GEO EQUIP AFRICA
G E A ROCK & SLOPE STABILIZATION PRODUCTS
We Service Africa!

SELF-DRILLING ANCHORS

Geo Equipment Africa (Pty) Ltd.

GEO EQUIPMENT AFRICA (PTY) LTD

A passion for Africa, bringing world class geotechnical products to this great continent! Focus placed on rock and slope (earth) stabilization products servicing two prominent sectors. The Mining (Underground & Open Pit) and Civil Engineering / Earthworks markets. South Africa, our operational headquarter together with our far-reaching logistical network for hassle-free delivery to your site!

Specification Sheets

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1. Company Profile

Geo Equipment Africa (Pty) Ltd. (GEA) sources its stock from trusted outlets with back-to-back product guarantees.

The self-drilling anchor side to our business makes use of a high-tech enterprises specializing in the R&D and manufacture of geotechnical anchoring engineering materials and related supporting equipment.

2. Products

2.1 Self-Drilling Anchor System

The self-drilling anchor (SDA) system consists of a hollow anchor bar, nut, plate, coupler, centralizer and drill bit. It can combine drilling, grouting and anchoring functions. Suitable for fractured rock which is difficult to drill without using a casing pipe. As such, this greatly improves the construction efficiency, shorten the construction period and reduces the overall construction cost.

The hollow anchor bar can be cut anywhere along its length and lengthened by the coupler. It is suitable for construction in narrow spaces where large equipment cannot enter. Self-drilling anchor systems can be used for slope stabilization, foundation support, tunnel pipe, roofing, transmission tower, wind tower foundation support, existing building repair, etc

3. Catalogue

3.1 Hollow Anchor Bar

Image	Size	Ultimate Load （kN）	Yield Load （kN）	Elongation （%）
	HER25N	200	150	8
	HER32L	210	160	8
	HER32N	280	230	8
	HER32S	360	280	8
	HER32S1	405	320	8
	HER38N	500	400	8
	HER38S	550	450	8
	HER51L	550	450	8
	HER51L1	660	540	8
	HER51N	800	630	8
	HST30S	320	260	12
	HST40N	539	430	12
	HST40S	660	525	12
	HET52N	929	730	8
	HCT76L	1200	1000	/
	HET76N	1600	1200	/
	HET76S	1900	1500	/

Note: Left-handed and right-handed thread can be customized based on specific requirements.

3.2 Hex Nut

Image	Size	Across Flat (mm)	Length (mm)
	HER25-L35	41	35
	HER32-L45	46	45
	HSR32-L45	46	45
	HSR32-L55	46	55
	HER38-L60	50	60
	HSR38-L60	50	60
	HSR38-L70	50	70
	HER51-L70	75	70
	HSR51-L70	75	70
	HET30-L35	46	35
	HST30-L35	46	35
	HET40-L50	65	50
	HST40-L50	65	50
	HET52-L70	80	70
	HST52-L70	80	70
	HET76-L80	100	80
	HST76-L75	100	75
	HST76-L80	100	80

3.3 Domed Nut

Image	Size	Across Flat (mm)	Length (mm)
	HER25-L40.5	41	40.5
	HER32-L45	46	45
	HSR32-L45	46	45
	HSR32-L55	46	55
	HER38-L60	52	60
	HSR38-L60	52	60
	HER51-L70	75	70
	HSR51-L70	75	70
	HSR51-L80	75	80

3.4 Flat Plate

Image	Size	Length（mm）	Thickness（mm）
	HER32-L150-T8	150	8
	HER32-L150-T8	150	8
	HER38-L200-T12	200	12
	HET40-L200-T12	200	12
	HER51-L200-T30	200	30
	HET52-L200-T30	200	30
	HET76-L250-T40	250	40

3.5 Domed Plate

Image	Size	Length（mm）	Thickness（mm）
	HER25-L150-T6	150	6
	HER32-L150-T8	150	8
	HER38-L200-T10	200	10
	HER51-L200-T10	200	10

