



TEST OF DEFORMED M.S. BARS [ASTM A 615M-16]

BRTC No.: 1103-29188/CE/24-25; Dt. 18/8/2024

Sent by: Md. Moniruzzaman, Deputy General Manager, Sales & Marketing

Ref.: Letter; Dt. 18/8/2024

Elite Iron & Steel Ind. Ltd., Bade Kalmeswar, Board Bazar, Joydebpur, Gazipur.

Date of Test: 19/8/2024

Project: -----

Samples were received in UNSEALED condition.

Table with 16 columns: Sl. No., Frog Mark / Identification, Bar Desig./Nominal dia., Actual bar dia., Unit Weight, Average Unit Weight, Yield or Proof Load, Yield or Proof Strength, Average Yield or Proof Strength (YS), Tensile Load, Tensile Strength, Average Tensile Strength (TS), TS/YS, Elongation (%), Average Elongation (%), Bend Test (Seperate samples). Rows 1-3 show test results for ELITE 60 EIS B420 DWR bars.

ASTM A615M-16 Weight Requirements and Nominal Area of bars (Table A1.1)

Table with 13 columns for bar sizes (8, 10, 12, 16, 20, 22, 25, 28, 32, 36, 40, 50, 60 mm) and 3 rows for Nominal area, sq.mm; Nominal weight, kg/m.

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

Measured unit weight shall not be less than 94% of the nominal weight. 8mm bar size is not covered in ASTM A615M-16. Area and weight of 8mm and 22mm dia. bars are derived based on principle followed for other sizes in Table A1.1 Actual dia. and TS/YS ratio are provided for informative purpose only. These are not requirements of ASTM A615M-16. Actual diameter is the diameter of a perfectly round plain bar having same mass per unit length.

ASTM A615M-16 Tensile Requirements for Common Steel Grades

Table with 4 columns for steel grades (Grade 60, Grade 75, Grade 80) and 4 rows for Tensile strength, Yield strength, Elongation, and Bar Designation No.

Countersigned by:

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

Test performed by:

Dr. Munaz Ahmed Noor, Professor, Dept. of Civil Engg., BUET

20 August 2024



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 0489743



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.: 1103-29188/CE/23-24; Dt. 18/8/2024

Ref.: Letter, Dt. 18/8/2024

Date of Test: 19/8/2024

Samples were received in UNSEALED condition.

Sl. No.	Frog Mark / Identification	Nominal dia.	Actual dia.	Mass Per Unit Length	Average Mass Per Unit Length	Yield or Proof Load	Yield or Proof Strength R_{eH}	Average Yield Strength, R_{eH}	Tensile Load	Tensile Strength R_m	Average Tensile Strength, R_m	R_m/R_{eH}	Total Elongation (%) (G.Length = 5d)	Average Total Elongation (%)	Bend Test	Rebend Test (Separate samples)	
		mm	mm	kg/m	kg/m	kN	MPa	MPa	kN	MPa	MPa	-	-	-	-		
1	ELITE 60 EIS B420 DWR	25	24.6	3.718	3.721	-	-	-	-	-	-	-	-	-	-	Satisfactory	
2	ELITE 60 EIS B420 DWR	25	24.6	3.735		-	-	-	-	-	-	-	-	-	-	-	Satisfactory
3	ELITE 60 EIS B420 DWR	25	24.5	3.711		-	-	-	-	-	-	-	-	-	-	-	Satisfactory
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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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	±5	±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

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Prof. Dr. Hasib Mohammed Ahsan, Test-in-Charge
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