.
- Further corrosion protection can be provided galvanizing.

Specifications

Characteristic Value / Type	Symbol	Unit	FS47
External Dia.	De	[mm]	47
Ultimate load	Fm	[kN]	158/168
Yield strength	Re	[Mpa]	355
Ultimate strength	Rm	[Mpa]	470-630
Elongation	A	[%]	20
Recommended drill bit dia.	B	[mm]	41-44
Delivery lengths	L	[mm]	600-3000
Wall Thickness		[mm]	3.0/3.2

Duty clip





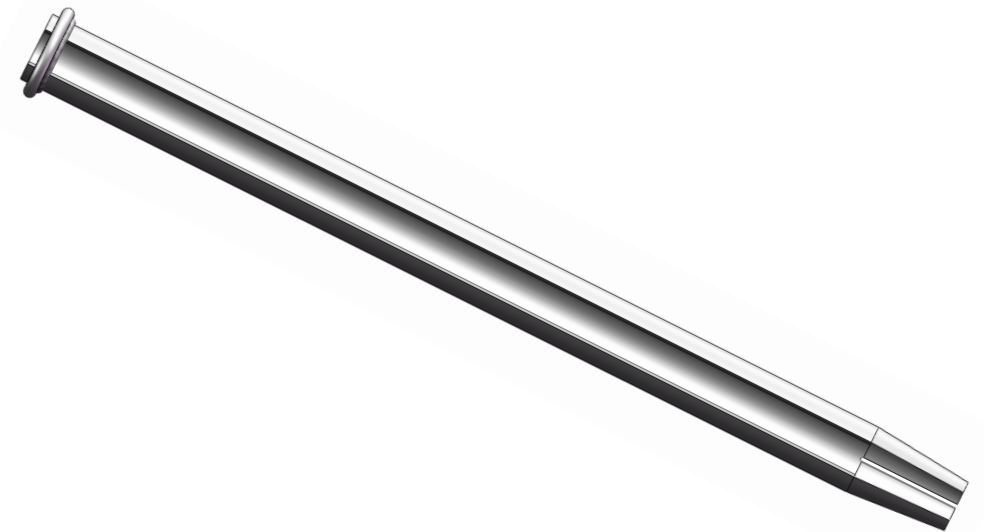
MINING PRODUCTS

SECTION 2 FRICTION BOLTS & ACCESSORIES

FRICTION BOLT

Technical Features:

- The Friction Bolt is manufactured from high strength steel tube which has a slot along its entire length. A ring, or collar, is welded on the outer end to hold a domed plate to the rock surface.
- Friction bolts can be load tested by fitting a special ring to the bolt prior to its installation. Pull tests can then be conducted with a hollow ram hydraulic jack.
- Further corrosion protection can be provided galvanizing.



Specifications

Characteristic Value / Type	Sym bol	Unit	FS33	FS35	FS39	FS46	FS47	
External Dia.	De	[mm]	33	35	39	46	47	
Ultimate load	Fm	[kN]	90/118	92	105/115	155	158/168	
Yield strength	Re	[Mpa]	355					
Ultimate strength	Rm	[Mpa]	470-630					
Elongation	A	[%]	20					
Recommended drill bit dia.	B	[mm]	30-32	32-34	36-38	41-44	41-44	
Delivery lengths	L	[mm]	600-3000					
Wall Thickness		[mm]	2.3/3.0	2.3	2.3/2.5	3.0/3.2	3.0/3.2	





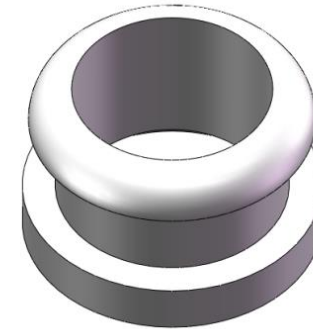
MINING PRODUCTS SECTION 2 FRICTION BOLTS

COLLAR; PULL; TESTING; RING

Technical Features:

- Pull test ring For 47mm Friction Bolt.
- Available in black or galvanized.

Specification				
Square Dimension (mm)	Height (mm)	Outside (mm)	Inside (mm)	Weight (kg)
47	45	73	49	0.41





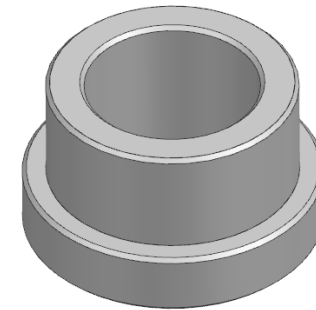
MINING PRODUCTS SECTION 2 FRICTION BOLTS

COLLAR; PULL; TESTING; RING

Technical Features:

- Pull test ring For 47mm Friction Bolt.
- Available in black or galvanized.

Specification				
Square Dimension (mm)	Height (mm)	Outside (mm)	Inside (mm)	Weight (kg)
47	40	70	41	0.57





MINING PRODUCTS

SECTION 3 CABLE BOLTS & ACCESSORIES

CABLE BOLT-SINGLE STRAND

Technical Features:

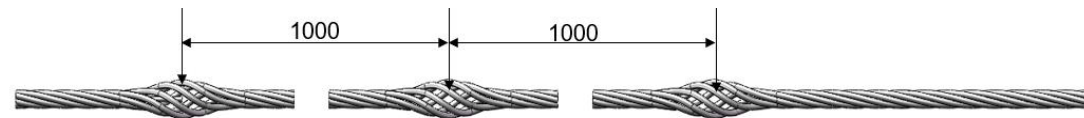
- Fully grouted cable bolts are commonly used for bolting applications in limited space conditions. They are a high strength ground control element for critical underground sections.

Main applications for cable bolts:

- Supplementary bolting.
- Reinforcement of machine or utility caverns.
- Large-scale non-entry excavations.
- Intersections and draw points.



Specification				
Characteristic Value / Type	Unit	CB15.2	CB17.8	CB21.8
Nominal Dia.	[mm]	15.2	17.8	21.8
Cross-section	[mm ²]	140	191	313
Weight	[kg/m]	1.10	1.50	2.48
Tensile strength	[Mpa]	1860	1860	1860
Yield load	[kN]	229	311	513
Ultimate load	[kN]	260	355	583
Length	[mm]	6300 or 12000		





MINING PRODUCTS

SECTION 3 CABLE BOLTS & ACCESSORIES

15.2MM CABLES WITH EXPANSION SHELL AND GROUTING TUBE AND BREATHER TUBES

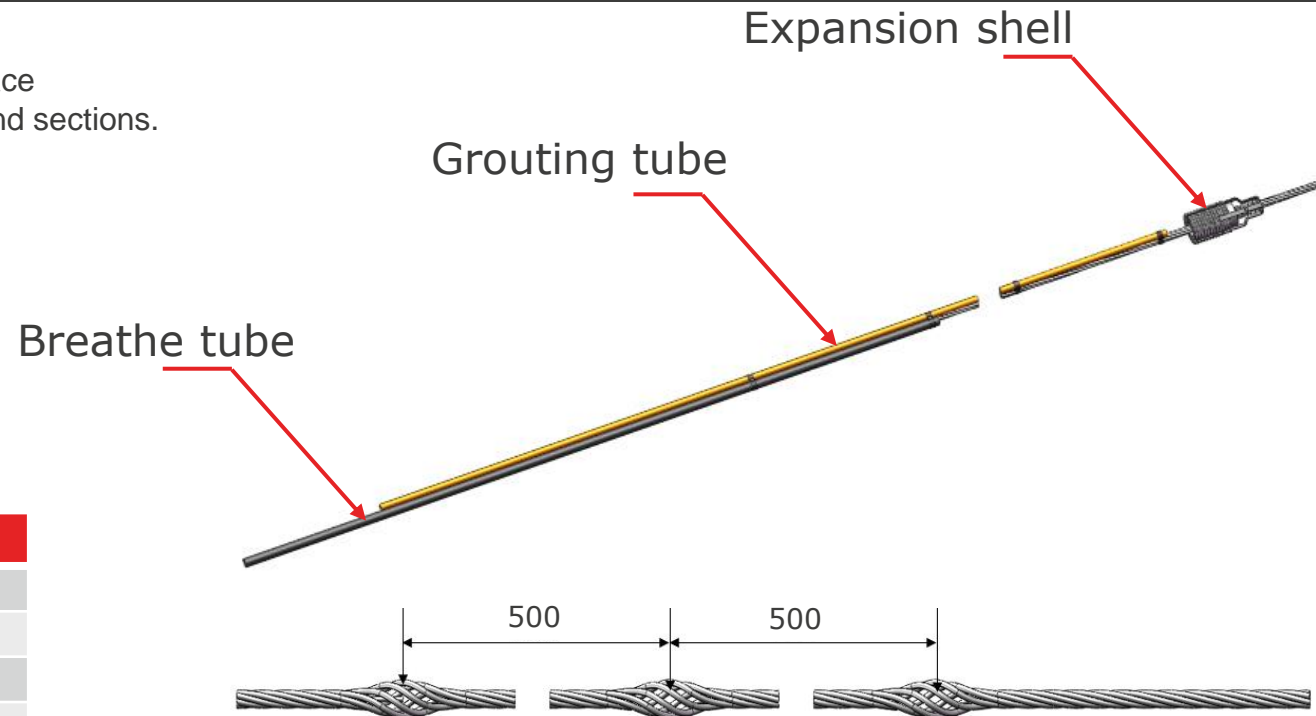
Technical Features:

– Fully grouted cable bolts are commonly used for bolting applications in limited space conditions. They are a high strength ground control element for critical underground sections.

Main applications for cable bolts:

- Supplementary bolting.
- Reinforcement of machine or utility caverns.
- Large-scale non-entry excavations.
- Intersections and draw points.
- Available in plain strand, point anchor bulbed or fully bulbed.

