



INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR 721 302
DEPARTMENT OF CIVIL ENGINEERING

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NO. IIT/CE/STR/TMT/21022
Date: 09th November 2022

1. Name of the Agency : Consortium of M/s Teekay Managements, M/s Discon and M/s Basak Enginners, 6A Bidhannagar Road Kolkata-700067
2. Name of the work : Development of Interception Diversion (I & D) network for existing drains falling in river Churni including sewage treatment plant at Ranaghat Municipal Town.
3. Reference No. : TDBC/IITKGPR/42 dated 29.09.22
- Brand Name- ELEGANT QST 550D: 8mm, 10mm, 12 mm, 16 mm and 20 mm dia.

Physical Properties of HYSD Bars

a) Proof stress, Tensile Strength & % Elongation

Diameter in mm	0.2 % proof stress (N/mm ²)	Tensile Strength (N/mm ²)	% Elongation	Requirement as per IS:1786-2008 Amendment No. 1 November 2012, Table- 3
8	595.00	648.50	20.63	For Fe550D Grade a) Tensile strength/Yield Stress ratio ≥ 1.08 but Tensile strength not less than 600 N/mm ² b) Minimum Percentage elongation should not be less than 14.50 % on gauge length c) Minimum 0.2% proof stress/yield stress should not be less than 500 N/mm ²
10	564.00	684.00	20.50	
12	590.50	711.00	20.00	
16	593.00	689.50	16.25	
20	572.50	666.50	18.00	

b) Nominal Mass

Diameter in mm	Observed Mass per Meter Run	Requirement as per IS:1786-2008 Table- 1
8	0.390	0.395
10	0.586	0.617
12	0.875	0.888
16	1.536	1.580
20	2.433	2.470

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[Signature]
In-charge
Structural & Material Testing Laboratory
Civil Engineering Department
IIT, Kharagpur, India

c) Cross Sectional Area

Diameter in mm	Observed Cross Sectional Area (mm ²)	Requirement as per IS:1786-2008 Table- 1
8	49.55	50.3
10	74.58	78.6
12	111.43	113.1
16	195.67	201.2
20	309.98	314.3

d) Bend Test

Diameter in mm	Observed Test Results	Requirement as per IS:1786-2008
8	There is no transverse crack in the bent portion.	The specimen shall be considered to have passed the test if there is no transverse crack in the bent portion.
10	There is no transverse crack in the bent portion.	
12	There is no transverse crack in the bent portion.	
16	There is no transverse crack in the bent portion.	
20	There is no transverse crack in the bent portion.	

e) Rebend Test

Diameter in mm	Observed Test Results	Requirement as per IS:1786-2008
8	There is no fracture in the bent portion.	The specimen shall be considered to have passed the test if there is no fracture in the bent portion.
10	There is no fracture in the bent portion.	
12	There is no fracture in the bent portion.	
16	There is no fracture in the bent portion.	
20	There is no fracture in the bent portion.	

Remarks: The steel has been tested in accordance with the standard IS: 1786- 2008, IS: 1599-1985, IS: 1608-1985.

Note: Above results refer only to the sealed sample provided.

(Dr. A. Shaw)

To
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