



MATERIALS TESTING LABORATORY MILITARY ENGINEER SERVICES(MES)

Page no: 96

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

Job No : 26/2025-2026 (Steel).

Copy No : 01

Name of Client : AGE (Navy) Kaptai

Sample Specimen : Length 600mm , Dia 10mm

Ref.ltr.No : CEN/22 of 2023-2024/28/E-6 Dt.29 July'2025.

Sample Grade : 60

Project Name : Construction of (6 x 2=12) Followers Qtr.

Frog Mark : BSRM B-500 DWR.

Dt. of Sample Collection : 31 July'2025

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	0.393 9.99	0.1217 78.5398	0.413 0.615	0.413 0.615	15690.23 69.79	128886 889	131293 905	18903.40 84.09	155281 1071	156377 1078	1.20	14		14	
2	0.394 10.00	0.393 9.99	0.1217 78.5398	0.413 0.615		16081.18 71.53	132098 911		19113.91 85.02	157010 1083		1.19	13.5			
3	0.394 10.00	0.393 9.99	0.1217 78.5398	0.413 0.615		16178.34 71.96	132896 917		19093.09 84.93	156839 1082		1.18	15.5			

Cautions:

1. Samples as supplied to the laboratory have been tested.The laboratory authority does not bear any responsibility as to the representative charecture of the samples to be tested.
2. It is recommended that samples are Sent in asecuried and sealed cover/packet/container under signature of the competent authority.
3. In order to avoid fraudulent of the test results,it is recommended that all test reports should be collected by duly authorised person and not by contractor/supplier.

Ovservation on Specimen(if any):

1. Diameter & Unit weight of 10 mm bar is less than the standard value but within tolerance limit according to MES Schedule of Rates-2016.

Minimum Standard Requirements (BDS/ISO 6935-2:1991(E))				Minimum Standard Requirments(ASTM A615/A616M-96a)									
Grade	Y/strength	Ult.Str	Elongation	ASTM A 615 M			ASTM A 615 M			ASTM A 615/A 615 M			
	N/mm2 or Mpa	N/mm2 or Mpa	%	Grade	Y/strength psi (kg/cm2)	Ult.Str psi (kg/cm2)	Grade	Y/strength Mpa (kg/cm2)	Ult.Str Mpa (kg/cm2)	Minimum Elongation in 8"(203.2 mm) GL (%)			
300	300	330	16	40	40000(2810)	70000(4910)	300	300(3050)	500(5090)	10 mm	13,16,19 mm	22,25 mm	29,32,36 mm
400/400w	400	440	14	60	60000(4210)	90000(6310)	420	420(4275)	620(6295)	9	9	8	7
500/500w	500	550	14	75	75000(5255)	100000(7015)	520	520(5275)	690(7010)	..	7	7	6

Laboratory Technician

Test Performed By

Vetted By



MATERIALS TESTING LABORATORY MILITARY ENGINEER SERVICES(MES)

Page no: 97

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

Job No : 26/2025-2026 (Steel).

Copy No : 02

Name of Client : AGE (Navy) Kaptai

Sample Specimen : Length 600mm , Dia 12mm

Ref.ltr.No : CEN/22 of 2023-2024/28/E-6 Dt.29 July'2025.

Sample Grade : 60

Project Name : Construction of (6 x 2=12) Followers Qtr.

Frog Mark : BSRM B-500 DWR.

Dt. of Sample Collection: 31 July'2025

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 12.00	0.468 11.88	0.175 113.097	0.585 0.871	0.585 0.871	19426.21 86.41	110816 764	114999 793	24103.69 107.22	137499 948	139628 963	1.24	18.5		17	
2	0.472 12.00	0.468 11.88	0.175 113.097	0.585 0.871		20027.66 89.09	114247 788		24274.87 107.98	138475 955		1.21	16.5			
3	0.472 12.00	0.468 11.88	0.175 113.097	0.585 0.871		21024.69 93.52	119935 827		25052.14 111.44	142909 986		1.19	14.5			

Cautions:

1. Samples as supplied to the laboratory have been tested.The laboratory authority does not bear any responsibility as to the representative charecture of the samples to be tested.
2. It is recommended that samples are Sent in asecuried and sealed cover/packet/container under signature of the competent authority.
3. In order to avoid fraudulent of the test results,it is recommended that all test reports should be collected by duly authorised person and not by contractor/supplier.

Ovservation on Specimen(if any):

1. Diameter & Unit weight of 12 mm bar is less than the standard value but within tolerance limit according to MES Schedule of Rates-2016.