Specification		
Characteristic Value / Type	Unit	CB15.2
Nominal Dia.	[mm]	15.2
Cross-section	[mm ²]	140
Weight	[kg/m]	1.10
Tensile strength	[Mpa]	1860
Yield load	[kN]	229
Ultimate load	[kN]	260
Length	[mm]	6300 or 12000





MINING PRODUCTS

SECTION 3 CABLE BOLTS & ACCESSORIES

15.2MM/21.8MM FISH HOOK CABLE BOLTS

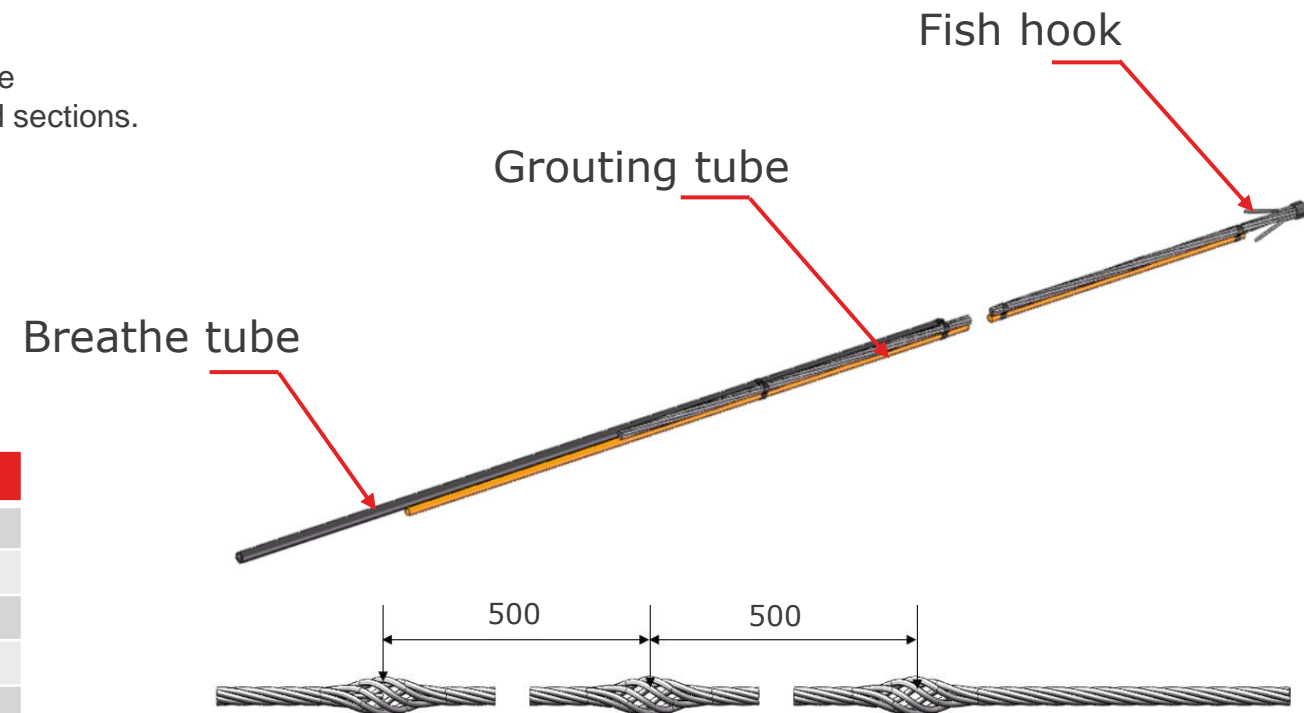
Technical Features:

- Fully grouted cable bolts are commonly used for bolting applications in limited space conditions. They are a high strength ground control element for critical underground sections.

Main applications for cable bolts:

- Easy installation from the ground, jumbo or integrated tool carrier.
- Available in plain strand, point anchor bulbed or fully bulbed.
- Available in black or galvanized.

Specification			
Characteristic Value / Type	Unit	FH-CB 15.2	FH-CB 21.8
Nominal Dia.	[mm]	15.2	21.8
Cross-section	[mm ²]	140	313
Weight	[kg/m]	1.10	2.48
Tensile strength	[Mpa]	1860	1860
Yield load	[kN]	229	513
Ultimate load	[kN]	260	583
Length	[mm]	6300 or 12000	





MINING PRODUCTS

SECTION 3 CABLE BOLTS & ACCESSORIES

BARREL & WEDGE

Technical Features:

- Domed Barrels & Wedges for 15.2mm diameter strand are used with volcano plates.
- Flat Barrels and Wedges in 15.2mm are used on flat plates on cable bolts and with tension blocks on trusses.
- All Barrels and Wedges have an oil film coating and are packaged in strong buckets for corrosion protection.
- Available in black or galvanized.



Specification			
Applicable Strand Diameter (mm)	Outer Diameter (mm)	Length (mm)	Weight (kg)
15.2	46±1	45±1	0.48
17.8	53±1	53±1	0.75
21.8	68±1	62±1	1.50





MINING PRODUCTS

SECTION 3 CABLE BOLTS & ACCESSORIES

DOME BARREL & WEDGES

Technical Features:

- Domed Barrels & Wedges for 21.8mm ,17.8mm and 15.2mm diameter strand are used with volcano plates
- Flat Barrels and Wedges in 15.2mm are used on flat plates on cable bolts and with tension blocks on trusses
- All Barrels and Wedges have an oil film coating and are packaged in strong buckets for corrosion protection
- Available in black or galvanized



Specification			
Applicable Strand Diameter (mm)	Outer Diameter (mm)	Length (mm)	Weight (kg)
15.2	46±1	45±1	0.48
17.8	53±1	53±1	0.75
21.8	68±1	62±1	1.50



MINING PRODUCTS

SECTION 3 CABLE BOLTS & ACCESSORIES

CABLE BOLT-SINGLE STRAND FISH HOOK

Technical Features:

- Fully grouted cable bolts are commonly used for bolting applications in limited space conditions. They are a high strength ground control element for critical underground sections.

Main applications for cable bolts:

- Supplementary bolting.
- Reinforcement of machine or utility caverns.
- Large-scale non-entry excavations.
- Intersections and draw points.



Specification				
Characteristic Value / Type	Unit	CB15.2	CB17.8	CB21.8
Nominal Dia.	[mm]	15.2	17.8	21.8
Cross-section	[mm ²]	140	191	313
Weight	[kg/m]	1.10	1.50	2.48
Tensile strength	[Mpa]	1860	1860	1860
Yield load	[kN]	229	311	513
Ultimate load	[kN]	260	355	583



MINING PRODUCTS

SECTION 3 CABLE BOLTS & ACCESSORIES

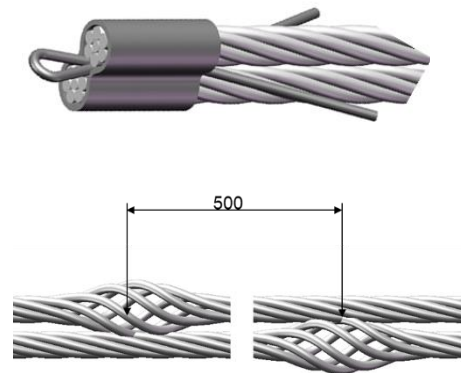
CABLE BOLT-TWIN STRAND

Technical Features:

- Fully grouted cable bolts are commonly used for bolting applications in limited space conditions. They are a high strength ground control element for critical underground sections.

Main applications for cable bolts:

- Supplementary bolting.
- Reinforcement of machine or utility caverns.
- Large-scale non-entry excavations.
- Intersections and draw points.



Specification		
Characteristic Value / Type	Unit	CB15.2
Nominal Dia.	[mm]	15.2
Cross-section	[mm ²]	140
Weight	[kg/m]	1.10
Tensile strength	[Mpa]	1860
Yield load	[kN]	229
Ultimate load	[kN]	260
length	[mm]	4300 ~ 10000
coating	[mm]	Black





MINING PRODUCTS

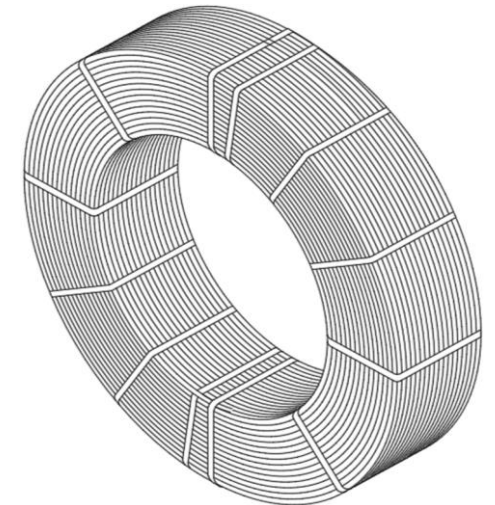
SECTION 3 CABLE BOLTS & ACCESSORIES

CABLE BOLT-ONE BULB; ROLL

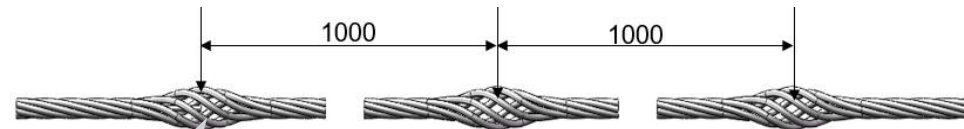
Technical Features:

- Fully grouted cable bolts are commonly used for bolting applications in limited space conditions. They are a high strength ground control element for critical underground sections.
 - Available in plain strand or fully bulbed.
- Main applications for cable bolts:
- Supplementary bolting.
 - Reinforcement of machine or utility caverns.
 - Large-scale non-entry excavations.
 - Intersections and draw points.

Specification			
Characteristic Value / Type	Unit	CB 15.2	CB 17.8
Nominal Dia.	[mm]	15.2	17.8
Cross-section	[mm ²]	140	193
Weight	[kg/m]	1.10	1.50
Tensile strength	[Mpa]	1860	1860
Yield load	[kN]	229	311
Ultimate load	[kN]	260	355
length	[m]	MAX 650	
Coating		Black or Galv	



No bulbed



bulbed





MINING PRODUCTS

SECTION 3 CABLE BOLTS & ACCESSORIES

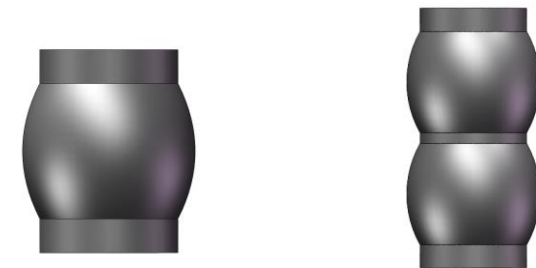
YIELD TUBE

Technical Features:

- Yield Tube available for 17.8mm
- Supplied separately and easily installed, without changing current installation processes
- Allows improved application in squeezing ground
- Anti-corrosion coating available on request

Specifications

Yield tube	External Diameter (mm)	Internal Diameter (mm)	Height (mm)	Thickness (mm)	Yield Strength (KN)
21-25TA	40	23	42	4.5	210~250
21-25TB	40	23	78	4.5	210~250





MINING PRODUCTS

SECTION 3 CABLE BOLTS & ACCESSORIES

TENSION BLOCK

Technical Features:

- Used for joining cable tails in formation of trusses and for bullnose/camelback/pillar wrap applications
- Flat Barrels and Wedges must be used with the tension blocks

Specification				
Applicable Strand Diameter (mm)	Length (mm)	Width (mm)	Height (mm)	Weight (kg)
15.2	240	75	75	10.60
17.8	288	75	75	13



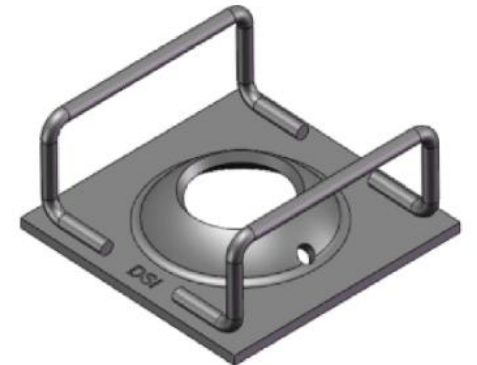
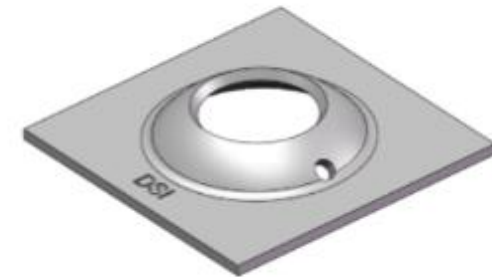


MINING PRODUCTS SECTION 4 PLATES

TYPE B BOLT PLATE

Technical Features:

