



BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)

DEPARTMENT OF CIVIL ENGINEERING

STRENGTH OF MATERIALS LABORATORY



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

Sent by: Md. Moniruzzaman, Deputy General Manager

ELITE IRON & STEEL IND. LTD., Bade Kalmeswar, Board Bazar, Joydebpur, Gazipur

Project: - - -

BRTC No.: 1103-14486/CE/23-24; Dt. 17/2/2024

Ref.: Letter; Dt. 17/2/2024

Date of Test: 18/2/2024

Samples were received in UNSEALED condition.

Sl. No.	Frog Mark / Identification	Bar Desig./ Nominal dia. mm	Actual bar dia. mm	Unit Weight kg/m	Average Unit Weight kg/m	Yield or Proof Load kN	Yield or Proof Strength MPa	Average Yield or Proof Strength (YS) MPa	Tensile Load kN	Tensile Strength MPa	Average Tensile Strength (TS) MPa	TS/YS	Elongation (%) (G. length = 200 mm)	Average Elongation (%)	Bend Test (Separate samples)
1	ELITE PURE 60 EIS B420 DWR	25	25.2	3.911	3.845	235	478	463	305	620	610	1.32	20	19	Satisfactory
2	ELITE PURE 60 EIS B420 DWR	25	24.8	3.807	3.845	222	452	(67000 psi)	294	600	(88000 psi)	1.32	19	19	Satisfactory
3	ELITE PURE 60 EIS B420 DWR	25	24.9	3.818	3.845	226	460		297	605		1.32	19	19	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 22mm dia. bars are derived based on principle followed for other sizes in Table A1.1. Actual dia. and TSYS 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

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

Countersigned by: Prof. Dr. Hasib Mohammed Ahsan, Test-in-Charge

Test performed by: Dr. Md. Mafizur Rahman

19 February 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 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.