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DEPARTMENT OF CIVIL ENGINEERING

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NO. IIT/CE/STR/TMT bars/723
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1. Name of the Agency : Assistant Engineer, Chinsurah Sub-Division, PHE Dte.
2. Name of the Work : Chopa Pipe Water Supply Scheme
3. Reference No. : Memo No 322/Ch dated 11.11.20
Brand Name : **ELEGANT QST 500D**: 8mm, 12 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	516.00	618.00	23.75	For Fe500D Grade a) Tensile strength/Yield Stress ratio ≥ 1.10 but Tensile strength not less than 565 N/mm ² b) Minimum Percentage elongation should not be less than 16 % on gauge length c) Minimum 0.2% proof stress/yield stress should not be less than 500 N/mm ²
12	518.50	636.50	27.09	
20	598.00	700.00	20.00	

b) Nominal Mass

Diameter in mm	Observed Mass per Meter Run	Requirement as per IS:1786-2008 Table- 1
8	0.389	0.395
12	0.891	0.888
20	2.541	2.470

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c) Cross Sectional Area

Diameter in mm	Observed Cross Sectional Area (mm ²)	Requirement as per IS:1786-2008 Table- 1
8	49.57	50.03
12	113.48	113.1
20	312.24	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.
12	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.
12	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. Deb)

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