



Client: Engr. Md. Tanjidul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil; 29/12/2025
BRTC Ref: 1103-70090/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

07 January 2026
MME 0502/2025-2026



6nkbru11ald

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R_{eH}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R_m	Average Tensile Strength	R_{m}/R_{eH}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A_{gt}	Bend Test
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%	(Separate Sample)
GPH QUANTUM B600D-R 10	1	10	9.99	0.616	0.614	50.63	645	649 (94,000)	65.98	840	841 (122,000)	1.30	20	21	10	Satisfactory
	2	10	9.98	0.613		51.02	650		66.07	841		1.29	22		10	Satisfactory
	3	10	9.98	0.613		51.26	653		66.22	843		1.29	21		9	Satisfactory

Test Performed by

Mr. Humayun Kabir
07/01/2026

Mr. Humayun Kabir
Assistant Professor

Countersigned by

Dr. H. M. Mamun Al Rashed
07 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Weight Requirements and Nominal Cross-Sectional Area for Steel Rebar (As Per BDS ISO 6935-2 2021 Table 2)

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.617	0.888	1.58	2.47	3.85	4.84	6.31	9.83
Permissible Variation of Nominal Mass per Unit Length, %	±8	±8	±6	±6	±5	±5	±4	±4	±4	±4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Minimum Tensile Requirements for Steel Rebar (As Per BDS ISO 6935-2 2021 Table 6)

Steel Grade	Upper Yield Strength		Ductility Properties		
	R_{eH}		R_{m}/R_{eH}	A	A_{gt}
	MPa			%	%
	Minimum	Maximum	Minimum	Minimum	Minimum
B400C-R / B-06CWR	400	---	1.15	14	7
B500C-R / B500CWR	500	---		10	
B600C-R	600	---		17	
B400DWR	400	1.5 x R_{eH} (min.)	1.25	16	8
B500DWR	500			13	
B500D-R	500	1.2 x R_{eH} (min.)			

Please Note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.



Client: Engr. Md. Tanjiful Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil; 29/12/2025
BRTC Ref: 1103-70091/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

07 January 2026
MME 0503/2025-2026



16nbpuvagr

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R _{el}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R _m	Average Tensile Strength	R _m / R _{el}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A _{gt}	Bend Test
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)	%	%	%	(Separate Sample)	
GPH QUANTUM B600D-R 12	1	12	11.91	0.875	0.875	71.93	636	635 (92,000)	94.13	832	830 (120,500)	1.31	22	21	10	Satisfactory
	2	12	11.92	0.875		72.29	639		93.57	827		1.29	19		10	Satisfactory
	3	12	11.91	0.875		71.36	631		94.03	831		1.32	23		10	Satisfactory

Test Performed by

Mr. Humayun Kabir
07/01/2026

Mr. Humayun Kabir
Assistant Professor

Countersigned by

Dr. H. M. Mamun Al Rashed
07 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.617	0.888	1.58	2.47	3.85	4.84	6.31
Permissible Variation of Nominal Mass per Unit Length, %	+8	+8	+8	+5	+5	+5	+4	+4	+4
Nominal Cross-Sectional Area, mm ²	28.5	50.3	78.5	113	201	314	491	616	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R _{el}		R _m /R _{el}	A	A _{gt}
	MPa			%	%
	Minimum	Maximum	Minimum	Minimum	Minimum
H400C-R / B400CWR	400	---	1.15	14	7
B500C-R / B500CWR	500	---		10	
B600C-R	600	---	1.25	17	8
B400DWR	400	1.3 x R _{el} (min.)		16	
B420DWR	420			13	
B500DWR	500	10			
B600D-R	600	1.2 x R _{el} (min.)	10		

Please Note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.



Client: Engr. Md. Tanjidul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil; 29/12/2025
BRTC Ref: 1103-70092/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

07 January 2026
MME 0504/2025-2026



wz2a7u55a7x

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R _H	Average Upper Yield Strength	Tensile Load	Tensile Strength, R _m	Average Tensile Strength	R _m / R _{elT}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A _{gt}	Bend Test
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%	(Separate Sample)
GPH QUANTUM B600D-R 16	1	16	15.99	1.575	1.576	128.25	638	638 (92,500)	167.06	831	831 (120,500)	1.30	22	21	10	Satisfactory
	2	16	15.99	1.575		128.90	641		167.27	832		1.30	20		10	Satisfactory
	3	16	15.99	1.576		127.86	636		166.69	829		1.30	20		10	Satisfactory

