



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: 619

Job No : 136/2025-2026(Steel).
Name of Client : GE (Navy) North, Chattogram.
Ref.ltr.No : CEN/42 of 2025-2026/24/E-6 Dt.28 Apr'2026.
Project Name : Construction of RCC Palasiding.
Dt. of Sample Collection : 30 Apr'2026

Copy No : 01
Sample Specimen : Length 600mm , Dia 10mm
Sample Grade : 60
Frog Mark : BAIZID B-420 DWR.
Dt. Of Test : 30 Apr'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		(Fult/Fy)	8inch	5d	8inch
1	0.394	0.401	0.1217	0.430	0.430	10935.79	89831	88755	13752.70	112971	111576	1.26	22.5			
	10.00	10.19	78.5398	0.640		48.64	620		61.17	779						
2	0.394	0.401	0.1217	0.430	0.640	10510.11	86335	612	13199.09	108423	769	1.26	21		21	
	10.00	10.19	78.5398	0.640		46.75	595		58.71	748						
3	0.394	0.401	0.1217	0.430	0.640	10968.35	90099	612	13796.90	113334	782	1.26	18.5			
	10.00	10.19	78.5398	0.640		48.79	621		61.37	782						

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.

Bar Designation No.	Grade 60 [420]	Grade 75 [520]	Grade 80 [550]
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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Test Performed by :

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

Page no: 620

Job No : 136/2025-2026(Steel).
Name of Client : GE (Navy) North, Chattogram.
Ref.ltr.No : CEN/42 of 2025-2026/24/E-6 Dt.28 Apr'2026.
Project Name : Construction of RCC Palasiding.
Dt. of Sample Collection: 30 Apr'2026

Copy No : 02
Sample Specimen : Length 600mm , Dia 12mm
Sample Grade : 60
Frog Mark : BAIZID B-420 DWR.
Dt. Of Test : 30 Apr'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	0.476	0.175	0.606	0.606	14092.32	80389	79509	18428.18	105123	104751	1.31	21.5			
	12.00	12.10	113.097	0.902		62.69	554		81.97	725						
2	0.472	0.476	0.175	0.606	0.902	13820.16	78837	548	18276.99	104260	722	1.32	22.5		22	
	12.00	12.10	113.097	0.902		61.47	544		81.30	719						
3	0.472	0.476	0.175	0.606	0.902	13901.58	79301	547	18383.99	104871	723	1.32	21.5			
	12.00	12.10	113.097	0.902		61.84	547		81.78	723						

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 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.

	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

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Page no: 621

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 Name of Client : GE (Navy) North, Chattogram.
 Ref.ltr.No : CEN/42 of 2025-2026/24/E-6 Dt.28 Apr'2026.
 Project Name : Construction of RCC Palasiding.
 Dt. of Sample Collection: 30 Apr'2026

Copy No : 03
 Sample Specimen : Length 600mm , Dia 16mm
 Sample Grade : 60
 Frog Mark : BAIZID B-420 DWR.
 Dt. Of Test : 30 Apr'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	0.630	0.637	0.312	1.085	1.085	24601.68	78941	77321	31168.28	100012	99076	1.27	21			
	16.00	16.18	201.062	1.615		109.43	544		138.64	690						
2	0.630	0.637	0.312	1.085	1.615	23882.91	76635	533	30721.67	98579	683	1.29	17.5		19	
	16.00	16.18	201.062	1.615		106.24	529		136.66	680						
3	0.630	0.637	0.312	1.085	1.615	23806.15	76388	533	30740.28	98638	683	1.29	18			
	16.00	16.18	201.062	1.615		105.89	527		136.74	680						

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
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Elongation in 8 in. [200 mm], min, %

Bar Designation No.

10, 12, 16, 20	9	7	7
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