

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

Bureau of Research.
Testing & Consultation

1 of 2

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, Joydebour, Gazipur,

Project: ---

BRTC No.: 1103-26339/CE/23-24; Dt. 30/6/2024

Ref.: Letter; Dt. 30/6/2024 Date of Test: 1/7/2024

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

Samples were received in UNSEALED condition.

SI.	Frog Mark /	Bar	Actual	Unit	Average	Yield or	Yield or	Average	Tensile	Tensile	Average	TS/YS	Elongation	Average	Bend
No.	Identification	Desig./	bar	Weight	Unit	Proof	Proof	Yield or Proof	Load	Strength	Tensile		(%)	Elongation	Test
		Nominal	dia.		Weight	Load	Strength	Strength			Strength			(%)	(Seperate
		dia.						(YS)			(TS)		G. length =		samples)
		mm	mm	kg/m	kg/m	kN	MPa	MPa	kN	MPa	MPa		200 mm)		
1///1	ELITE 60 EIS B420 DWR	12	11.8//	0.856	111111111111111111111111111111111111111	54.6	484	478	69.2	610	610		16		Satisfactory
2	ELITE 60 EIS B420 DWR	12	11.9	0.867	0.864	53.3	472	(69500 psi)	68.3	605	(88000 psi)	1.28	16	16	Satisfactory
3	ELITE 60 EIS B420 DWR	12	11.9	0.869		54.2	480		68.7	610			16		Satisfactory
Mitali II		(/ /	\//// - /////	////-///	VIIIIIIII	6600		E 15 (E-101/01/1	- 11	-	-		-		
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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 follwed 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 PERSON NAMED IN	STEELINE 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 Mohamm

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

trate.

02 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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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.: 1103-26339/CE/23-24; Dt. 30/6/2024

Ref.: Letter: Dt. 30/6/2024 Date of Test: 1/7/2024

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	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,	Tensile Load	Tensile Strength	Average Tensile Strength, R_	R _m /R _{eH}	Total Elongation (%) (G.length	Average Total Elongation (%)	Bend Test	Rebend Test (Seperate samples)
1	ELITE EN EIG DANS DWD	// / mm ///	///mm	kg/m	kg/m	kN	MPa	MPa	kN	MPa	MPa		= 5d)			
2	ELITE 60 EIS B420 DWR	12	11.8	0.856	3000				1111-1111	-			- 11	1	11/11/2	Satisfactory
3	ELITE 60 EIS B420 DWR ELITE 60 EIS B420 DWR	12 12	11.9	0.867	0.864				Himilli	-	-	-	-	- 1	-	Satisfactory
1021000	ECLIE 00 EIO 0420 DWK	TO A TATALON ELECTRISTS		0.869	0300000	20.	•	10 8 2 3	11111-113	/////-	A. 12		<u> </u>	Programme,		Satisfactory
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		7 1							V/////ti//////	V//////- 						-
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	935-2:2016 Weight Requirements, Nominal A	manne-mann	101111-01111	1111111-1114/11	101111111111111111111111111111111111111			2228/8///	1111/41/4/	971111A		Valuation (A	000000400400			

	to Weight Requirements, N	omina	Area	etc. (Ta	ble 2).							13.00	11111	
Nominal bardia., mm			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	196/
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	15.47
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/R H	Elongation, % (min.)					
			min.	Total	At Rm				
B400C-R	400	7.1.1.1.1.1.1 .2. 11.1.1.1.1.1.1	1.15	14	7				
B400CWR	400	V.	1.15	14	7				
B500C-R	500	111111111111111111111111111111111111111	1.15	14	7				
B500CWR	500	11/1/11/12-01/11/11/11	1.15	14	7				
B600C-R	600		1.15	10	7				
B450CWR	450	1.25 R eH (min.)	1.15	111121111	7.5				
B400DWR	400	1.3 R eH (min.)	1.25	17	8				
B420DWR	420	1.3 R et (min.)	1.25	16	8				
B500DWR	500	1.3 Ref (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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