Test Performed by

Mr. Humayun Kabir
07/01/2026

Mr. Humayun Kabir
Assistant Professor

Countersigned by

Dr. H. M. Mamun Al Rashed
07 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	25	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.597	0.818	1.58	2.47	3.85	4.84	6.51	9.89
Permissible Variation of Nominal Mass per Unit Length, %	±4	±8	±6	±6	±5	±5	±4	±4	±4	±4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R _H		R _m /R _{elT}	A	A _{gt}
	MPa		%	%	%
	Minimum	Maximum	Minimum	Minimum	Minimum
B400C-R / B490CWR	400	---	1.15	14	7
B500C-R / B590CWR	500	---		10	
E600C-R	600	---		17	
B400DWR	400	1.3 x R _{elT} (min.)	1.25	16	8
9420DWR	420			13	
B500DWR	500	1.2 x R _{elT} (min.)		10	
B600D-R	600				

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Client: Engr. Md. Tanjidul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil; 29/12/2025
BRTC Ref: 1103-70093/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

07 January 2026
MME 0505/2025-2026



0lrtjuxxavy

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R _{uH}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R _m	Average Tensile Strength	R _{uH} / R _{uT}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A _{gt}	Bend Test
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%	(Separate Sample)
GPH QUANTUM B600D-R 20	1	20	19.98	2.461	2.460	201.02	640	641 (93,000)	255.96	815	815 (118,000)	1.27	17	19	10	Satisfactory
	2	20	19.97	2.459		201.24	641		256.00	815		1.27	20		10	Satisfactory
	3	20	19.98	2.461		201.49	641		255.95	815		1.27	21		12	Satisfactory

Test Performed by

Mr. Humayun Kabir
07/01/2026

Mr. Humayun Kabir
Assistant Professor

Countersigned by

Dr. H. M. Mamun Al Rashied
07 JAN 2026

Dr. H. M. Mamun Al Rashied
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.617	0.888	1.58	2.47	3.85	4.84	6.31	9.86
Permissible Variation of Nominal Mass per Unit Length, %	±5	±8	±6	±6	±5	±5	±4	±4	±4	±4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R _{uH}		R _{uH} /R _{uT}	A	A _{gt}
	MPa		%	%	%
	Minimum	Maximum	Minimum	Minimum	Minimum
B436C-R / B400CWR	400	---	1.13	14	7
B560C-R / B500CWR	500	---		10	
B660C-R	600	---	1.25	17	8
B400DWR	400	1.3 x R _{uH} (min.)		16	
B470DWR	470	1.3 x R _{uH} (min.)		13	
B500DWR	500	1.2 x R _{uH} (min.)		10	
B600D-R	600	1.2 x R _{uH} (min.)			

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Client: Engr. Md. Tanjidul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil; 29/12/2025
BRTC Ref: 1103-70094/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

07 January 2026
MME 0506/2025-2026



qrghvuqqaew

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R_{eH}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R_m	Average Tensile Strength	R_m/R_{eH}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A_{gt}	Bend Test
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%	(Separate Sample)
GPH QUANTUM B600D-R 25	1	25	24.90	3.821	3.820	310.10	632	633 (92,000)	394.72	804	804 (116,500)	1.27	18	18	11	Satisfactory
	2	25	24.88	3.817		311.21	634		394.68	804		1.27	19		10	Satisfactory
	3	25	24.90	3.821		310.92	633		394.61	804		1.27	18		11	Satisfactory

Test Performed by

Mr. Humayun Kabir
07/01/2026

Mr. Humayun Kabir
Assistant Professor

Countersigned by

Dr. H. M. Mamun Al Rashid
07 JAN 2026

Dr. H. M. Mamun Al Rashid
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.617	0.888	1.58	2.17	3.85	4.84	6.31	9.86
Permissible Variation of Nominal Mass per Unit Length, %	+8	+8	+6	+6	+5	+5	+4	+4	+4	+4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R_{eH}		R_{eH}/R_{eH}	A	A_g
	MPa			%	%
	Minimum	Maximum	Minimum	Minimum	Minimum
B400C-R / B400CWR	400	---	1.15	14	7
B500C-R / B500CWR	500	---		10	
B600C-R	600	---	1.25	17	8
B400DWR	400	1.3 x R_{eH} (min.)		16	
B420DWR	420			13	
B500DWR	500	10			
B600D-R	600	1.2 x R_{eH} (min.)	10		

Please Note: The client supplied the sample and the result given here with corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.



