

TENDER SPECIFICATION

FOR SUPPLY OF SELF DRILLING ANCHORS (SDA)

(ROCKFALL PROTECTION AND GEOHAZARD MITIGATION)

1.0 GENERAL

This specification covers the use of self-drilling anchors for slope protection including the scope of furnishing and installation as per the special provisions mentioned in the specifications, instructions from the manufacturer/supplier of the rockfall mitigation system and as directed by the Engineer-In-Charge

2.0 MATERIALS

2.1 General Requirements

- The Self-drilling anchors shall meet the minimum requirements of anchors mainly diameter, coating, yield load, yield strength, chemical composition and elongation as specified in this document.
- Manufacturer shall be ISO 9001 Certified Indian organization for manufacturing of Anchors & rock bolts
- System Technology:

The Anchor Bars shall be designed in order to stabilize the fractured or jointed slope mass to induce homogeneity in the behavior. The Anchor Bar shall have the required grip length in rock.

The grout shall be made of OPC grade 53 with suitable admixtures. The SDA, nuts, bearing plates and couplers shall be epoxy coated.

Drilling shall be carried out by suitable equipment. Diameter of SDA shall be 38 mm with sacrificial drill bit of 76mm dia. with hexagonal nut & Plate. The SDA shall be made of yield load of 400kN & ultimate load of 500kN. The SDA rod shall be continuously threaded. For convenience of installation, appropriate arrangement (coupler) shall be made to connect two smaller lengths of SDA to achieve the required length.

Made in India indigenously manufactured SDA should be preferred, considering advantages of shorter delivery periods, no inventory pile-up and rates being not affected by fluctuation of exchange rate of foreign currency.

A plant visits by the Engineer's representative to verify the manufacturer's quality control procedures and witness testing of products is also required prior to the dispatch of material.

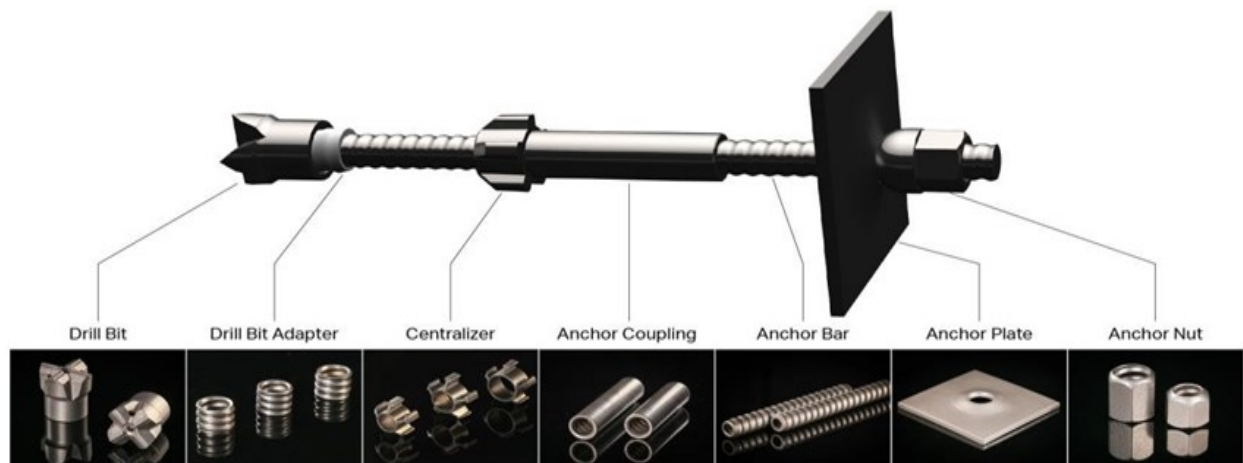


Fig1: Self drilling anchors with accessories

2.2 Physical and Mechanical Properties

Product Name	Type	Test Method	Chemical Composition (in %)							
			C	Si	Mn	P	S	Cr	Ni	Cu
Self Drilling Anchor	R38N	ASTME-415:2017	0.41	0.22	0.62	0.02	0.004	0.9	-	-
			Mechanical Properties							
Outer Diameter(mm)			38							
Min Yield Load (kN)			400							
Min Ultimate Load (kN)			500							
Min Elongation (%)			6							
Thread Type			ISO10208							
Type of Steel			EN10083-1							
Thread (Left/Right hand)			Left or right							
Length(m)			(1)x2,x3,x4,x5,x6							
Options of Anti-Corrosion			Epoxy Coating, Hot Dip Galvanization							

3.0 INSTALLATION

- The SDA is driven in the required position with help of sacrificial drill bit at the bottom of the anchor bar which facilitates in drilling the hole. The diameter, length and spacing of SDA shall be as specified. Anymore / lesser length or spacing of anchoring/nailing shall be carried out as per site condition and as directed by engineer-in-charge.
- The grout is pumped through the hollow bar during the drilling process. Grouting shall be done by using OPC grade 53 along with addition of suitable admixture. Mixing shall be done along with potable water so as to form the cementitious paste.
- The base plates of size 200mmx200mmx10mm shall be placed at rock interface for tightening the nuts.
- The fascia (if applicable) shall be installed in front and connected to the steel rods with base plate and nuts.
- Following equipment deployed on site
- Grout agitator
- Compressor – 450 to 600 CFM
- Drilling equipment per cussion/rotary type

Expansive plasticizing agent for cement grouts shall be used, typical brand name DR.FIXIT PIDICRETE AM or FOSROC Cebex 100

4 APPROVED MANUFACTURERS

4.1 Approved Manufacturers

- (1) TechFab (India) Industries Ltd.
712 Embassy Centre,
Nariman Point, Mumbai – 400021
Phone: 022 – 2287 6224/6225
Fax: 022 – 2287 6218

5.0 DELIVERY

Delivery of SDA shall be done according to the delivery schedule.

6.0 PAYMENT

6.1 Method of Measurement

The SDA will be measured in Running Meters of material received at the owner's/contractor's store.

6.2 Basis of Payment

Payment for the SDA shall be made at the contract unit price per Running Meter, which shall be full compensation for the cost of materials, transportation, duties and taxes.

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