- Designed for Used in conjunction with CT type B bolt.
- It has a strong load-bearing capacity.
- You can choose to have it with or without a handle.
- Available in black, galvanized or galvanized of combi-coat (DCP coating)



Specification

Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Load Capacity (ton)	Weight (kg)	Weight-handle (kg)
150×150	Q355B	6	55	230	0.95	1.17





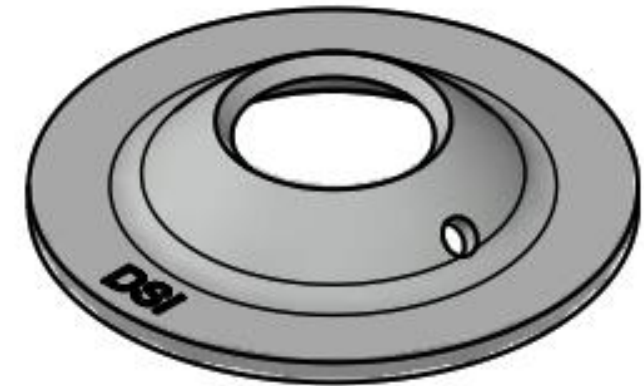
MINING PRODUCTS SECTION 4 PLATES

CT BOLT PLATE

Technical Features:

- Designed for Used in conjunction with CT type B bolt.
- It has a strong load-bearing capacity.
- You can choose to have it with or without a handle.
- Available in black, galvanized or galvanized of combi-coat (DCP coating)

Specification					
Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Weight (kg)	Bolt-type
150 × 150	Q355B	6	50	0.74	M20/M22
150 × 150	Q355B	6	55	0.72	M24
200 X 200	Q355B	10	62	1.34	M33





MINING PRODUCTS SECTION 4 PLATES

TYPE C BOLT PLATE

Technical Features:

- Designed for Used in conjunction with Type C bolt.
- It has a strong load-bearing capacity.
- You can choose to have it with or without a handle.
- Available in black, galvanized or galvanized of combi-coat (DCP coating)

Specification

Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Load Capacity (ton)	Weight (kg)
150×150	Q355B	6	65	230	0.68



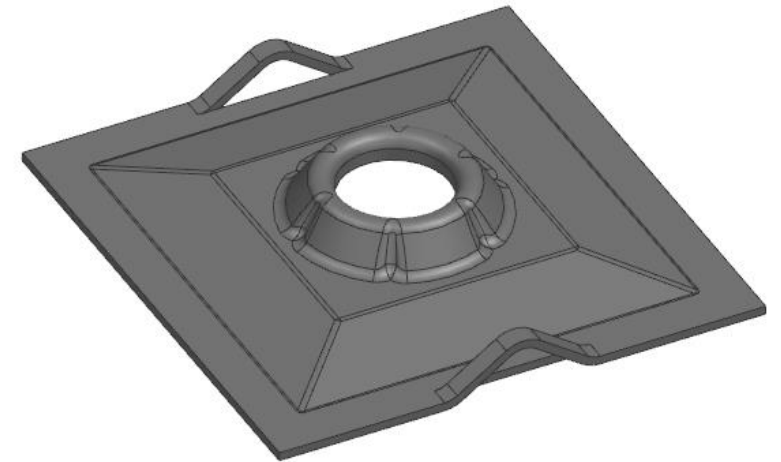


MINING PRODUCTS SECTION 4 PLATES PLATE; STABILISER; 225 X 225MM; 50MM HOLE

Technical Features:

- Designed for used with domed barrel and wedge for better alignment with non-axial installation.
- Same single plate compatible for Friction Bolt.
- Available in Galvanized.

Specification				
Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
225×225	Q235B	4	50	1.57





MINING PRODUCTS

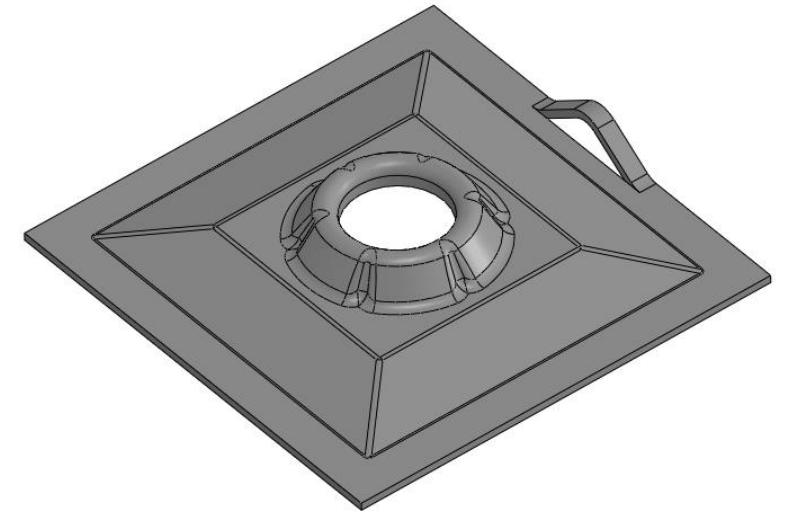
SECTION 4 PLATES

PLATE; STABILISER; 200 X 200MM; 50MM HOLE

Technical Features:

- Designed for used with domed barrel and wedge for better alignment with non-axial installation.
- Same single plate compatible for Friction Bolt.
- Available in Galvanized.

Specifications				
Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
200x200	Q235B	4	50	1.21





MINING PRODUCTS

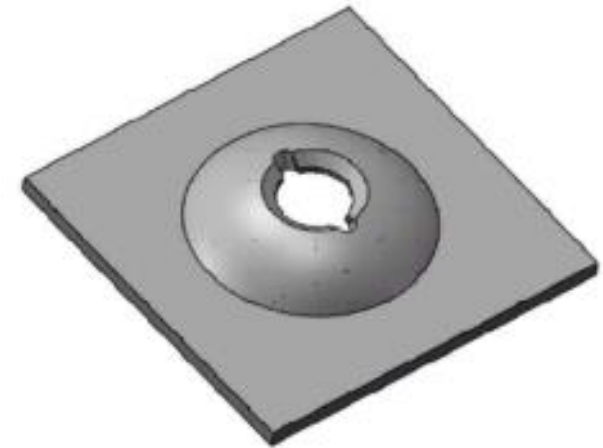
SECTION 4 PLATES

PLATE; STABILISER; 200 X200MM; 40MM HOLE

Technical Features:

- Designed for used with domed barrel and wedge for better alignment with non-axial installation.
- This plate has a high load capacity.
- Available in Galvanized.

Specifications				
Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
200 x 200	Q355B	10	40	3.05



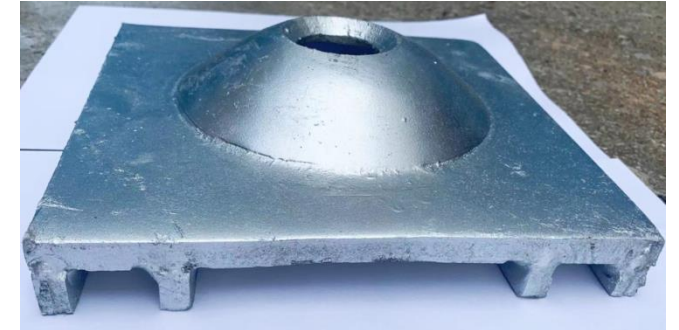


MINING PRODUCTS SECTION 4 PLATES

CABLE SLING PLATE

Technical Features:

- Profile allows the plate to secure the cable and prevent cable movement in high loading/squeezing ground
- Fully welded to accept high horizontal loading
- Available in black or galvanized



Specifications

Square Dimension (mm)	Thickness (mm)	Hole Diameter (mm)	Load Capacity (ton)	Weight (kg)
200×200	12	36	40	4.80





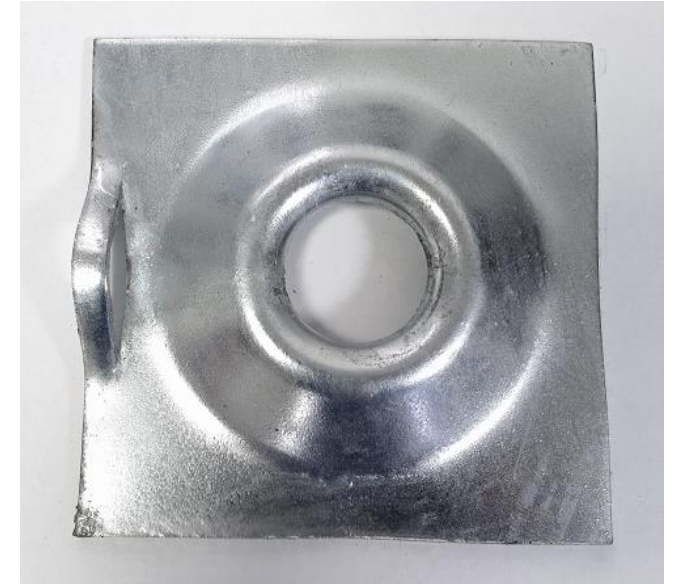
MINING PRODUCTS SECTION 4 PLATES

ROLL TOP PLATE

Technical Features:

- Same single plate compatible for 39mm Friction bolt
- 50kg WLL hanger slot
- Available in black or galvanized

Specification				
Square Dimension (mm)	Thickness (mm)	Hole Diameter (mm)	Load Capacity (ton)	Weight (kg)
150×150	4	40	10	0.7





MINING PRODUCTS SECTION 4 PLATES

MESH PLATE

Technical Features:

- For pinning mesh against the rock face over top of pre-installed rock bolts
- Welded nut of any size to thread onto existing installed rock bolts
- Extruded extra height to accommodate the standard tail length of an installed bolt, allowing the mesh to be pushed tight against the rock face
- Available in black or galvanized

Specifications				
Square Dimension (mm)	Thickness (mm)	Hole Diameter (mm)	Load Capacity (ton)	Weight (kg)
150×150	8	36	30	1.80





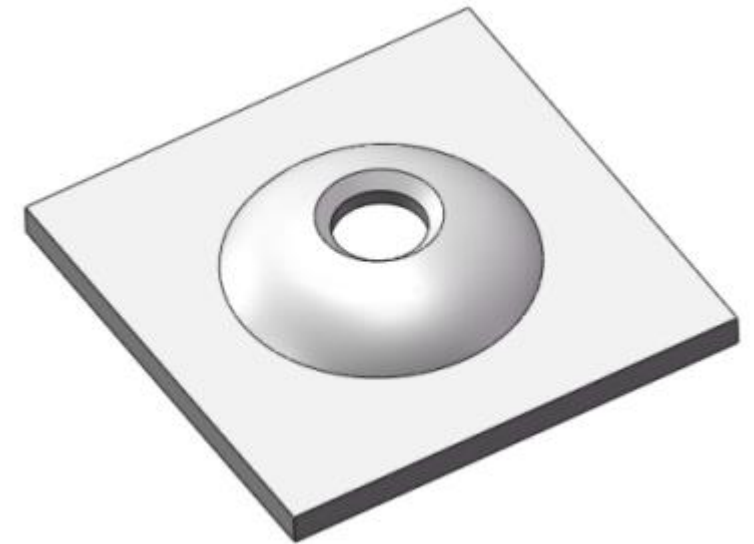
MINING PRODUCTS SECTION 4 PLATES

VOLCANO PLATE FOR CABLE BOLT

Technical Features:

- Designed for used with domed barrel and wedge for better alignment with non-axial installation.
- Available in black or galvanized.

