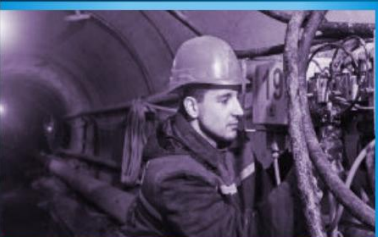




SRONS
ENGINEERS

India's First Manufacturing & Exports Co. SDA BARS

Geo Technical Bar System



www.sronsrockbolts.com

SELF DRILLING ANCHOR BOLT

The self-drilling Hollow bar anchor system is comprised of a hollow threaded bar with an attached drill bit that can perform drilling, anchoring and grouting in a single operation. The hollow bar allows air and water to freely pass through the bar during drilling to remove debris and then allow grout to be injected immediately after drilling is completed. Grout fills the hollow bar and completely covers the entire bolt. Couplers can be used to join hollow bars and extend the bolt length while nuts and plates are used to provide the required tension.

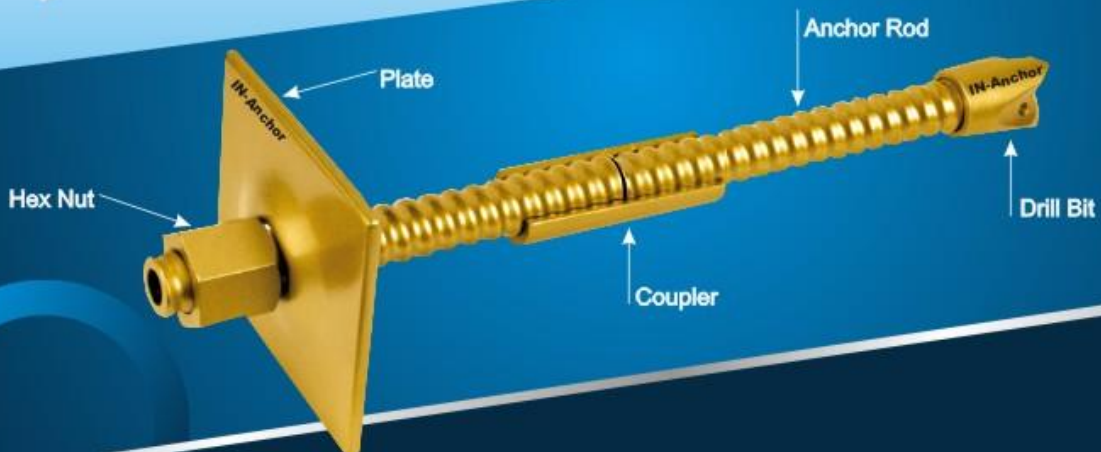
Srons Engineers offers Self Drilling Anchors in variants of R25, R32, R38, R51 and T76 and their accessories including the Anchor Nut, Anchor Plate, Anchor Coupler and Drilling bits depending on the geological condition of the project site (Type EX, EXX, ES, ESS, EY, EYY).

ANCHOR RODS

	Unit	R 25N	R 32L	R 32N	R 32S	R38 N	R51 L	R51 N	T 76N	T 76S
Outer Diameter	mm	25.00	32.00	32.00	32.00	38.00	51.00	51.00	76.00	76.00
Inner Diameter	mm	14.00	22	20	18.5	22.00	36.00	33.00	51.00	47.00
Ultimate Load	kN	200	260	280	360	500	550	800	1600	1900
Yield Load	kN	150	200	230	280	400	450	630	1200	1500

ANCHOR NUTS

	Unit	R 25N	R 32L	R 32N	R 32S	R38 N	R51 L	R51 N	T 76N	T 76S
Key Size	mm	41	46	46	46	50	75	75	100	100
Length	mm	35	45	45	65	60	70	70	80	80



ANCHOR PLATE

	Unit	R 25N	R 32L	R 32N	R 32S	R38 N	R51 L	R51 N	T 76N	T 76S
Dimension	mm	150x150	200x200	200x200	200x200	200x200	200x200	250x250	250x250	250x250
Thickness	mm	8	10	10	12	12	30	40	40	40
Hole Diameter	mm	30	35	35	35	41	60	60	80	80

