

## TENDER SPECIFICATION

### FOR SUPPLY OF SELF DRILLING ANCHORS (SDA) (SLOPE 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 rock fall mitigation system and as directed by the Engineer-In-Charge

#### **2.0 MATERIALS**

##### **2.1 General Requirements**

- a) 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.

- b) 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 32 mm with sacrificial drill bit of approximately 51mm/76mm dia. with hexagonal nut & Plate. The SDA shall be made of yield strength of min. 550 N/mm<sup>2</sup>. 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 visit 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.

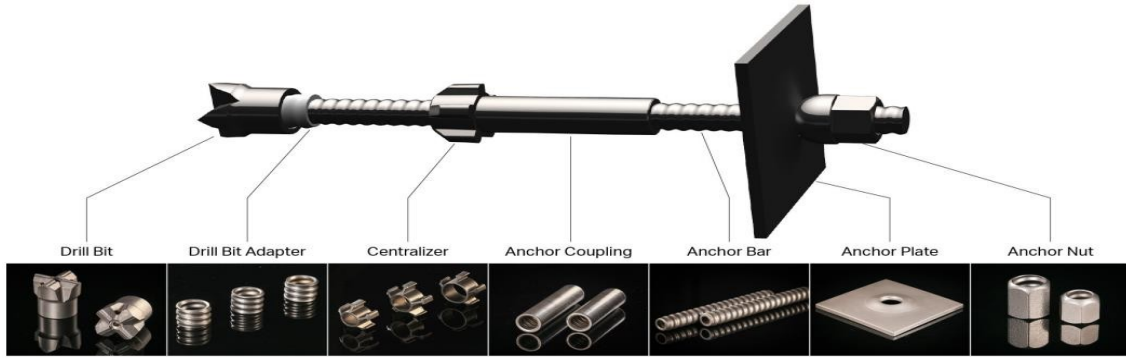


Fig1:Selfdrillinganchorswithaccessories

## 2.2 PhysicalandMechanicalProperties

ProductName	Type	TestMethod	ChemicalComposition(in%)							
			C	Si	Mn	P	S	Cr	Ni	Cu
Self - DrillingAnchor	R32N	ASTME-415:2017	0.41	0.22	0.62	0.02	0.004	0.9	-	-
			Mechanical Properties							
OuterDiameter(mm)			32							
InnerDiameter(mm)			20							
MinYieldLoad(kN)			230							
MinUltimateLoad(kN)			280							
MinElongation(%)			8							
Weight (Kg/m)			2.85							
ThreadType			ISO10208							
TypeofSteel			EN10083-1							
Thread(Left/Righthand)			Leftorright							
Length(m)			(1)x2,x3,x4,x5,x6							
OptionsofAnti-Corrosion			EpoxyCoating,HotDipGalvanization							

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## 3 INSTALLATIONS

- 1) 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. Any more / lesser length or spacing of anchoring/nailings shall be carried out as per site condition and as directed by engineer-in-charge.
- 2) 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.

- 3) The base plates of size 200mmx200mmx10mm shall be placed at rock interface for tightening the nuts.
- 4) 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

- 1) Grout agitator
- 2) Compressor – 450 to 600 CFM
- 3) Drilling equipment percussion/rotary type

Expansive plasticizing agent for cement grout shall be used, typical brand name DR.FIXIT PIDICRETEAM is a shrinkage compensating grout admixture for pressure grouting.

#### **4 APPROVED MANUFACTURERS**

##### **4.1 Approved Manufacturers**

TechFab (India) Industries Pvt. Ltd.  
 712 Embassy Centre  
 Nariman Point, Mumbai –  
 400021 Phone: 022-  
 22876224/6225  
 Fax: 022-22876218  
 Cell: +919822097561

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#### **5 DELIVERIES**

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

#### **6 PAYMENTS**

##### **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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