Minimum Standard Requirements (BDS/ISO 6935-2:1991(E))				Minimum Standard Requirments(ASTM A615/A616M-96a)									
Grade	Y/strength	Ult.Str	Elongation	ASTM A 615 M			ASTM A 615 M			ASTM A 615/A 615 M			
	N/mm2 or Mpa	N/mm2 or Mpa	%	Grade	Y/strength psi (kg/cm2)	Ult.Str psi (kg/cm2)	Grade	Y/strength Mpa (kg/cm2)	Ult.Str Mpa (kg/cm2)	Minimum Elongation in 8"(203.2 mm) GL (%)			
300	300	330	16	40	40000(2810)	70000(4910)	300	300(3050)	500(5090)	10 mm	13,16,19 mm	22,25 mm	29,32,36 mm
400/400w	400	440	14	60	60000(4210)	90000(6310)	420	420(4275)	620(6295)	9	9	8	7
500/500w	500	550	14	75	75000(5255)	100000(7015)	520	520(5275)	690(7010)	..	7	7	6

Laboratory Technician

Test Performed By

Vetted By



MATERIALS TESTING LABORATORY MILITARY ENGINEER SERVICES(MES)

Page no: 98

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

Job No : 26/2025-2026 (Steel).

Copy No : 03

Name of Client : AGE (Navy) Kaptai

Sample Specimen : Length 600mm , Dia 16mm

Ref.ltr.No : CEN/22 of 2023-2024/28/E-6 Dt.29 July'2025.

Sample Grade : 60

Project Name : Construction of (6 x 2=12) Followers Qtr.

Frog Mark : BSRM B-500 DWR.

Dt. of Sample Collection: 31 July'2025

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 16.00	0.626 15.89	0.312 201.062	1.046 1.557	1.046 1.557	30523.08 135.77	97941 675	96971 669	37708.17 167.73	120997 834	120042 828	1.24	19.5		18	
2	0.630 16.00	0.626 15.89	0.312 201.062	1.046 1.557		30553.15 135.91	98038 676		37708.17 167.73	120997 834		1.23	17.5			
3	0.630 16.00	0.626 15.89	0.312 201.062	1.046 1.557		29586.20 131.61	94935 655		36815.24 163.76	118131 815		1.24	18			

Cautions:

1. Samples as supplied to the laboratory have been tested.The laboratory authority does not bear any responsibility as to the representative charecture of the samples to be tested.
2. It is recommended that samples are Sent in asecuried and sealed cover/packet/container under signature of the competent authority.
3. In order to avoid fraudulent of the test results,it is recommended that all test reports should be collected by duly authorised person and not by contractor/supplier.

Ovservation on Specimen(if any):

1. Diameter & Unit weight of 16 mm bar is less than the standard value but within tolerance limit according to MES Schedule of Rates-2016.

Minimum Standard Requirements (BDS/ISO 6935-2:1991(E)				Minimum Standard Requirments(ASTM A615/A616M-96a)									
Grade	Y/strength	Ult.Str	Elongation	ASTM A 615 M		ASTM A 615 M		ASTM A 615/A 615 M					
	N/mm2 or Mpa	N/mm2 or Mpa	%	Grade	Y/strength	Ult.Str	Grade	Y/strength	Ult.Str	Minimum Elongation in 8"(203.2 mm) GL (%)			
					psi (kg/cm2)	psi (kg/cm2)		Mpa (kg/cm2)	Mpa (kg/cm2)	10 mm	13,16,19 mm	22,25 mm	29,32,36 mm
300	300	330	16	40	40000(2810)	70000(4910)	300	300(3050)	500(5090)	11	12	..	..
400/400w	400	440	14	60	60000(4210)	90000(6310)	420	420(4275)	620(6295)	9	9	8	7
500/500w	500	550	14	75	75000(5255)	100000(7015)	520	520(5275)	690(7010)	..	7	7	6

Laboratory Technician

Test Performed By

Vetted By



MATERIALS TESTING LABORATORY MILITARY ENGINEER SERVICES(MES)

Page no: 100

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

Job No : 26/2025-2026 (Steel).

Copy No : 04

Name of Client : AGE (Navy) Kaptai

Sample Specimen : Length 600mm , Dia 20mm

Ref.ltr.No : CEN/22 of 2023-2024/28/E-6 Dt.29 July'2025.

Sample Grade : 60

Project Name : Construction of (6 x 2=12) Followers Qtr.

Frog Mark : BSRM B-500 DWR.