3.6 Couplings

Image	Size	Outer Dia.（mm）	Length（mm）
	HER32-L145	42	145
	HER32-L160	42	160
	HER38-L180	51	180
	HER51-L140	63	140
	HER51-L200	63	200
	HET30-L105	38	105
	HET40-L140	54	140
	HET52-L160	70	160
	HST76-L200	95	200

3.7 Centralizer

Image	Size	Outer Dia.（mm）	Length（mm）
	HER32/72	72	30
	HER38/78	78	30
	HER51/91	91	30
	HET30/70	70	35
	HET30/88	88	35
	HET40/88	88	40
	HET52/112	112	35
	HET76/130	130	45

3.8 Hardened Cross-Cut Drill Bit [EX]

Image	Size	Outer Dia.（mm）	Geological Condition
	HSR25/42	42	Mudstone, gravel soil, chalk, lime soil, calcareous clay, artificial fill, soft mudstone
	HSR32/51	51	
	HSR32/76	76	
	HSR38/76	76	
	HSR38/90	90	
	HSR51/115	115	
	HSR51/90	90	
	HST30/51	51	
	HST30/76	76	
	HST40/90	90	
	HST52/115	115	
	HST76/115	115	
	HST76/130	130	

3.9 TC Cross-Cut Drill Bit [EXX]

Image	Size	Outer Dia.（mm）	Geological Condition
	HSR25/42	42	Soft to medium-hard rock, such as gravel mixed with large pebbles, rock formations with developed cracks, unreinforced concrete.
	HSR32/51	51	
	HSR38/76	76	
	HSR38/90	90	
	HSR51/90	90	
	HSR51/115	115	
	HST30/51	51	
	HST40/76	76	
	HST52/90	90	
	HST52/115	115	
	HST76/115	115	
	HST76/130	130	

3.10Clay Bit

Image	Size	Outer Dia.（mm）	Geological Condition
	HSR32/76	76	Clay, soft soil, sand, gravel, mixed fill
	HSR38/90	90	
	HSR51/90	90	
	HST30/76	76	
	HST40/90	90	
	HST52/130	130	
	HST76/130	130	
	HST76/150	150	

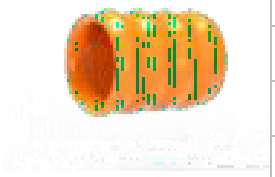
3.11Hardened Button Drill Bit [ESF]

Image	Size	Outer Dia.（mm）	Geological Condition
	HSR25/42	42	Broken stratum, soft sandstone, limestone, gravel, soft rock
	HSR32/51	51	
	HSR32/76	76	
	HSR38/76	76	
	HSR38/90	90	
	HSR51/76	76	
	HSR51/115	115	
	HST30/51	51	
	HST40/76	76	
	HST40/90	90	
	HST52/115	115	
	HST76/130	130	

3.12TC Button Drill Bit [ESSF]

Image	Size	Outer Dia.（mm）	Geological Condition
	HSR25/42	42	Soft to medium-hard weathered rock formations, large pebbles, gravel, such as mudstone, schist, volcanic rock, etc.
	HSR32/51	51	
	HSR32/76	76	
	HSR38/76	76	
	HSR38/90	90	
	HSR51/76	76	
	HSR51/115	115	
	HST30/51	51	
	HST40/76	76	
	HST40/90	90	
	HST52/115	115	
	HST76/115	115	
	HST76/130	130	
	HST76/150	150	

3.13Drill Bit Adaptor

Image	Size	Anchor Bar Thread（mm）	Drill Bit Thread	Note
	SSR25/R32	R25	R32	It can connect hollow anchor bar with larger thread diameter drill bit.
	SSR32/R38	R32	R38	
	SSR32/R51	R32	R51	
	SSR32/T40	R32	T40	
	SSR38/R51	R38	R51	
	SSR38/T52	R38	T52	
	SSR51/T76	R51	T76	
	SST30/T40	T30	T40	
	SST30/R51	T30	R51	
	SST40/R51	T40	R51	
	SST40/T52	T40	T52	
	SST52/T76	T52	T76	

