



# MILITARY ENGINEER SERVICES (MES) MATERIALS TESTING LABORATORY

Mobile: 01769-012888, <http://mes.org.bd>



Page no: 634

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

Job No : 141/2025-2026(Steel).  
Name of Client : GE (Navy) South, Chattogram.  
Ref.Itr.No : CEN/230 of 2025-2026/06/E-6 Dt.05 May'2026.  
Project Name : Construction of RCC Road.  
Dt. of Sample Collection : 07 May'2026

Copy No : 01  
Sample Specimen : Length 600mm , Dia 10mm  
Sample Grade : 72.5  
Frog Mark : AKS B-500 DWR.  
Dt. Of Test : 07 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 (Fult/Fy)	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		8inch	5d	8inch	5d
1	0.394	0.395	0.1217	0.418	0.418	12040.69	98907	102824	15739.20	129289	129308	1.31	18.5	19		
	10.00	10.04	78.5398	0.622		53.56	682		70.01	892						
2	0.394	0.395	0.1217	0.418	0.622	12564.06	103207	709	15674.07	128754	892	1.25	18.5			
	10.00	10.04	78.5398	0.622		55.89	712		69.72	888						
3	0.394	0.395	0.1217	0.418	0.622	12947.87	106359	734	15811.31	129881	896	1.22	19.5			
	10.00	10.04	78.5398	0.622		57.59	734		70.33	896						

Observation on Specimen(if any):

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

Conveion factor: 1.0 Mpa = 1.0 N/mm<sup>2</sup>= 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 :

MD. IKBAL HOSSEN  
SAE B/R  
AHQ E in C 's Br  
Wks Dte, Dhaka Cantt.

Test Performed by :

AHASAN HABIB  
AE B/R  
Actg SO-III (Lab)  
AHQ E in C 's Br  
Wks Dte, Dhaka Cantt.

Countersigned by :

MD ATIKUR RAHMAN  
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Page no: 635

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

Job No : 141/2025-2026(Steel). Copy No : 02  
 Name of Client : GE (Navy) South, Chattogram. Sample Specimen : Length 600mm , Dia 12mm  
 Ref.ltr.No : CEN/230 of 2025-2026/06/E-6 Dt.05 May'2026. Sample Grade : 72.5  
 Project Name : Construction of RCC Road. Frog Mark : AKS B-500 DWR.  
 Dt. of Sample Collection: 07 May'2026 Dt. Of Test : 07 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	0.472	0.475	0.175	0.603	0.603	17044.15	97228	96834	21382.34	121975	120962	1.25	20		20	
	12.00	12.06	113.097	0.897		75.82	671		95.11	841						
2	0.472	0.475	0.175	0.603	0.897	16955.76	96724	668	21159.04	120701	834	1.25	19.5		20	
	12.00	12.06	113.097	0.897		75.42	667		94.12	832						
3	0.472	0.475	0.175	0.603	0.897	16925.52	96551	666	21072.97	120210	829	1.25	20.5		20	
	12.00	12.06	113.097	0.897		75.29	666		93.74	829						

Observation on Specimen(if any):

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

Conveion factor: 1.0 Mpa = 1.0 N/mm<sup>2</sup>= 145 Psi. Strengths are based on nominal area.

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Nominal area, sq.mm	50.3	79	113	201	314	380	491	615	804	1018	1257	1963	2827
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Bar Designation No.

10, 12, 16, 20	9	7	7
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