Dt. of Sample Collection: 31 July'2025

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	0.787 20.00	0.774 19.65	0.4869 314.1593	1.599 2.380	1.599 2.380	42929.28 190.96	88160 608	87926 606	53732.37 239.01	110345 761	110361 761	1.25	21.6		23	
2	0.787 20.00	0.774 19.65	0.4869 314.1593	1.599 2.380		42920.03 190.92	88141 608		53797.14 239.30	110478 762		1.25	23.05			
3	0.787 20.00	0.774 19.65	0.4869 314.1593	1.599 2.380		42596.17 189.48	87476 603		53690.73 238.83	110260 760		1.26	23			

Cautions:

1. Samples as supplied to the laboratory have been tested.The laboratory authority does not bear any responsibility as to the representative charecture of the samples to be tested.
2. It is recommended that samples are Sent in asecuried and sealed cover/packet/container under signature of the competent authority.
3. In order to avoid fraudulent of the test results,it is recommended that all test reports should be collected by duly authorised person and not by contractor/supplier.

Ovservation on Specimen(if any):

1. Diameter & Unit weight of 20 mm bar is less than the standard value but within tolerance limit according to MES Schedule of Rates-2016.

Minimum Standard Requirements (BDS/ISO 6935-2:1991(E))				Minimum Standard Requirments(ASTM A615/A616M-96a)									
Grade	Y/strength	Ult.Str	Elongation	ASTM A 615 M			ASTM A 615 M			ASTM A 615/A 615 M			
	N/mm2 or Mpa	N/mm2 or Mpa	%	Grade	Y/strength psi (kg/cm2)	Ult.Str psi (kg/cm2)	Grade	Y/strength Mpa (kg/cm2)	Ult.Str Mpa (kg/cm2)	Minimum Elongation in 8"(203.2 mm) GL (%)			
300	300	330	16	40	40000(2810)	70000(4910)	300	300(3050)	500(5090)	10 mm	13,16,19 mm	22,25 mm	29,32,36 mm
400/400w	400	440	14	60	60000(4210)	90000(6310)	420	420(4275)	620(6295)	9	9	8	7
500/500w	500	550	14	75	75000(5255)	100000(7015)	520	520(5275)	690(7010)	..	7	7	6

Laboratory Technician

Test Performed By

Vetted By



MATERIALS TESTING LABORATORY MILITARY ENGINEER SERVICES(MES)

Page no: 101

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

Job No : 26/2025-2026 (Steel).

Copy No : 05

Name of Client : AGE (Navy) Kaptai

Sample Specimen : Length 600mm , Dia 22mm

Ref.ltr.No : CEN/22 of 2023-2024/28/E-6 Dt.29 July'2025.

Sample Grade : 60

Project Name : Construction of (6 x 2=12) Followers Qtr.

Frog Mark : BSRM B-500 DWR.

Dt. of Sample Collection: 31 July'2025

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	0.866 22.00	0.863 21.93	0.5892 380.1327	1.993 2.965	1.993 2.965	53901.24 239.76	91481 631	91930 634	69268.46 308.12	117562 811	117088 808	1.29	17.5		20	
2	0.866 22.00	0.863 21.93	0.5892 380.1327	1.993 2.965		53998.40 240.20	91646 632		68313.07 303.87	115941 800		1.27	19.5			
3	0.866 22.00	0.863 21.93	0.5892 380.1327	1.993 2.965		54597.54 242.86	92663 639		69385.28 308.64	117760 812		1.27	22			

Cautions:

1. Samples as supplied to the laboratory have been tested.The laboratory authority does not bear any responsibility as to the representative charecture of the samples to be tested.
2. It is recommended that samples are Sent in asecuried and sealed cover/packet/container under signature of the competent authority.
3. In order to avoid fraudulent of the test results,it is recommended that all test reports should be collected by duly authorised person and not by contractor/supplier.

Ovservation on Specimen(if any):

1. Diameter & Unit weight of 22 mm bar is less than the standard value but within tolerance limit according to MES Schedule of Rates-2016.

Minimum Standard Requirements (BDS/ISO 6935-2:1991(E))				Minimum Standard Requirments(ASTM A615/A616M-96a)									
Grade				ASTM A 615 M		ASTM A 615 M		ASTM A 615/A 615 M					
				Y/strength	Ult.Str	Y/strength	Ult.Str	Minimum Elongation in 8"(203.2 mm) GL (%)					
				N/mm2 or Mpa	N/mm2 or Mpa	psi (kg/cm2)	psi (kg/cm2)	Mpa (kg/cm2)	Mpa (kg/cm2)	10 mm	13,16,19 mm	22,25 mm	29,32,36 mm
300	300	330	16	40000(2810)	70000(4910)	300	300(3050)	500(5090)	11	12	..	..	
400/400w	400	440	14	60000(4210)	90000(6310)	420	420(4275)	620(6295)	9	9	8	7	
500/500w	500	550	14	75000(5255)	100000(7015)	520	520(5275)	690(7010)	..	7	7	6	

Laboratory Technician

Test Performed By

Vetted By