

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET) DEPARTMENT OF CIVIL ENGINEERING

Mobile: 01819557964; PABX: (8802) - 55167100, 55167228-57 Ext. 7226, Info: http://brtc.ce.buet.ac.bd/#/home, Report verification: http://verify.ce.buet.ac.bd



STRENGTH OF MATERIALS LABORATORY

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

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

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

Project: 4-4

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

Ref.: Letter: Dt. 7/7/2024 Date of Test: 8/7/2024

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

Samples were received in UNSEALED condition.

SI. 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 (%) (G. length =	Average Elongation (%)	Bend Test (Seperate samples)
		mm	mm	kg/m	kg/m	kN	MPa	MPa	kN	MPa	MPa		200 mm)		, campios,
1	EIS B500 DWR	20	19.5	2.339	111111111111111111111111111111111111111	181	575	580	221	705	695	11.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	14	I and the second	Satisfactory
2	EIS B500 DWR	20	19.5	2.345	2.337	187	595	(84000 psi)	222	705	(101000 psi)	1.20	15	15	Satisfactory
3	EIS B500 DWR	20	19.4	2.328	are Silling	177	565		212	675			15		Satisfactory
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ASTM A615M-16 Weight Requirements and Nominal Area of bars (Table A1.1) Bar desig/Nominal dia., mm 8 10 12 16 20 22 25 28 32 36 40 50 60

Nominal area, sq.mm 50.3 79 113 201 314 380 491 616 804 1018 1257 1963 2827 Nominal weight, kg/m 0.395 | 0.617 | 0.888 | 1.578 | 2.466 | 2.98 | 3.853 | 4.834 | 6.313 | 7.99 | 9.865 | 15.41 | 22.2

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 22m 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

	Grade 60	Grade 75	Grade 80
	[420]	[520]	[550]
Tensile strength, min. psi [MPa]	90 000 [620]	100 000 [690]	105 000 [725]
Yield strength, min, psi [MPa]	60 000 [420]	75 000 [520]	80 000 [550]
Elongation in 8 in. [200 mm], min, %	THE STATE		
Bar Designation No.			
10, 12, 16, 20	9	7	7
25, 22	8	7	7
28, 32, 36, 40, 50, 60	7	6	6

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

08 July 2024

Test performed by: Dr. Provat 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 fradulent 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.



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Bureau of Research Testing & Consultation

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STRENGTH OF MATERIALS LABORATORY

TEST OF DEFORMED M.S. BARS IBDS ISO 6935-2:20161

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

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

SI. 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 Reit MPa	Average Yield Strength, ReH MPa	Tensile Load	Tensile Strength R _m	Average Tensile Strength, R _m MPa	R _m /R _{eH}	Total Elongation (%) (G.length = 5d)	Total Elongation (%)	Test	Test (Seperate samples)
4	ELITE CO ELO DAGO DIAID	mm	mm 19.5	kg/m 2.339	Kg/III	AIN		IVII Q	nis	101 2	Ten C		1111112111111		10000014000000	Satisfactory
-1-1-	ELITE 60 EIS B420 DWR	20	19.5	2.339	2.337						_	_	-	1 - 1		Satisfactory
2	ELITE 60 EIS B420 DWR	20	19.4	2.328	2.331				411/11/1-	-			1777/17/2/17/7/7			Satisfactory
3	ELITE 60 EIS B420 DWR	DOWN STREET, S	15.4	ELECTRICATION AND AND AND AND AND AND AND AND AND AN	1000000	10000		100000	10000	10000	100000000000000000000000000000000000000	STATE OF THE STATE	0.000.00.200000		Harring Philips	
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Nominal bar dia., mm Nominal cross sectional area, sq.mm			8	10	12	14	16	20	22*	25	28	32	40	50
			50.3	78.5	113 154	154	201	01 314	380	491	616	804	1257	1964
Nominal mass per	Nominal, kg/m	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
unit length	Permissible deviation, %	±8	±8	±6	±6	±5	±5	±5	±5	±4	±4	±4	±4	±4

*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

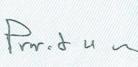
Steel	Yield S	trength, ReH, MPa	Ductiliy Properties							
Grade	Min.	Max.	Rm/ReH	Elongation, % (min.)						
			min.	Total	At Rm					
B400C-R	400	1111111111111111111	1.15	14	7					
B400CWR	400	(1) (1) (1) (1) (1) (1)	1.15	14	7					
B500C-R	500	(1)(1)(1)(1)(1)(1)	1.15	14	7					
B500CWR	500		1.15	14	7					
B600C-R	600		1.15	10	7					
B450CWR	450	1.25 R eH (min.)	1.15		7.5					
B400DWR	400	1.3 ReH (min.)	1.25	17	8					
B420DWR	420	1.3 R eH (min.)	1.25	16	8					
B500DWR	500	1.3 R at (min.)	1.25	13	8					

Countersigned by:

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

Dept. of Civil Engg., BUET, Dhaka-1000, Bangladesh

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