ANCHOR COUPLER

	Unit	R 25N	R 32L	R 32N	R 32S	R38 N	R51 L	R51 N	T 76N	T 76S
Outer Dimension	mm	36	42	42	42	52	63	63	95	95
Length	mm	150	145	160	190	220	140	200	200	220

SELF DRILLING HOLLOW ROCK BOLTS

Product Features

- * 3 in 1 concept : drilling rod, anchor bar & grouting pipe.
- * Suitable for both permanent and temporary applications.
- * Optimum bonding and load transfer.
- * Complete solution including plate and bolts.
- * Splicing system to adjust to custom lengths.
- * Standard sacrificial drill bits for every ground conditions.

Benefits

- * Flexible installation : core injection to suit all ground conditions.
- * Safely : Visual control of full encapsulation.
- * One step installation with sacrificial drill bits. drilling, placing , grouting.
- * No cased borehole allowing ground preservation.

Corrosion Protection :

- * For temporary applications the corrosion protection is achieved through encapsulation with grout.
- * For permanent applications, In-Anchor Hollow Rock Bolts can be hot dip galvanized according to EN-1461, epoxy coated or supplied with a sacrificial thickness if accounted for at design stage.



Threaded Rods / Tie Rods

FULLY THREADED BAR

Nominal Diameter mm	Cross-section area (mm ²)	Linear Weight (kg/m)	Grade 525/575		Grade 835/1035		Grade 935/1085	
			Yield load (kN)	Ultimate load (kN)	Yield load (kN)	Ultimate load (kN)	Yield load (kN)	Ultimate load (kN)
25	491	4.10	270	375	405	500	450	520
32	804	6.65	440	620	660	820	740	860
36	1,018	8.41	560	780	840	1,040	940	1,090
40	1,257	10.34	690	960	1,040	1,290	1,160	1,350
50	1,964	16.28	1,080	1,500	1,600	2,010	1,820	2,110

Product Features

*High tensile fully threaded bars available in three grades for passive and active (pre-tensioned) anchors. Higher grades & Higher size are also available on request.

*Diameter range 25 mm to 50 mm

*Continuous cold rolled & hot rolled available thread.

*Minimum Elongation

Gr 525/575 6%

Gr 835/1035 6%

Gr 935/1085 6%

*Available with either left hand or right hand threads.

Typical applications

*Excavation tie anchoring (1)

*Tunneling (2)

*Slope stabilization (3)

*Tension piles

*Structural repairing

*Mining

Benefits

*High grade steel effectively reduces the diameter of the bar allowing for easier handling and a smaller bore hole.

*Continuous thread makes connections, possible at any point and increases bonding.

*Coarse thread and surface hardening allow for rough handling.

*Pre-stressing possible for active anchors
(available for grade 835/1035 and grade 935/1035)

THREAD ROD DIN 975

Dia	Thread Pitch (mm)	Per Mtr.Wt. (Kg.)	Dia	Thread Pitch (mm)	Per Mtr.Wt. (Kg.)
M2	0.04	0.019	M20	1.5/2.5	2.080
M2.5	0.05	0.030	M22	1.5/2.5	2.540
M3	0.50	0.044	M24	2.0/3.0	3.000
M3.5	0.60	0.060	M25	2.0/3.0	3.260
M4	0.70	0.078	M27	2.0/3.0	3.850
M5	0.80	0.124	M30	2/3.5	4.750
M6	1.00	0.177	M32	2/3.5	5.500
M8	1/1.25	0.319	M36	3/4.0	6.900
M10	1/1.25/1.5	0.500	M39	3/4.0	8.200
M12	1.25/1.5/1.75	0.725	M42	3/4.5	9.400
M14	1.5/2	0.970	M45	3/4.5	11.000
M16	1.5/2	1.330	M48	3/5.0	12.400
M18	1.5/2.5	1.650	M52	3/5.0	12.700



Typical Applications

- * Harbours
- * Wharves
- * Jetties
- * River Embankments

Product Features

- * Available in steel grades 355, 500, 700 N/mm²
 - * Rolled thread for better performance
 - * Minimum Elongation
- Gr 355 18-22%
Gr 500 17%
Gr 700 15%