Specification				
Square Dimension (mm)	Thickness (mm)	Hole Diameter (mm)	Load Capacity (ton)	Weight (kg)
200×200	14	40	58	4.40





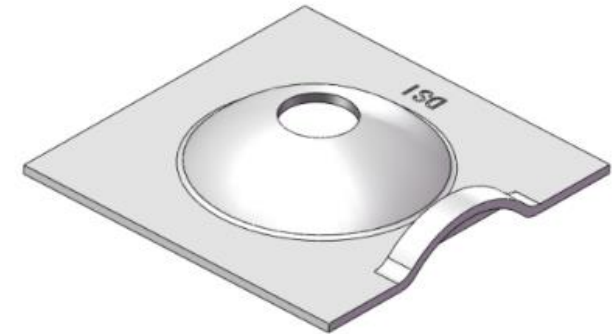
MINING PRODUCTS SECTION 4 PLATES PLATE; STABILISER; 150 X 150MM; 30MM HOLE

Technical Features:

- Designed for used with R-Tech bolt.
- This product has a high load capacity.
- Available in black or galvanized

Specification

Square Dimension (mm)	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
150X150	4	30	0.69

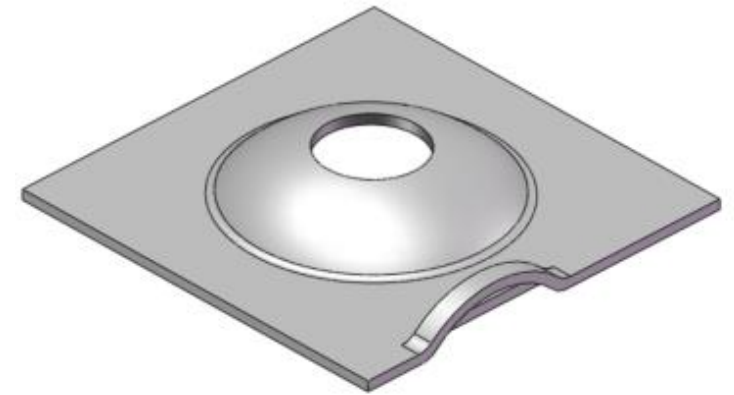




MINING PRODUCTS SECTION 4 PLATES PLATE; STABILISER; 200 X 200MM; 40MM HOLE

Technical Features:

- Designed for used with Friction bolt.
- This product has a high load capacity.
- Available in black or galvanized



Specification			
Square Dimension (mm)	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
200x200	5	50	1.50



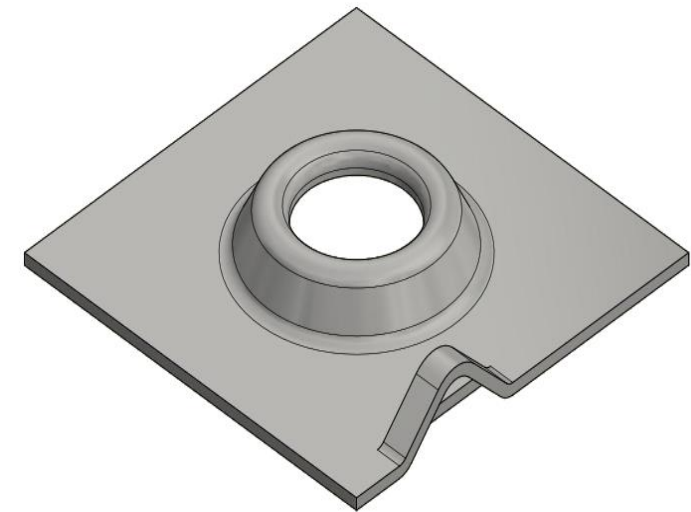
MINING PRODUCTS SECTION 4 PLATES

PLATE; STABILISER; 150 X 150MM

Technical Features:

- Same single plate compatible for Friction bolt.
- Available in black or galvanized

Specification				
Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
150×150	Q235B	3.8	43	0.7
150×150	Q235B	4	36	0.741





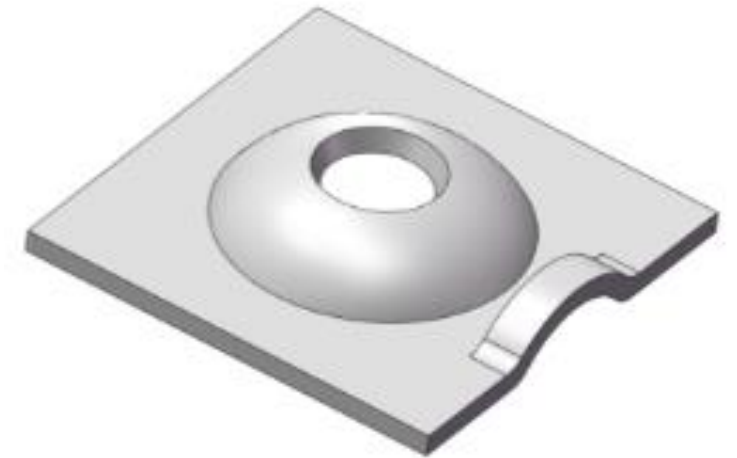
MINING PRODUCTS SECTION 4 PLATES

PLATE; DOME; 150 X 150MM; W/O HANGER

Technical Features:

- Designed for used with R-Tech bolts.
- Available in black or galvanized.

Specification				
Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
150×150	Q355B	8	36	1.36





MINING PRODUCTS SECTION 4 PLATES

PLATE; DOME; 150 X 150MM

Technical Features:

- Designed for used with R-Tech bolts.
- Available in black or galvanized.

PSR15151036

Specification				
Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
150×150	Q355B	10	36	1.69





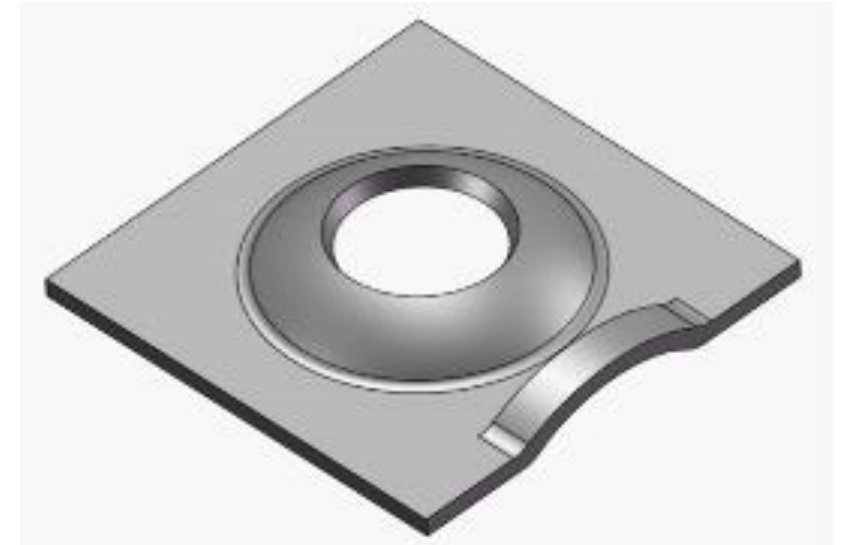
MINING PRODUCTS SECTION 4 PLATES

PLATE; 150 X 150MM; W/O HANGER

Technical Features:

- Works with R-Tech bolt or Friction bolt.
- This product has a high load capacity.
- Available in black or galvanized.

Specification				
Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
150×150	Q235B/Q355B	8.0	50	1.3





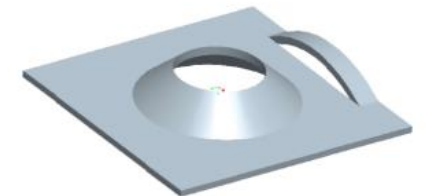
MINING PRODUCTS SECTION 4 PLATES

COMBI-PLATE FOR FRICTION BOLT

Technical Features:

- For pinning mesh against the rock face over top of pre-installed rock bolts.
- Welded nut of any size to thread onto existing installed rock bolts.
- Extruded extra height to accommodate the standard tail length of an installed bolt, allowing the mesh to be pushed tight against the rock face.
- Available in black or galvanized.

Specifications				
Friction Bolt	Square Dimension (mm)	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
FS33	150×150	4	36	0.70
FS35	150×150	4	38	0.69
FS39	150×150	4	42	0.68
FS46/47	150x150	4	50	0.67
Under plate	300x300	2.5	50	1.90

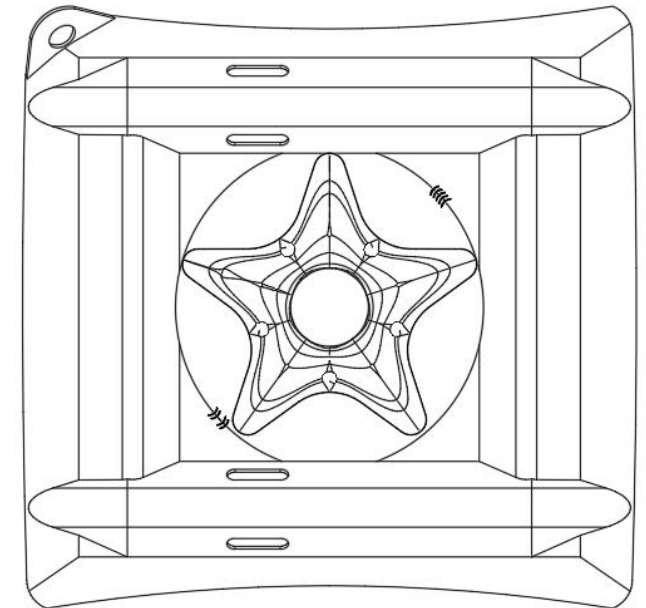




MINING PRODUCTS SECTION 4 PLATES PLATE; FRANKLIN; DUPLEX; 300 X 280MM; 150 X 150MM TOP PLATE

Technical Features:

- DSI Dragonfly 300 Plates incorporate various plate washers attached to a 300x300mm butterfly plate to give a superior product with enhanced performance.
- Designed with a profile that gives greater strength by strategically pressing the vees, placing the perimeter of the Dragonfly Plate in tension.
- Has 'user friendly' rounded corners.
- Plate has a strong load-bearing capacity.
- Available in Black or Galvanized.



