



# MILITARY ENGINEER SERVICES (MES)

## MATERIALS TESTING LABORATORY

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



Page no: 636

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

Job No : 142/2025-2026(Steel).  
 Name of Client : GE (Navy) South, Chattogram.  
 Ref.ltr.No : CEN/229 of 2025-2026/04/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	0.396	0.1217	0.420	0.420	12459.39	102347	105570	15376.33	126308	127359	1.23	18.5			
	10.00	10.07	78.5398	0.625		55.42	706		68.40	871						
2	0.394	0.396	0.1217	0.420	0.625	12971.13	106550	728	15483.33	127187	878	1.19	20.5		20	
	10.00	10.07	78.5398	0.625		57.70	735		68.87	877						
3	0.394	0.396	0.1217	0.420	0.625	13124.66	107812	744	15653.14	128582	887	1.19	20.5			
	10.00	10.07	78.5398	0.625		58.38	744		69.63	887						

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/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 :

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  
 MAJOR  
 OIC (Lab)  
 AHQ E in C 's Br  
 Wks Dte, Dhaka Cantt.





# MILITARY ENGINEER SERVICES (MES)

## MATERIALS TESTING LABORATORY

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



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

Page no: 637

Job No : 142/2025-2026(Steel).

Copy No : 02

Name of Client : GE (Navy) South, Chattogram.

Sample Specimen : Length 600mm , Dia 12mm

Ref.ltr.No : CEN/229 of 2025-2026/04/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	0.602	0.602	17339.57	98913	97201	21065.99	120170	120767	1.21	20		20	
	12.00	12.06	113.097	0.896		77.13	682		93.71	829						
2	0.472	0.475	0.175	0.602	0.896	16867.37	96219	670	21179.97	120820	833	1.26	20.5			
	12.00	12.06	113.097	0.896		75.03	664		94.21	833						
3	0.472	0.475	0.175	0.602	0.896	16911.56	96471	665	21266.04	121311	837	1.26	20.5			
	12.00	12.06	113.097	0.896		75.23	665		94.60	837						

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/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 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 [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 :

Test Performed by :

Countersigned by :

MD. IKBAL HOSSEN

SAE B/R

AHQ E in C 's Br

Wks Dte, Dhaka Cantt.

AHASAN HABIB

AE B/R

Actg SO-III (Lab)

AHQ E in C 's Br

Wks Dte, Dhaka Cantt.

MD ATIKUR RAHMAN

MAJOR

OIC (Lab)

AHQ E in C 's Br

Wks Dte, Dhaka Cantt.

