



MILITARY ENGINEER SERVICES (MES)

MATERIALS TESTING LABORATORY

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TEST RESULT FOR TENSILE STRENGTH OF PLAIN/DEFORMED/RIBBED COLD TWISTED M.S BARS

Job No : 358(D)/2025-2026(Steel).

Copy No : 01

Name of Client : AGE (Navy) Kaptai.

Sample Specimen : Length 600mm , Dia 10mm

Ref.ltr.No : CEN/82 of 2025-2026/15/E-6 Dt.14 May'2026.

Sample Grade : 72.5

Project Name : Construction of 1 x Multipurpose Drill Shed.

Frog Mark : BSRM B-500 DWR.

Dt. of Sample Collection : 19 May'2026

Dt. Of Test : 19 May'2026

Sample No	Nominal Dia	Actual Dia	Area Under Test	Actual Unit Weight	Average Actual Unit Weight	Yield or Proof load	Yield or Proof Strength	Average Yield or Proof load	Ultimate load	Ultimate Strength	Average Ultimate Strength	Ratio	Elongation% (gauge length)		Average Elongation% (gauge length)	
	inch mm	inch mm	sq.inch sq.mm	lb/ft kg/m	lb/ft kg/m	lb kn	psi Mpa	psi Mpa	lb kn	psi Mpa	psi Mpa	(Fult/Fy)	8inch	5d	8inch	5d
1	0.394 10.00	0.396 10.05	0.1217 78.5398	0.418 0.623	0.418 0.623	12687.35 56.44	104219 719	103149 711	15781.07 70.20	129633 894	128231 884	1.24	16	17		
2	0.394 10.00	0.396 10.05	0.1217 78.5398	0.418 0.623		12571.04 55.92	103264 712		15546.14 69.15	127703 881						
3	0.394 10.00	0.396 10.05	0.1217 78.5398	0.418 0.623		12412.87 55.21	101965 703		15504.27 68.97	127359 878						

Observation on Specimen(if any):

ASTM A61M-16 Weight Requirements and Nominal Area of bars (Table A1.1)

Convein factor: 1.0 Mpa = 1.0 N/mm²= 145 Psi. Strengths are based on nominal area.

Bar design/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	615	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 & 22mm 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 [420]	Grade 75 [520]	Grade 80 [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, %

Bar Designation No.

10, 12, 16, 20	9	7	7
25, 22	8	7	7
28, 32, 36, 40, 60	7	6	6

Report Prepared by :

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