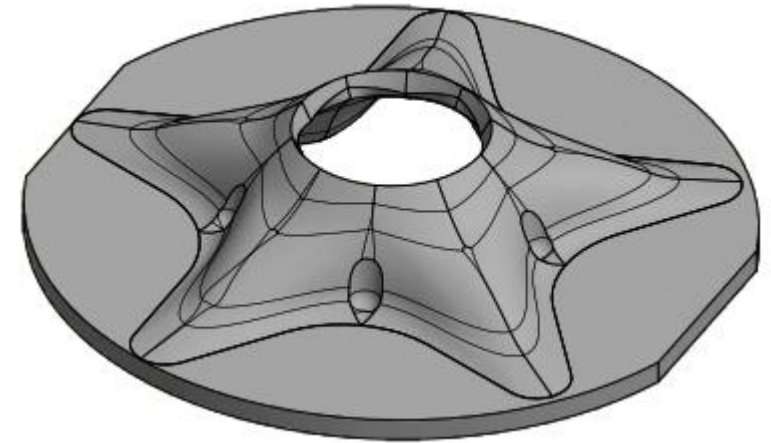
Specification				
Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
150×150	Q355B	5.0	38	0.72
300×300	Q355B	1.8	58.5	1.29



MINING PRODUCTS SECTION 4 PLATES PLATE; STABILISER; 150 X150MM; 38MM HOLE; GALV

Technical Features:

- Designed with a profile that gives greater strength by strategically pressing the vees, placing the perimeter of the Dragonfly Plate in tension.
- Has 'user friendly' rounded corners.
- Plate has a strong load-bearing capacity.
- Available in Black or Galvanized.



Specification

Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
150x150	Q355B	5.0	38	0.72

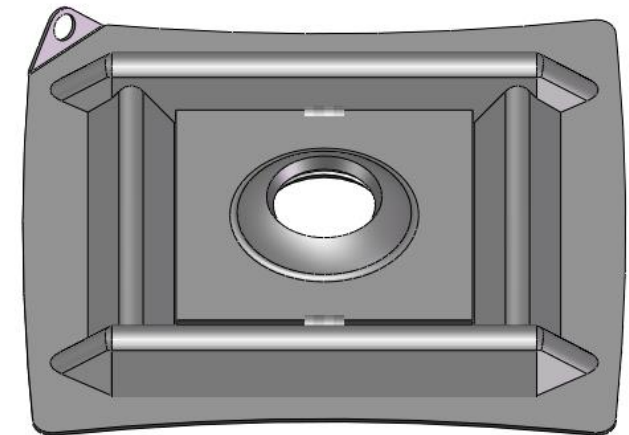


MINING PRODUCTS SECTION 4 PLATES

PLATE; D/FLY; 300 X 300MM; COMBI-PLATE

Technical Features:

- DSI Dragonfly 300 Plates incorporate various plate washers attached to a 300x300mm butterfly plate to give a superior product with enhanced performance.
- Designed with a profile that gives greater strength by strategically pressing the vees, placing the perimeter of the Dragonfly Plate in tension.
- Has 'user friendly' rounded corners.
- Hole Sizes to suit Friction Bolts and Resin Anchor Bolts.
- Allows faster installation by eliminating the handling of two separate components.
- Can facilitate flat and domed plates (up to 150mm square) to increase rock surface coverage area.
- Can be utilized with lighter domed or flat plates to provide an economic advantage over heavier individual components.
- Available in Galvanized.



Specification				
Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
150×150	Q235B	8.0	50	1.36
300×300	Q355B	1.8	58.5	1.29

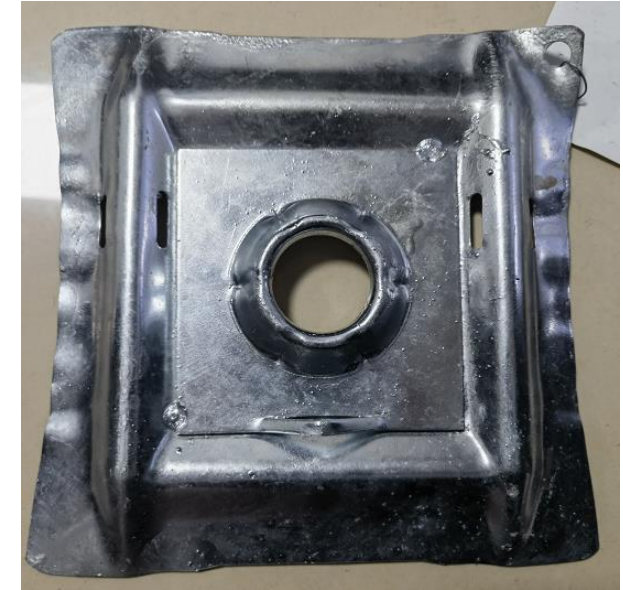


MINING PRODUCTS SECTION 4 PLATES

DRAGONFLY COMBI-PLATE

Technical Features:

- DSI Dragonfly 300 Plates incorporate various plate washers attached to a 300x300mm butterfly plate to give a superior product with enhanced performance.
- Designed with a profile that gives greater strength by strategically pressing the vees, placing the perimeter of the Dragonfly Plate in tension.
- Has ‘user friendly’ rounded corners.
- Hole Sizes to suit Friction Bolts and Resin Anchor Bolts.
- Allows faster installation by eliminating the handling of two separate components.
- Can facilitate flat and domed plates (up to 150mm square) to increase rock surface coverage area.
- Can be utilized with lighter domed or flat plates to provide an economic advantage over heavier individual components.
- Available in Black or Galvanized.



Specification

Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
150×150	Q235B	4.0	50	0.7
300×300	Q355B	1.8	58.5	1.29



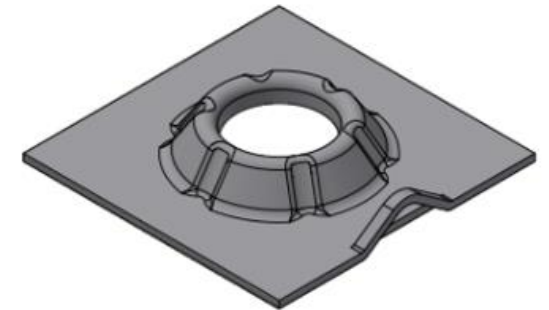


MINING PRODUCTS SECTION 4 PLATES

PLATE; STABILISER; 150 X 150MM

Technical Features:

- Designed with a profile that gives greater strength by strategically pressing the vees, placing the perimeter of the Dragonfly Plate in tension.
- Has 'user friendly' rounded corners.
- Hole Sizes to suit Friction Bolts and Resin Anchor Bolts.
- Allows faster installation by eliminating the handling of two separate components.
- Can be utilized with lighter butterfly plates to provide an economic advantage over heavier individual components.
- Available in Black or Galvanized.



Specification				
Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
150x150	Q235B	4.0	50	0.7

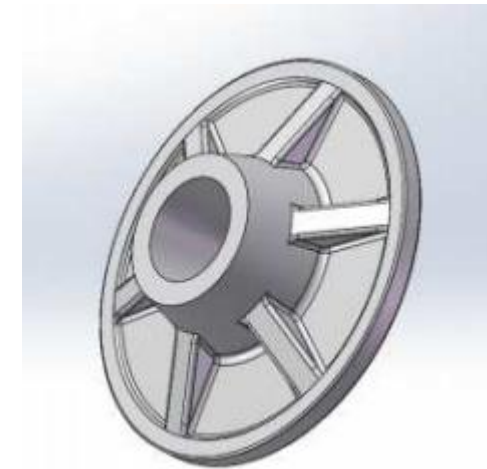


MINING PRODUCTS SECTION 4 PLATES

FIBREGLASS PLATE

Technical Features:

- Fibreglass resin anchor trays, as an important part of the anchor support system, have the following advantages:
- High corrosion resistance.
- Light weight.
- Easy to machine and install.
- Good electrical insulation properties.
- Eco-Friendly.
- Integrated support is effective.



Specification		
Type No.	Diameter(mm)	Height(mm)
PC-140	140	34
PC-170	170	46
PC-200	200	46



MINING PRODUCTS SECTION 4 PLATES

FIBREGLASS PLATE

Technical Features:

- Fibreglass resin anchor trays, as an important part of the anchor support system, have the following advantages:
- High corrosion resistance.
- Light weight.
- Easy to machine and install.
- Good electrical insulation properties.
- Eco-Friendly.
- Integrated support is effective.



Specification		
Type No.	Diameter(mm)	Height(mm)
PD-170H20	140	20
PD-170	170	32
PD-200	200	32



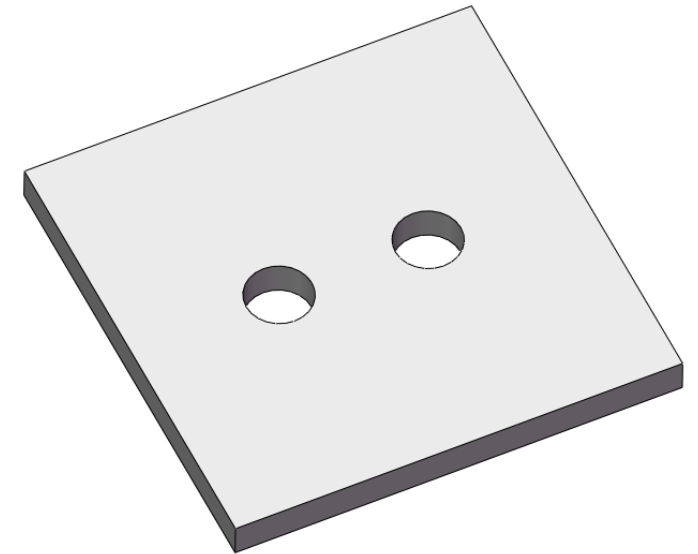
MINING PRODUCTS SECTION 4 PLATES

FLAT PLATE; TWICE HOLE

Technical Features:

- It is applied to double anchor cable supporting use.
- Available in Galvanized.

Specification				
Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)×2	Weight (kg)
150×150	Q235B	10	22	1.71
150×150	Q235B	12	22	2.05
200×200	Q235B	10	22	3.11
250×250	Q235B	10	20	4.88
300×300	Q235B	10	22	7.03





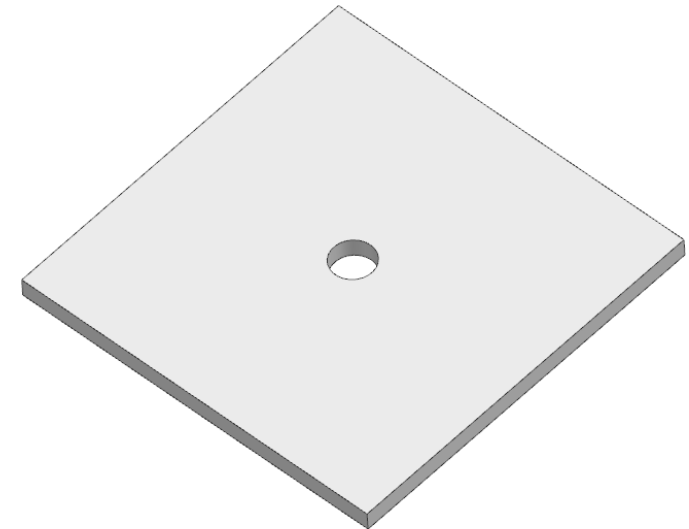
MINING PRODUCTS SECTION 4 PLATES

FLAT PLATE

Technical Features:

- It is applied to double anchor cable supporting use.
- Available in Galvanized.