Product Benefits

- * Ductile Design
- * Quick Installation
- * Pre-tensioning application
- * Full range of accessories for specific applications

TIE RODS

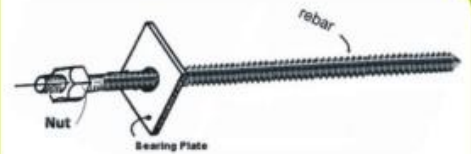
Thread size	Normal bar diameter	Linear weight	Grade 355/510			Grade 500/660			Grade 700/900		
			Yield load*	Ultimate load*	Tension capacity as per EC3	Yield load*	Ultimate load*	Tension capacity as per EC3	Yield load*	Ultimate load*	Tension capacity as per EC3
mm	mm	kg/m	kN	kN	kN	kN	kN	kN	kN	kN	kN
M42	40	9.86	398	572	411.6	560	740	532.7	785	1,009	726.4
M45	43	11.40	464	666	479.6	653	862	620.6	914	1,175	846.3
M48	45	12.48	523	751	540.9	737	972	700.0	1,031	1,326	954.6
M52	49	14.80	624	897	645.5	879	1,160	835.3	1,230	1,582	1,139.1
M56	53	17.32	721	1,035	745.4	1,015	1,340	964.7	1,421	1,827	1,315.5
M60	57	20.03	839	1,205	867.3	1,181	1,559	1,122.4	1,653	2,126	1,530.6
M64	61	22.94	950	1,365	982.6	1,338	1,766	1,271.6	1,873	2,408	1,734.0
M68	65	26.04	1,085	1,558	1,121.9	1,528	2,017	1,541.9	2,139	2,750	1,979.8
M72	69	29.35	1,228	1,764	1,270.4	1,730	2,283	1,644.1	2,422	3,114	2,241.9
M78	75	34.67	1,460	2,098	1,510.5	2,057	2,715	1,954.8	2,880	3,702	2,665.6
M83	80	39.45	1,669	2,398	1,726.4	2,351	3,103	2,234.2	3,291	4,231	3,046.6
M88	85	44.54	1,892	2,718	1,956.8	2,664	3,517	2,532.3	3,730	4,796	3,453.1
M93	90	49.93	2,128	3,058	2,201.5	2,998	3,957	2,849.1	4,197	5,396	3,885.1
M98	95	55.63	2,379	3,418	2,460.7	3,351	4,423	3,184.5	4,691	6,031	4,342.5
M103	100	61.64	2,643	3,798	2,734.3	3,723	4,915	3,538.6	5,213	6,702	4,825.3
M108	105	67.96	2,922	4,198	3,022.4	4,115	5,432	3,911.3	5,762	7,408	5,333.6
M113	110	74.59	3,214	4,618	3,324.8	4,527	5,976	4,302.7	6,338	8,149	5,867.3
M118	115	81.52	3,521	5,058	3,641.7	4,959	6,546	4,712.8	6,942	8,926	6,426.5
M123	120	88.76	3,841	5,518	3,973.0	5,410	7,141	5,141.5	7,574	9,738	7,011.1
M128	125	96.32	4,175	5,998	4,318.7	5,881	7,762	5,588.9	8,233	10,585	7,621.2
M133	130	104.18	4,523	6,498	4,678.8	6,371	8,410	6,054.9	8,919	11,468	8,256.7
M143	140	120.82	5,261	7,559	5,442.3	7,411	9,782	7,043.0	10,375	13,339	9,604.1
M153	150	138.69	6,055	8,699	6,263.5	8,529	11,258	8,105.7	11,940	15,352	11,053.2
M162	160	157.80	6,818	9,794	7,051.9	9,602	12,675	9,126.0	13,443	17,284	12,444.5



SN ROCK BOLT SYSTEM

Grouted rockbolts have been commonly used world-wide in mining and civil engineering applications. The most commonly used grouted rockbolt is the fully grouted rebar or threaded bar made of steel. Cement or resin are used as grouting agent. The rebar used with resin creates a system commonly used for tensioned rockbolt but the rebar or the threaded bar with cement grout can also be used for untensioned bolts.