Client: Engr. Md. Tanjidul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil: 29/12/2025
BRTC Ref: 1103-70095/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

07 January 2026
MME 0507/2025-2026



npkh4u00a6e

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R_{eH}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R_m	Average Tensile Strength	R_m/R_{eH}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A_{gt}	Bend Test
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%	(Separate Sample)
GPH QUANTUM B600D-R 32	1	32	31.98	6.304	6.298	510.36	635	635 (92,000)	649.03	807	808 (117,000)	1.27	17	17	10	Satisfactory
	2	32	31.96	6.297		509.63	634		650.17	808		1.27	17		12	Satisfactory
	3	32	31.95	6.293		511.30	636		650.94	809		1.27	17		9	Satisfactory

Test Performed by

[Signature]
07/01/2026

Mr. Humayun Kabir
Assistant Professor

Countersigned by

[Signature] 07 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Bar Designation, Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.295	0.617	0.888	1.58	2.47	3.75	4.84	6.31	9.86
Permissible Variation of Nominal Mass per Unit Length, %	+8	+8	+5	+5	+5	+5	+4	+4	+4	+4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R_{eH}		R_m/R_{eH}	A	A_{gt}
	MPa		%	%	%
	Minimum	Maximum	Minimum	Minimum	Minimum
B400C-R / B400CWR	400	---	1.15	14	7
B500C-R / B500CWR	500	---			
B600C-R	600	---	1.25	10	8
P400DWR	400	1.3 x R_{eH} (min.)		17	
P420DWR	420			16	
P500DWR	500	13			
B600D-R	600	1.2 x R_{eH} (min.)	10		

Please Note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.



Client: Engr. Md. Tanjidaul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil; 29/12/2025
BRTC Ref: 1103-70075/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

13 January 2026
MME 0495/2025-2026



v5zs2u11a3q

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R _{el1}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R _m	Average Tensile Strength	R _m / R _{el1}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A _{gt}	Bend Test	Re Bend Test
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%	Separate Sample	Separate Sample
B500DWR 8/ GPH	1	8	7.98	0.393	0.393	28.50	567	567 (82,000)	37.59	748	747 (108,500)	1.32	21	22	12	Satisfactory	Satisfactory
	2	8	7.98	0.393		28.69	571		37.71	750		1.31	20		15	Satisfactory	Satisfactory
	3	8	7.98	0.393		28.29	563		37.39	744		1.32	24		13	Satisfactory	Satisfactory

Test Performed by

Handwritten signature

Dr. Md. Muktadir Billah
Professor

Countersigned by

Handwritten signature 13 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.393	0.617	0.888	1.58	2.47	3.85	4.84	6.31	9.86
Permissible Variation of Nominal Mass per Unit Length, %	+8	+8	+6	+6	+5	+5	+4	+4	+4	+4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R _{el1}		R _m /R _{el1}	A	A _{gt}
	MPa				
	Minimum	Maximum	Minimum	Minimum	Minimum
B400C-R / B400CWR	400	---	1.15	14	7
B500C-A / B500CWR	500	---		10	
B500C-Z	600	---		17	
B400DWR	400	1.5 x R _{el1} (min.)	1.25	16	8
B420DWR	420			13	
B500DWR	500			10	
B600D-R	600	1.2 x R _{el1} (min.)		10	

Please Note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.



Client: Engr. Md. Tanjidul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil; 29/12/2025
BRTC Ref: 1103-76079/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

12 January 2026
MME 0496/2025-2026



grpizukkan0

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R _{uH}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R _m	Average Tensile Strength	R _m / R _{uH}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A _{gt}	Bend Test Separate Sample	Re Bend Test Separate Sample
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%		
B500DWR 10/ GPH QUANTUM	1	10	10.03	0.620	0.619	42.35	539	536 (77,500)	56.52	720	718 (104,000)	1.34	25	24	14	Satisfactory	Satisfactory
	2	10	10.02	0.619		42.44	540		56.50	719		1.35	21		12	Satisfactory	Satisfactory
	3	10	10.02	0.619		41.62	530		56.15	715		1.35	27		14	Satisfactory	Satisfactory

Test Performed by

Md. Muktaadir Billah
12/01/2026
Dr. Md. Muktaadir Billah
Professor

Countersigned by

H. M. Mamun Al Rashed
12 JAN 2026
Dr. H. M. Mamun Al Rashed
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.617	0.889	1.56	2.47	3.85	4.84	9.86
Permissible Variation of Nominal Mass per Unit Length, %	±3	±3	±6	±6	±5	±5	±4	±4	±4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R _{uH}		R _{uH} /R _{uT}	A	A _g
	MPa			%	%
	Minimum	Maximum	Minimum	Minimum	Minimum
B400C-R / B400CWR	400	---	1.15	14	7
B500C-R / B500CWR	500	---			
B600C-R	600	---		10	
B400DWR	400	1.3 x R _{uH} (min.)	1.25	17	8
B420DWR	420			16	
B500DWR	500	13			
B600D-R	600	1.2 x R _{uH} (min.)		10	

Please Note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.