Specification				
Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)×2	Weight (kg)
200x200	Q235B	10	25	3.10
250x250	Q235B	10	20	3.11





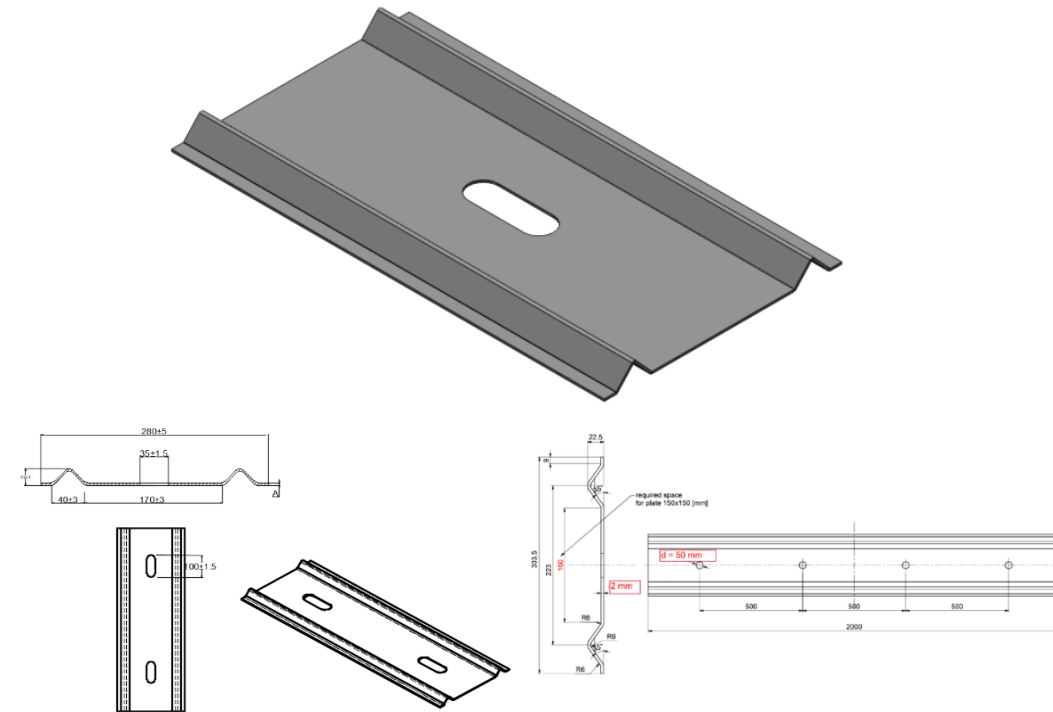
MINING PRODUCTS SECTION 5 STRAP

W-STRAP

Technical Features:

- The W-strap provides good surface support and is easy to conform to the roof. When used in combination with anchor rods and combi-plate, it forms an effective composite beam and is suitable for conditions where the surrounding rock is prone to fragmentation.

Specification			
Width (mm)	Length (mm)	Grade	Thickness (mm)
220 / 280	500~6000	Q235B/Q355B	2.0/2.5/2.75/3.0





MINING PRODUCTS SECTION 5 STRAP

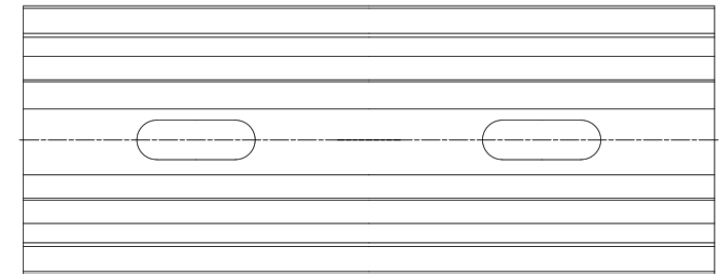
M-STRAP

Technical Features:

- The M-strap can be used with anchor ropes to match the high strength of anchor ropes and also has a very large roof protection area, which is suitable for large deformation and high stress roadways, especially in the area of broken roof plate with the best support effect. M-SHRAP is the best product instead of channel steel.

Specification

Width (mm)	Length (mm)	Grade	Thickness (mm)
330	500-6000	Q355B	5.5/5.6





MINING PRODUCTS SECTION 5 STRAP

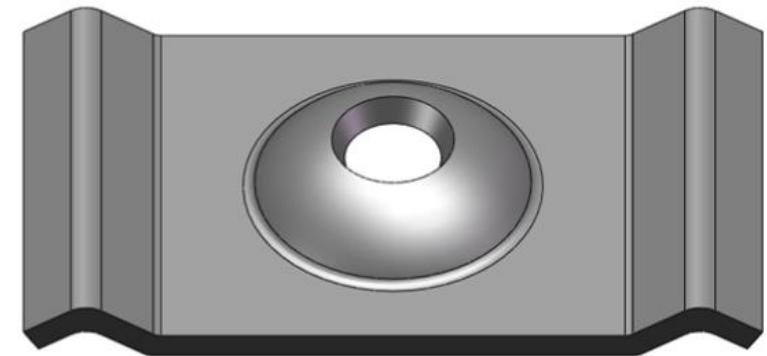
M-PLATE; 260 X 150 MM

Technical Features:

- The W-plate provides good surface support and is easy to conform to the roof. When used in combination with anchor rods, it forms an effective composite beam and is suitable for conditions where the surrounding rock is prone to fragmentation.
- This product is designed to be used with W-SHRAP.

Specification

Square Dimension (mm)	Grade	Thickness (mm)	Hole Diameter (mm)	Weight (kg)
260x150	Q355B	10.0	34	3.10





MINING PRODUCTS SECTION 6 MESH

WELDED MESH PITCH 100

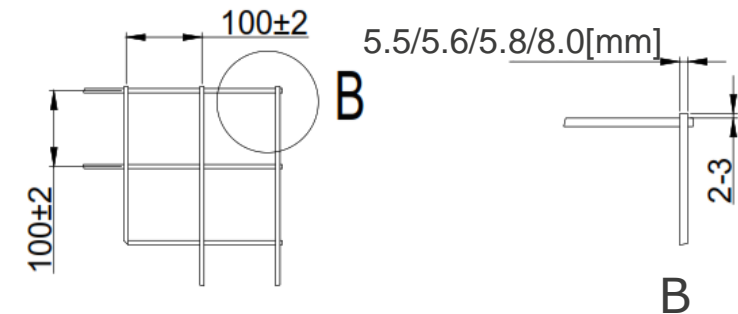
Technical Features:

Welded mesh panels are designed to provide a safe working environment by providing surface support on the roof of the mine. Welded wire mesh panels are manufactured from electrically welded individual wire cords to form a mesh panel. The welded wire mesh can be supplied in a variety of configurations, using different gauges and cable spacing.

- Designed for the specifications and dimensions of the mine gallery.
- Bring consistency to the rock reinforcement bolts.
- Designed for automated installation.
- Possibility to customize mesh panel dimensions.

Welded mesh panels pitch 100

	5.5[mm]	5.6[mm]	5.8[mm]	8.0[mm]
Longitudinal Wire	5.5[mm]	5.6[mm]	5.8[mm]	8.0[mm]
Transversal Wire	5.5[mm]	5.6[mm]	5.8[mm]	8.0[mm]
Pitch	100x100[mm]	100x100[mm]	100x100[mm]	100x100[mm]
UTS wire	Min 8 [kN]	Min 8 [kN]	Min 8 [kN]	Min 19.1 [kN]
UTS weld spots	Min 8 [kN]	Min 8 [kN]	Min 8 [kN]	Min 15.1 [kN]
Wire elongation	5% A10	5% A10	5% A10	5% A10



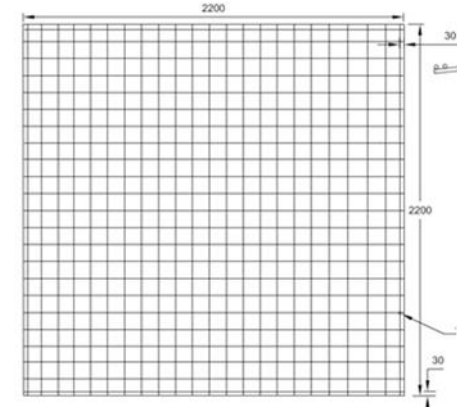
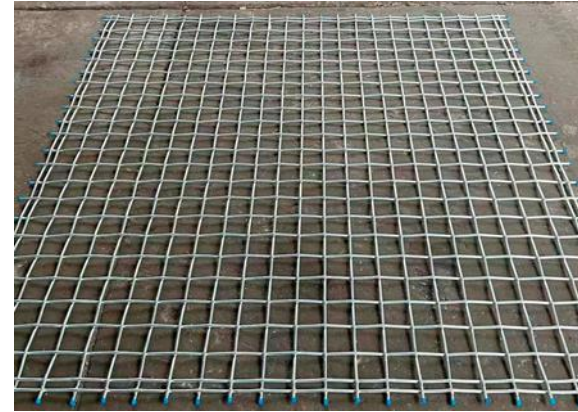


MINING PRODUCTS SECTION 6 MESH

WOVEN MESH

Technical Features:

- High strength woven mesh designed to minimize displacement and provide ground support system solutions
- Designed for long term support in extreme conditions such as draw points
- Cost efficient, extremely high capacity mesh module
- Easily installed from standard bolting machines
- Available in black or galvanized



Specifications

Characteristic Value / Type		Unit	Tolerance(+/-)
Mesh Shape	Square		
Wire diameter	10	[mm]	0.5
Aperture	100x100	[mm]	5
Yield wire strength	Re	[Mpa]	>800
Wire Breaking load	Rm	[Mpa]	>1000
Twin perimeter wires to be welded at all intersection	10	[kN]	
Length	2200	[mm]	50
Width	2200	[mm]	50
Mesh module static testing	180	[Km]	
Hot dip Galvanized.	SS-EN ISO 1461-2009		





MINING PRODUCTS SECTION 6 MESH

MESH ROLL

Technical Features:

- Underground shield support components are mainly used in conjunction with support products such as anchor rods, anchor cables, and steel straps.
- Their function is to prevent rock leakage, spalling, and roof rock falling of the surrounding rock in the roadway over a larger area, and to protect the integrity of the surrounding rock surface of the roadway.

Specifications

Characteristic Value / Type		Unit	Tolerance(+/-)
Wire diameter	5	[mm]	0.5
Aperture	60x60/100x100	[mm]	5
Chainlink yield wire strength	450	[Mpa]	>450
Chainlink yield wire breaking load	550	[Mpa]	>550
Length	1000-10000	[mm]	50
Width	500-2400	[mm]	50





MINING PRODUCTS SECTION 6 MESH

ST MESH

Technical Features:

- High strength ST mesh designed to minimize displacement and provide ground support system
- Designed for long term support in extreme conditions such as draw points
- Easy Installation from standard bolting machines
- Modular panels allowing multiple sheet installation together utilizing hooked design
- Available in black or galvanized

Specifications

Characteristic Value / Type		Unit	Tolerance(+/-)
Mesh Shape	Square		
Wire diameter	10	[mm]	0.5
Aperture	100x100	[mm]	5
Yield wire strength	600	[Mpa]	>600
Wire Breaking load	950	[Mpa]	>950
Wire diameter	5	[mm]	0.5
Chainlink yield wire strength	450	[Mpa]	>450
Chainlink yield wire breaking load	550	[Mpa]	>550
Twin perimeter wires to be welded at all intersection	10	[kN]	>10
Length	2200	[mm]	50
Width	2200	[mm]	50
Mesh module static testing	170	[Km]	0
Hot dip Galvanized			

SS-EN ISO 1461-2009





MINING PRODUCTS SECTION 6 MESH

HOCK MESH

Technical Features:

- Hock mesh is not easy to scratch the workers, which is easy to construct and improve the working efficiency.
- Its weight is lighter than metal mesh and steel-plastic composite mesh, which is easy to transport and construction.
- Hock mesh is strong and soft, light weight and high tensile strength.
- Hock mesh contains all the characteristics of metal mesh and can completely replace metal mesh in the process of use.
- Hock mesh is easy to operate and has high safety performance in the process of using, and has the characteristics of anti-seismic and tensile resistance.