3.14Wedge

Image	Size	Outer Dia.（mm）	Compensation Angle	Note
	HSR25-A10°	50	10°	Used to compensate the angle between plate and hollow anchor bar.
	HSR32-A10°	60	10°	
	HSR38-A10°	70	10°	
	HSR51-A10°	95	10°	
	HST30-A10°	60	10°	
	HST40-A10°	70	10°	
	HST52-A10°	95	10°	
	HST76-A10°	133	10°	

3.15Rotary Injection Adaptor

Image	Size	Anchor Bar Thread	Shank Adapter Thread	Note
	HSR32/R32	R32	R32	Used to connect shank adapter and hollow anchor bar and achieve synchronous drilling and grouting.
	HSR32/T38	R32	T38	
	HSR38/T38	R38	T38	
	HSR38/T45	R38	T45	
	HSR38/T51	R38	T51	
	HST40/T51	T40	T51	
	HST52/T51	T52	T51	

3.16Adaptor Couplings

Image	Size	Anchor Bar Thread	Shank Adapter Thread	Note
	HSR32/R32	R32	R32	Mainly used for hydraulic rock drilling rigs.
	HSR32/T38	R32	T38	
	HSR38/T38	R38	T38	
	HSR38/T45	R38	T45	
	HSR38/T51	R38	T51	
	HST40/T51	T40	T51	
	HST52/T51	T52	T51	
	HCR32	R32		Mainly matched for DTH hammer.
	HSR25/S22	R25	S22	Mainly matched for air leg rock drill.
	HSR32/S22	R32	S22	
	HSR32/S25	R32	S25	
	HSR38/S25	R38	S25	

4. Self-Drilling Pipe Roof System

(R51, T76, T103)

Pipe roofing is mainly used in tunnel projects with soft and broken surrounding rock, such as highway and railway tunnels, subways, hydropower station tunnels and other underground projects. Traditional pipe roofs generally are seamless steel pipes. Common specifications are Φ76×6, Φ89×5, Φ108×6, Φ127×6, etc.

The construction methodology of traditional pipe roof systems is drilling the hole, extracting the drill rod, inserting the pipe roof, and finally grouting. Hole collapse may occur during construction in weak surrounding rock which makes it difficult to insert pipe roof, so casing is required.

Self-drilling pipe roof system consist of hollow anchor bars, couplings and drill bits which can be drilled and grouted in a single operation. Self-drilling pipe roof system can replace the traditional pipe roofs in a variety of easily collapsed formations and common specifications include the R51, T76, T103, etc.

Self-drilling pipe roof system can solve many construction problems of hole collapse, sticking, and inability to insert ordinary pipe roof after drilling under certain rock conditions:

- High construction efficiency, convenient grouting and good grouting effect.
- Supporting with self-drilling pipe roof system features high support rigidity and small radial plastic deformation of the surrounding rock. After support, a bearing arch is formed, which effectively ensures the safety of tunnel boring and initial support.
- Self-drilling pipe roof system plays the role of advanced support, which can effectively reduce surface settlement and prevent collapse of surrounding rock.

5. Anti-corrosion Anchor System

During application, the largest influence on the service life of anchors and bolts is corrosion from the surrounding environment. It is especially important to have an anti-corrosion anchor bolt. GEA's suppliers specialize in providing a variety of anti-corrosion anchor bolt systems, these include:

5.1 Hot Dip Galvanizing Anchor Bolt

Hot dip galvanizing anchor bolt is suitable for geotechnical engineering applications where longer service life is needed and the surrounding environment is complex, such as roads, railways, hydro-projects and other building projects that may be affected by sea water.

5.2 Epoxy Coating Anchor Bolt

Epoxy coating anchor bolt is mainly used in industrial and civil construction, general structures and roads, bridges, ports and docks in humid or corrosive environments.

5.3 Duplex Coating Anchor Bolt

Duplex coating anchor bolt is a combination of hot-dipped galvanizing and epoxy coated. It is commonly used in the permanent support of hydro-projects, underwater tunnels, subway tunnels and some important buildings affected by groundwater for a long time. It is also widely used in harbors, wharfs, offshore buildings that are corroded by seawater.