



MATERIALS TESTING LABORATORY MILITARY ENGINEER SERVICES(MES)

Page no: 534

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

Job No : 96/2025-2026 (Steel).

Copy No : 01

Name of Client : AGE (Navy) Kaptai.

Sample Specimen : Length 600mm , Dia 10mm

Ref.ltr.No : CEN/208 of 2024-2025/10/E-6 Dt.01 Jan'2026.

Sample Grade : 72.5

Project Name : Construction of SMBK.

Frog Mark : KSRM B-500 CWR.

Dt. of Sample Collection : 04 Jan'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	0.395 10.04	0.1217 78.5398	0.418 0.621	0.418 0.621	12812.96 56.99	105251 726	104328 720	14738.98 65.56	121072 835	119595 825	1.15	17.5	17		
2	0.394 10.00	0.395 10.04	0.1217 78.5398	0.418 0.621		12922.28 57.48	106149 732		14757.58 65.64	121225 836		1.14	17.5			
3	0.394 10.00	0.395 10.04	0.1217 78.5398	0.418 0.621		12366.34 55.01	101582 701		14180.71 63.08	116486 803		1.15	16.5			

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):

Minimum Standard Requirements (BDS/ISO 6935-2:1991(E))				Minimum Standard Requirements(ASTM A615/A616M-96a)									
Grade	Y/strength N/mm2 or Mpa	Ult.Str N/mm2 or Mpa	Elongation %	ASTM A 615 M		ASTM A 615 M		ASTM A 615/A 615 M					
				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 (%)			
									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

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MATERIALS TESTING LABORATORY MILITARY ENGINEER SERVICES(MES)

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

Job No : 96/2025-2026 (Steel).

Copy No : 02

Name of Client : AGE (Navy) Kaptai.

Sample Specimen : Length 600mm , Dia 12mm

Ref.ltr.No : CEN/208 of 2024-2025/10/E-6 Dt.01 Jan'2026.

Sample Grade : 72.5

Project Name : Construction of SMBK.

Frog Mark : KSRM B-500 CWR.

Dt. of Sample Collection: 04 Jan'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 12.00	0.470 11.94	0.175 113.097	0.590 0.878	0.590 0.878	17095.32 76.04	97520 673	96255 664	19942.48 88.71	113761 785	113359 782	1.17	16.5	19		
2	0.472 12.00	0.470 11.94	0.175 113.097	0.590 0.878		16776.65 74.63	95702 660		19879.68 88.43	113403 782		1.18	20.5			
3	0.472 12.00	0.470 11.94	0.175 113.097	0.590 0.878		16748.73 74.50	95543 659		19793.61 88.05	112912 779		1.18	19			

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.

Oservation 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 Requirements(ASTM A615/A616M-96a)									
Grade	Y/strength N/mm2 or Mpa	Ult.Str N/mm2 or Mpa	Elongation %	ASTM A 615 M		ASTM A 615 M		ASTM A 615/A 615 M					
				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 (%)			
									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

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MATERIALS TESTING LABORATORY MILITARY ENGINEER SERVICES(MES)

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

Job No : 96/2025-2026 (Steel).

Copy No : 03

Name of Client : AGE (Navy) Kaptai.

Sample Specimen : Length 600mm , Dia 16mm

Ref.ltr.No : CEN/208 of 2024-2025/10/E-6 Dt.01 Jan'2026.

Sample Grade : 60

Project Name : Construction of SMBK.

Frog Mark : KSRM B-500 CWR.

Dt. of Sample Collection: 04 Jan'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	0.634	0.312	1.073	1.073	27839.62	89331	88975	32896.58	105557	105445	1.18	19		21	
	16.00	16.09	201.062	1.596		123.84	616		614	146.33							728	727
2	0.630	0.634	0.312	1.073	1.596	27651.21	88726	614	32854.71	105423	727	1.19	21.5			
	16.00	16.09	201.062	1.596		123.00	612		614	146.14							727	727
3	0.630	0.634	0.312	1.073	1.596	27695.40	88868	613	32833.78	105356	727	1.19	22.5			
	16.00	16.09	201.062	1.596		123.19	613		613	146.05							727	727

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):

Minimum Standard Requirements (BDS/ISO 6935-2:1991(E))				Minimum Standard Requirements(ASTM A615/A616M-96a)									
Grade	Y/strength N/mm2 or Mpa	Ult.Str N/mm2 or Mpa	Elongation %	ASTM A 615 M		ASTM A 615 M		ASTM A 615/A 615 M					
				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 (%)			
									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

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MATERIALS TESTING LABORATORY MILITARY ENGINEER SERVICES(MES)

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

Job No : 96/2025-2026 (Steel).

Copy No : 04

Name of Client : AGE (Navy) Kaptai.

Sample Specimen : Length 600mm , Dia 20mm

Ref.ltr.No : CEN/208 of 2024-2025/10/E-6 Dt.01 Jan'2026.

Sample Grade : 60

Project Name : Construction of SMBK.

Frog Mark : KSRM B-500 CWR.

Dt. of Sample Collection: 04 Jan'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	0.787	0.786	0.4869	1.651	1.651	40949.57	84094	86511	50163.29	103016	103818	1.23	24		23	
	20.00	19.96	314.1593	2.457		182.15	580		223.14	710						
2	0.787	0.786	0.4869	1.651	2.457	42863.96	88026	597	50823.91	104372	716	1.19	24.5			
	20.00	19.96	314.1593	2.457		190.67	607		226.07	720						
3	0.787	0.786	0.4869	1.651	2.457	42566.22	87414	603	50675.03	104067	718	1.19	21			
	20.00	19.96	314.1593	2.457		189.34	603		225.41	718						

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.

Oservation 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 Requirements(ASTM A615/A616M-96a)									
Grade	Y/strength N/mm2 or Mpa	Ult.Str N/mm2 or Mpa	Elongation %	ASTM A 615 M		ASTM A 615 M		ASTM A 615/A 615 M					
				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 (%)			
									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

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MATERIALS TESTING LABORATORY MILITARY ENGINEER SERVICES(MES)

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

Job No : 96/2025-2026 (Steel).

Copy No : 05

Name of Client : AGE (Navy) Kaptai.

Sample Specimen : Length 600mm , Dia 25mm

Ref.ltr.No : CEN/208 of 2024-2025/10/E-6 Dt.01 Jan'2026.

Sample Grade : 60

Project Name : Construction of SMBK.

Frog Mark : KSRM B-500 CWR.

Dt. of Sample Collection: 04 Jan'2026

Sample No	Nominal Dia	Actual Dia	Area Under Test	Actual Unit Weight	Average Actual 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	5d
1	0.984 25.00	0.983 24.96	0.7609 490.8739	2.581 3.841	2.581 3.841	66266.94 294.77	87095 601	86643 598	78953.54 351.20	103769 716	103742 715	1.19	22.5	24		
2	0.984 25.00	0.983 24.96	0.7609 490.8739	2.581 3.841		65804.05 292.71	86487 596		78825.61 350.63	103601 714		1.20	24			
3	0.984 25.00	0.983 24.96	0.7609 490.8739	2.581 3.841		65697.05 292.23	86346 595		79018.67 351.49	103855 716		1.20	25			

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 asecured 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 25 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 Requirements(ASTM A615/A616M-96a)									
Grade	Y/strength N/mm2 or Mpa	Ult.Str N/mm2 or Mpa	Elongation %	ASTM A 615 M			ASTM A 615 M			ASTM A 615/A 615 M			
				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 (%)			
										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

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