Specifications	Breaking Tensile Strength (kN/m)		Breaking Elongation (%)		No. of ribs (No./m)-1		Width of rib (mm) ±5		Aperture size (mm)±5	Peeling Force of Junction \geq (N)	Mass per unit (g/m ²)±5%
	MD	CMD	MD	CMD	MD	CMD	MD	CMD			
400x400kN/m	400	400	18	18	11	13	35	30	52*42	1020	2490
200x200kN/m	200	200	16	17	18	17	18	15	37*42	850	1500



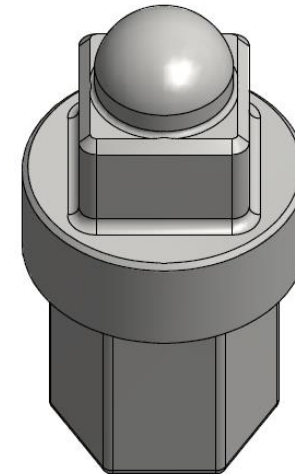
MINING PRODUCTS SECTION 7 TOOLS

HAWKEYE NUT DRIVER

Technical Features:

- Unique driver to fit 36AF hex socket
- Hand held installation option

Specification		
Drive (mm)	Length (mm)	Weight (kg)
30 square	36 Hex	0.8






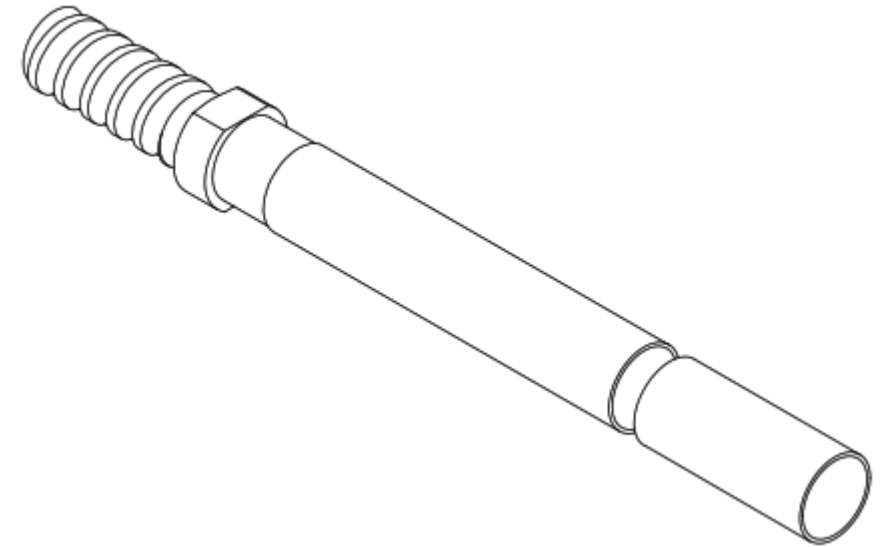


MINING PRODUCTS SECTION 7 TOOLS INSTALLER; RESIN; 3000MM X30MM; W/ CLEAR TUBE & R32ADAPTOR

Technical Features:

- Separate resin mastic and catalyst encased within a thin plastic film, sealed at each end by wire clips.
- Stiffer more robust capsule film improves durability and handling.
- Available in diameters of 30mm.
- Shelf life 3 months when stored as recommended.

Specifications			
Description	Capsule Diameter (mm)	Drill Bit (mm)	Picture
Parachute	30	35-38	
Tube	30	35-38	
Adaptor	30	35-38	





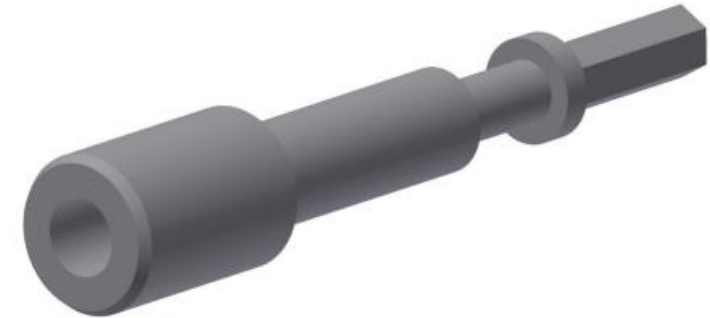
MINING PRODUCTS SECTION 7 TOOLS

DOLLY TO SUIT R-TECH BOLT

Technical Features:

- Dolly with Oval socket designed for installation of 20mm and 25mm R-Tech Bolts

Specification			
Drive (mm)	Length (mm)	Socket (mm)	Weight (kg)
20 hex	300	20 oval	3
25 hex	300	25 oval	3





MINING PRODUCTS SECTION 7 TOOLS

36 AF DOLLY TO SUIT R-TECH BOLT

Technical Features:

- 36AF dolly for installation of R-Tech bolts and nuts utilizing 36AF socket

Specification

Drive	Length (mm)	Socket (mm)	Weight (kg)
22	300	36 Hex	4





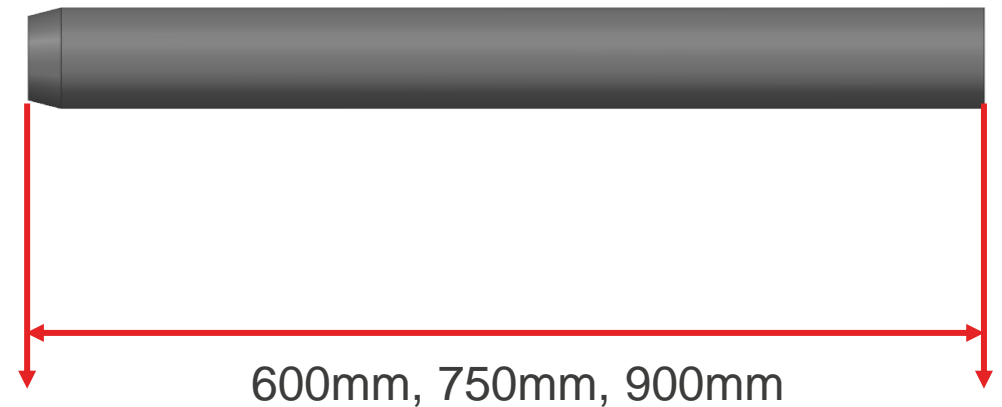
MINING PRODUCTS SECTION 7 TOOLS

T38 DOLLY

Technical Features:

- High quality, hardened, long lasting resin bolt 36AF driver.
- Available for either "T" or "R" thread systems.
- This product is available in three length sizes: 600mm, 750mm, 900mm.

Specification			
Drive	Length (mm)	Socket (mm)	Weight (kg)
T38	600	36 Hex	9
T38	750	36 Hex	11
T38	900	36 Hex	13





MINING PRODUCTS SECTION 7 TOOLS DRIVER; TOOL; T38 X 900MM; KINLOC BOLT; HEX36

Technical Features:

- Installation tool for kinloc bolt.
- Installation spanner T38 L.H. thread / 36 A.F. socket.
- The main function is for tightening the nut on the anchor.
- It can be ensured that adequate prestressing will be applied after the anchor is installed.



Specifications

Drive	Length (mm)	Describe	OD (mm)
T38X900	900	T38 L.H Thread/ 36A.F. Socket	60



MINING PRODUCTS SECTION 7 TOOLS DRIVER; TOOL; T38 X 650MM; RESIN BOLT; 41 A/F NUT

Technical Features:

- Installation tool for resin bolt.
- Installation spanner T38, L.H. thread, 41 A/F socket.
- The main function is for tightening the nut on the anchor.
- It can be ensured that adequate prestressing will be applied after the anchor is installed.

Specifications			
Drive	Length (mm)	Describe	OD (mm)
T38X650	650	T38 L.H. THREAD/ 41AF A/F SCOKET	60





MINING PRODUCTS SECTION 7 TOOLS

DCPA BOLT GROUTING ADAPTER

Technical Features:

- Dcpa bolt grouting adapter.
- This product has high sealing performance.
- Install the grouting tool to the end of the DCPA bolt, rotate to tighten, and finalize the grouting action.

Specifications

Grouting adapter	Length (mm)	Describe	THREAD
DCPA bolt	480	M24 DCPA BOLT ADAPTER	M33X3.0-LH





MINING PRODUCTS SECTION 7 TOOLS

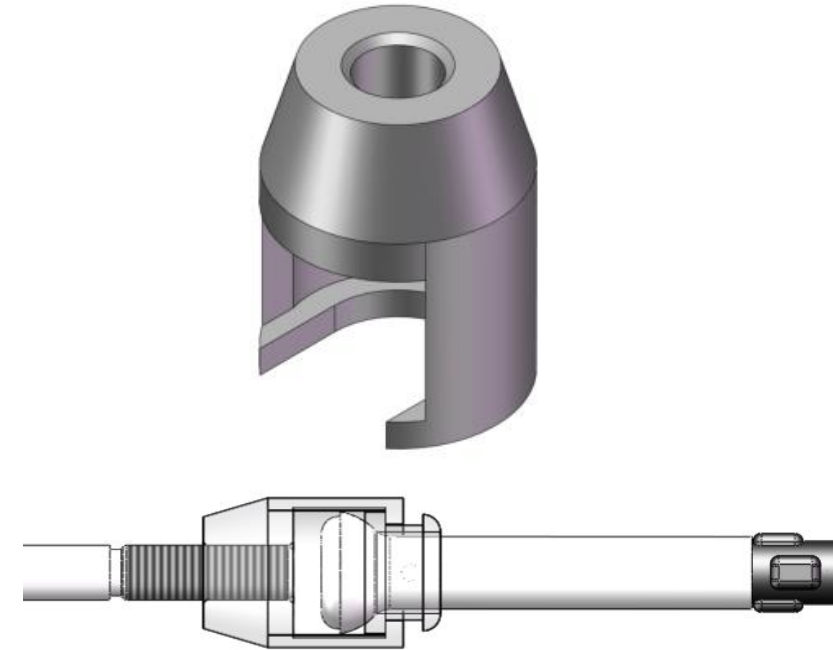
TYPE C BOLT TEST ADAPTER

Technical Features:

- Type C bolt test adapter.
- This product can carry a large tensile force.
- The top of this product has a thread size of M33X3-LH.
- This product is used in conjunction with a pulling collar with an inner diameter of 49mm.
- The connection is shown on the right figure.