Steel Quality Designation :	B500 - Grade C - EN 10080		
Steel Diameter :	25 mm	32 mm	40 mm
Yield Load, Steel :	> 500MPa	> 500MPa	> 500MPa
Ultimate Load, Steel :	>550 Mpa	>550 Mpa	>550 Mpa
Weight of Bolt (Without plate and nut) :	3.85 kg/mt	6.31 kg/mt	10.00 kg/mt
Bolts Length :	Any Length Required		
Thread at one end x 100mm	M24	M33	M42



NUT	Hexagon Nut Class 8 ISO Metric Thread		
Steel Quality Designation :	UNI 3740 - ISO 898-2		
Dimension :	36 x 19mm	50 x 26mm	65 x 34mm
Coarse Thread :	3.0	3.5	4.5
Weight :	0.11 Kg	0.29 Kg	0.65 Kg



Steel Quality Designation :	S355JR - EN 10025-2		
	Rockbolts Dia 25mm	Rockbolts Dia 32mm	Rockbolts Dia 40mm
Dimension :	200x200x15mm	200x200x15mm	200x200x15mm
Shape - Hole	Flat-Central Hole Dia 28mm	Flat-Central Hole Dia 35mm	Flat-Central Hole Dia 43mm
Weight :	4.8 kg	4.8 kg	4.8 kg
Optional :	20mm Hole for injection tube		



HEXAGEN NUT DIN 934



Thread Size	M2	M3	M4	M5	M6	M8	M10	M12	M16
Pitch	0.4	0.5	0.7	0.8	1	1.25	1.5	1.75	2
m	1.6	2.4	3.2	4	5	6.5	8	10	13
e	4.32	6.01	7.68	8.79	11.05	14.38	18.9	21.1	16.75
s	4	5.5	7	8	10	13	17	19	24

Thread Size	M20	M24	M30	M36	M42	M48	M48		
Pitch	2.5	3	3.5	4	4.5	5	5.5		
m	16	19	24	29	34	38	45		
e	32.95	39.55	50.85	60.79	71.3	82.6	93.56		
s	30	36	46	55	65	75	85		

HEXAGEN HEAD BOLT DIN 933



Thread Size	M4	M5	M6	M8	M10	M12	M14
Pitch	0.7	0.8	1	1.25	1.5	1.75	2
k	2.8	3.5	4	5.3	6.4	7.5	8.8
e	Grade A	7.66	8.79	11.05	14.38	18.9	24.49
	Grade B	-	8.63	10.89	14.2	18.72	23.91
S	7	8	10	13	17	19	22
L	8-40	8-40	8-50	12-60	16-60	20-80	25-80

Thread Size	M16	M18	M20	M22	M24	M27	M30
Pitch	2	2.5	2.5	2.5	3	3	3.5
k	10	11.5	12.5	14	15	17	18.7
e	Grade A	26.75	30.14	33.53	35.72	35.98	50.85
	Grade B	26.17	29.56	32.95	35.03	39.55	50.85
S	24	27	30	32	36	41	46
L	30-100	30-100	40-100	50-100	50-100	60-100	70-100

SPRING WASHER DIN 7980



d	M 3	M 4	M 5	M 6	M 8	M 10	M 12	M 14
d1 min.	3.6	4.1	5.1	6.1	8.1	10.2	12.2	14.2
d2 max.	5.6	7.0	8.8	9.9	12.7	16.0	18.0	21.1
s	1.0	1.2	1.6	1.6	2.0	2.5	2.5	3.0
	0.1	0.2	0.3	0.4	0.8	2.0	3.0	5.5

d	M 16	M 18	M 20	M 22	M 24	M 27	M 30	M 36
d1 min.	16.2	18.2	20.2	22.5	24.5	27.5	30.5	36.5
d2 max.	24.4	26.4	30.6	32.9	35.9	38.9	44.1	52.2
s	3.5	3.5	4.5	4.5	5.0	5.0	6.0	7.0
	6.0	7.8	8.4	11.9	14.5	21.1	29.5	50.2



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