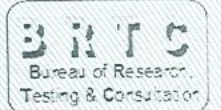




BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)

DEPARTMENT OF CIVIL ENGINEERING

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STRENGTH OF MATERIALS LABORATORY

TEST OF DEFORMED M.S. BARS [BDS ISO 6935-2:2016]

Sent by: Md. Moniruzzaman, Deputy General Manager, Sales & Marketing
Elite Iron & Steel Ind. Ltd., Bade Kalmeswar, Board Bazar, Joydebpur, Gazipur.
Project: - - -

BRTC No.: 1103-27005/CE/24-25; Dt. 7/7/2024

Ref.: Letter; Dt. 7/7/2024

Date of Test: 8/7/2024

Samples were received in UNSEALED condition.

Sl. No.	Frog Mark / Identification	Nominal dia. mm	Actual dia. mm	Mass Per Unit Length kg/m	Average Mass Per Unit Length kg/m	Yield or Proof Load kN	Yield or Proof Strength R_{eH} MPa	Average Yield Strength, R_{eH} MPa	Tensile Load kN	Tensile Strength R_m MPa	Average Tensile Strength, R_m MPa	R_m/R_{eH}	Total Elongation (%) (G.length = 5d)	Average Total Elongation (%)	Bend Test	Rebend Test (Seperate samples)	
1	ELITE 60 EIS B420 DWR	20	19.5	2.339	2.337	-	-	-	-	-	-	-	-	-	-	Satisfactory	
2	ELITE 60 EIS B420 DWR	20	19.5	2.345		-	-	-	-	-	-	-	-	-	-	-	Satisfactory
3	ELITE 60 EIS B420 DWR	20	19.4	2.328		-	-	-	-	-	-	-	-	-	-	-	Satisfactory
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

BDS ISO 6935-2:2016 Weight Requirements, Nominal Area etc. (Table 2).

Nominal bar dia., mm	6	8	10	12	14	16	20	22*	25	28	32	40	50
Nominal cross sectional area, sq.mm	28.3	50.3	78.5	113	154	201	314	380	491	616	804	1257	1964
Nominal mass per unit length	0.222	0.395	0.616	0.887	1.21	1.58	2.46	2.98	3.85	4.84	6.31	9.87	15.42
Permissible deviation, %	±8	±8	±6	±6	±5	±5	±5	±5	±4	±4	±4	±4	±4

Conversion factor: 1.0 MPa = 1.0 N/mm² = 145 psi. Strengths are based on nominal area.

*22mm dia. bar is not covered in BDS ISO 6935-2:2016. Its properties are derived following the principle used for other bar sizes. Actual diameter of bars are shown for informative purpose only. It is not a requirement of BDS ISO 6935-2:2016. Actual diameter is the diameter of a perfectly round plain bar having same mass per unit length.

BDS ISO 6935-2 Tensile Requirements for Common Steel Grades

Steel Grade	Yield Strength, R_{eH} , MPa		Ductility Properties		
	Min.	Max.	R_m/R_{eH} min.	Elongation, % (min.)	
				Total	At R_m
B400C-R	400	--	1.15	14	7
B400CWR	400	--	1.15	14	7
B500C-R	500	--	1.15	14	7
B500CWR	500	--	1.15	14	7
B600C-R	600	--	1.15	10	7
B450CWR	450	1.25 R_{eH} (min.)	1.15	--	7.5
B400DWR	400	1.3 R_{eH} (min.)	1.25	17	8
B420DWR	420	1.3 R_{eH} (min.)	1.25	16	8
B500DWR	500	1.3 R_{eH} (min.)	1.25	13	8

Countersigned by:
Prof. Dr. Hasib Mohammed Ahsan, Test-in-Charge
Dept. of Civil Engg., BUET, Dhaka-1000, Bangladesh

Pravat Kumar Saha

08 July 2024

Test performed by:
Dr. Pravat Kumar Saha
Associate Professor, Dept. of Civil Engg., BUET



Important Note: Samples as supplied to us have been tested. BRTC does not have any responsibility as to the representative character of the samples required to be tested. It is recommended that the samples are sent in a secure and sealed cover/packet/container under the signature of a competent authority. In order to avoid fraudulent fabrication of test results, this report has been printed on a security paper. It is also recommended that the test results be collected by a duly authorized person.

BUETCE 01-B3004