Specifications

Test adapter	Describe	OD (mm)
Type C	Top M33X3-LH	90





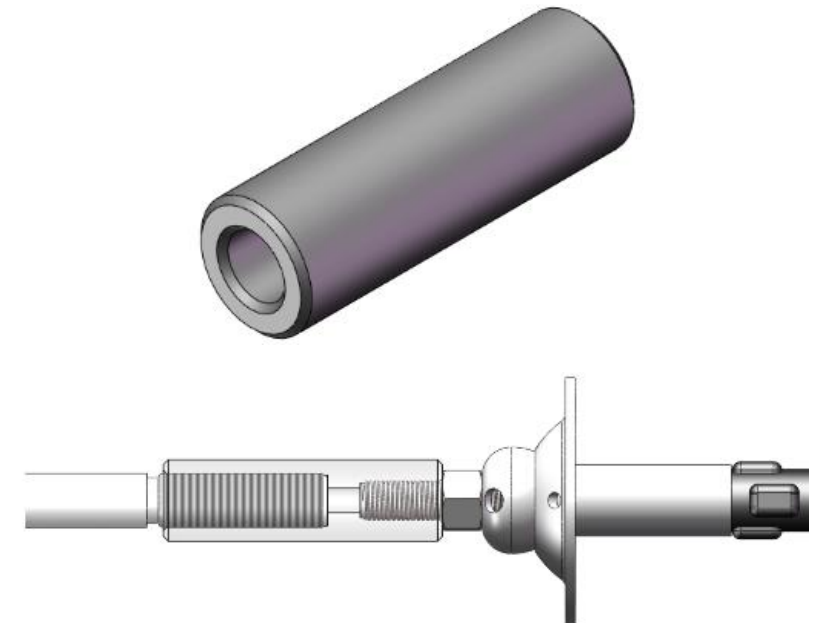
MINING PRODUCTS SECTION 7 TOOLS

CT BOLT M24 / TYPE B TEST ADAPTER

Technical Features:

- CT bolt M24/Type B bolt test adapter.
- This product can carry a large tensile force.
- The left side of this product has a thread size of M33X3-LH and the right side has a thread size of M24X3-RH.
- The connection is shown on the right figure.

Specifications			
Test adapter	Length (mm)	Describe	OD (mm)
CT BOLT M24 / Type b	180	Left is M33X3-LH / Right is M24X3-RH	60





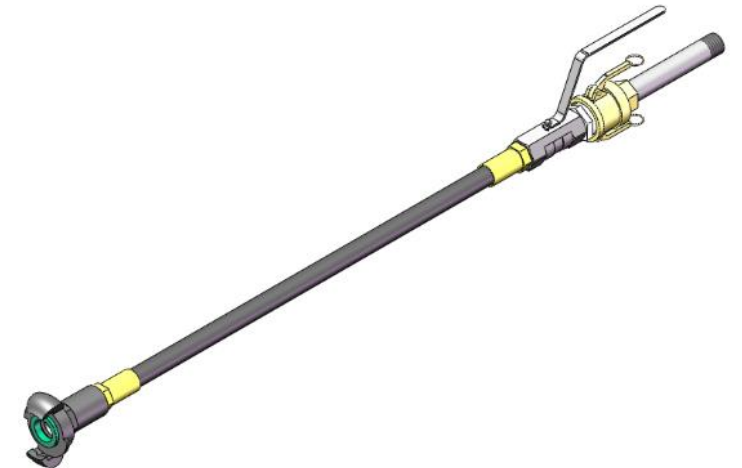
MINING PRODUCTS SECTION 7 TOOLS

TYPE C BOLT GROUTING ADAPTER

Technical Features:

- Type C bolt grouting adapter tool.
- This grouting tool is lightweight and easy to install.
- This product features snap-on ferrules for easy removal and installation.
- This product is used in conjunction with Type C bolt-M24.

Specifications		
Grouting adapter	Length (mm)	Describe
Type C	900	Type C bolt-M24 grouting adapter





MINING PRODUCTS SECTION 7 TOOLS

CT BOLT ADAPTER

Technical Features:

- CT BOLT grouting adapter tool.
- This grouting tool is lightweight and easy to install.
- This product is used in conjunction with CT-M20, CT-M22, CT-M24 and CT-M33.

Specifications		
Grouting adapter	Length (mm)	Describe
CT bolt	295	CT-M20, CT-M22, CT-M24 and CT-M33 grouting adapter





MINING PRODUCTS SECTION 7 TOOLS

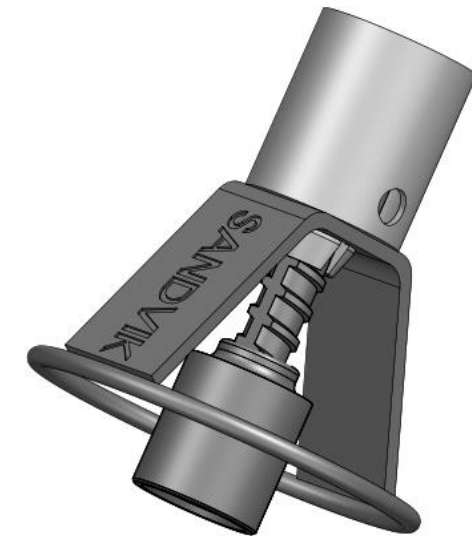
MESH CLAMP

Technical Features:

- The mesh clamp greatly improves the installation efficiency of the anchor net through mechanized operation. Compared with the traditional manual installation method, the use of the anchor net installer can significantly shorten the construction period and reduce labor costs. This grouting tool is lightweight and easy to install.
- The mesh clamp is able to maintain stable power output and precise control during operation, reducing the risk of safety accidents caused by improper operation. At the same time, it can also reduce the labor intensity of workers and reduce the health risks caused by long working hours.
- Mesh clamp advantages of high efficiency, accuracy, safety, adaptability and environmental protection, the anchor net installer has been widely used in the fields of underground engineering, tunnel construction and slope protection.

Specifications

Clamp	Height (mm)	diameter (mm)	Describe
Mesh	200	200	Works with MDX D47 or MD D4/Torque 350kN~420kN.





MINING PRODUCTS SECTION 7 TOOLS

MD/MDX BOLT & RESIN BOLT DRIVE

Technical Features:

- MD/MDX BOLT & RESIN BOLT drive.
- This drive is lightweight and easy to install.
- This product comes in a variety of sizes and to assemble.
- This product is used in conjunction with D39 MDX, D47 MDX and D47 MD.

Specification			
Drive	Length (mm)	Thread Detail (mm)	Weight (kg)
BDT38-400	400	T38	6.5
BDR38-400	400	R38	6.5
BDT38-600	600	T38	10
BDR38-600	600	R38	10
BDT38-900	900	T38	15
BDR38-900	900	R38	15
BDT38-980	980	T38	16.2
BDR38-980	980	R38	16.2





MINING PRODUCTS SECTION 8 GROUTING

CABLE BOLT GROUT

Technical Features:

- High strength 80 MPa cable bolt grout for “bottom-up” grouting
- Ready to use, mix with water and pump

Specifications

Pack	1 day Compressive Strength (MPa)	Workability (mm)	Weight (kg/bag)
6 litres/bag	≥25	0	20
7 litres/bag	/	160-210	20



TOP DOWN 80 MPa GROUT

HIGH STRENGTH THIXOTROPIC CABLE BOLT GROUT

WATER ADDITION PER BAG 6-7 LITRES PER BAG





MINING PRODUCTS SECTION 9 RESIN

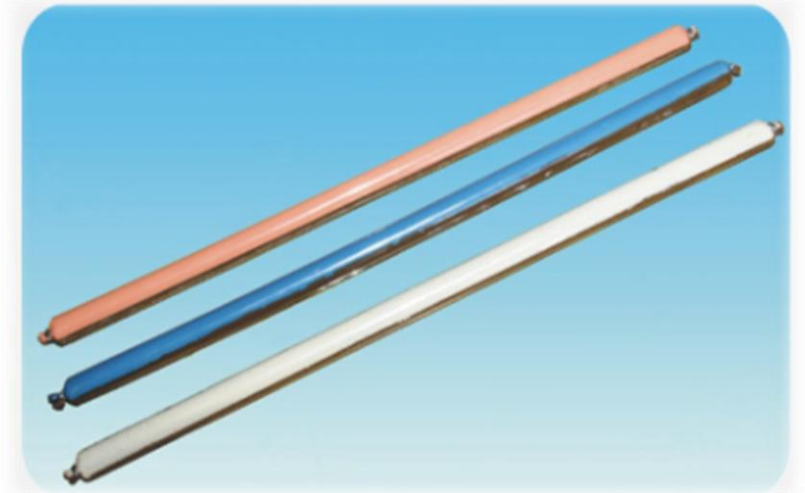
RESIN CAPSULES

Technical Features:

- Separate resin mastic and catalyst encased within a thin plastic film, sealed at each end by wire clips.
- Stiffer more robust capsule film improves durability and handling.
- Available in diameters of 26, 30mm, other sizes available on request.
- Shelf life 3 months when stored as recommended.

Specifications

Description	26×450mm Resin(fast)	26×450mm Resin(slow)	26×450mm Resin(media)	30×2400mm Resin(twin)	30×3000mm Resin(twin)
Punched Shear Strength(Mpa)	>22	>22	>22	>22	>22
Uniaxial compressive strength (min)	>60	>60	>60	>60	>60
Min Young modulus(Gpa)	>4	>4	>4	>4	>4
Push out test(kN after 24 hrs)	72	72	72	72	72
Gel time (fast Mastic)(seconds)	10	60	100	18 Spin > 10-60 hold	18 Spin > 10-60 hold
Capsule diameter(mm)	25.5	25.5	25.5	29.5	29.5
Capsule length(mm)	450	450	450	1200x 2 (twin capsule)	1500x 2 (twin capsule)
Flop Test(mm)	>380	>380	>380	>380	>380
Anchorage Force(Ton)	25	25	25	25	25



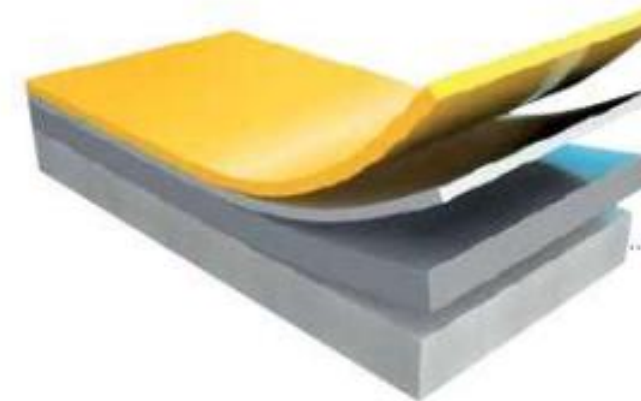


MINING PRODUCTS SECTION 10 CORROSION PROTECTION

CORROSION PROTECTION

Technical Features:

- Protection of the bolt components according to given levels of corrosive environments
- Bolts are available black, hot-dip galvanized, or with a special Combi Coat® (combination of hot-dip galvanizing, zinc phosphate, and powder coating)
- Indicated lifetimes for load-bearing components of bolt by accelerated corrosion tests from 50 years (black type) to 150 years (Combi Coat® type)
- Mainly apply to CT bolt and rebar bolt



Corrosion Protection - Double Coated	
Characteristic Value / Type	
Zinc Layer	Hot Dip Galvanized (HDG)
HDG compliance	SS-EN ISO 1461-2009
Thread and nut galvanization compliance	SS-EN ISO 10684
Power paint type	Epoxy
Paint thickness	≥ 70[μm]
Abrasion resistance according to ASTM D2794-93	≥ 0,69[kg]
Adhesion according to SS-EN ISOA2409	>class 0
Elasticity acc. to SS-EN ISO1519	≥ 12[mm]

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