Client: Engr. Md. Tanjiddul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil; 29/12/2025
BRTC Ref: 1103-70082/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

12 January 2026
MME 0497/2025-2026



zgqieullaxv

TEST OF DEFORMED M.S. REBAR (Test Method-BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R _{eH}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R _m	Average Tensile Strength	R _m / R _{eH}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A _{gt}	Bend Test Separate Sample	Re Bend Test Separate Sample
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%		
B500DWR 12/ GPH QUANTUM	1	12	12.01	0.890	0.889	60.90	538	541 (78,500)	79.28	701	702 (102,000)	1.30	25	24	14	Satisfactory	Satisfactory
	2	12	12.01	0.890		61.54	544		79.65	704		1.29	24		15	Satisfactory	Satisfactory
	3	12	12.00	0.888		61.08	540		79.22	700		1.30	24		14	Satisfactory	Satisfactory

Test Performed by

Md. Muktaoir Billah 12/01/26

Dr. Md. Muktaoir Billah
Professor

Countersigned by

H. M. Mamun Al Rashed 12 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.617	0.888	1.58	2.47	3.85	4.84	6.31	9.86
Permissible Variation of Nominal Mass per Unit Length, %	±8	±8	±6	±6	±5	±5	±4	±4	±4	±4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R _m		R _m /R _{eH}	A	A _{gt}
	MPa		%	%	%
	Minimum	Maximum	Minimum	Minimum	Minimum
B400C-R / B400CWR	400	—	1.15	14	7
B500C-R / B500CWR	500	—		10	
B600C-R	600	—	1.25	17	8
B400DWR	400	1.3 x R _m (min.)		16	
B420DWR	420			13	
B500DWR	500	1.2 x R _m (min.)		10	
B600D-R	600		10		

Please Note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.



Client: Engr. Md. Tanjidul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil; 29/12/2025
BRTC Ref: 1103-70085/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

12 January 2026
MME 0498/2025-2026



6nliru11ald

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R _{0.2}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R _m	Average Tensile Strength	R _m / R _{0.2}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A _{gt}	Bend Test Separate Sample	Re Bend Test Separate Sample
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%		
B500DWR 16/ GPH QUANTUM	1	16	16.00	1.578	1.579	107.51	535	538 (78,000)	142.96	711	713 (103,500)	1.33	23	26	17	Satisfactory	Satisfactory
	2	16	16.01	1.579		108.40	539		143.54	714		1.32	30		17	Satisfactory	Satisfactory
	3	16	16.01	1.580		108.35	539		143.79	715		1.33	24		18	Satisfactory	Satisfactory

Test Performed by

Md. M. T. Billah 12/01/26

Dr. Md. Muktaadir Billah
Professor

Countersigned by

H. M. Mamun Al Rashed 12 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Page 1 of 1

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.617	0.888	1.38	2.47	3.85	4.84	6.31	9.86
Permissible Variation of Nominal Mass per Unit Length, %	±8	±8	±6	±6	±5	±5	±4	±4	±4	±4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R _{0.2}		R _m /R _{0.2}	A	A _{gt}
	MPa			%	%
B400C-R / B400CWR	400	---	1.15	14	7
B500C-R / B500CWR	500	---		17	
B600C-R	600	---		10	
B400DWR	400	1.5 x R _{0.2} (min.)	1.25	17	8
B420DWR	420			16	
B500DWR	500			13	
B600D-R	600	1.2 x R _{0.2} (min.)		10	

Please Note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.

020902



Client: Engr. Md. Tanjidul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil; 29/12/2025
ERTC Ref: 1103-70086/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

12 January 2026
MME 0499/2025-2026



160ipuvvagr

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R _{el}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R _m	Average Tensile Strength	R _m / R _{el}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A _{gt}	Bend Test Separate Sample	Re Bend Test Separate Sample
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%		
B500DWR 20/ GPH QUANTUM	1	20	19.99	2.463	2.464	171.84	547	547 (79,500)	223.92	713	712 (103,500)	1.30	22	24	13	Satisfactory	Satisfactory
	2	20	19.98	2.462		171.60	546		223.37	711		1.30	24		13	Satisfactory	Satisfactory
	3	20	20.01	2.468		172.37	549		223.87	715		1.30	25		12	Satisfactory	Satisfactory

Test Performed by

M. Billah 12/01/26

Dr. Md. Muktafir Billah
Professor

Countersigned by

H. Mamun 12 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.595	0.617	0.888	1.58	2.47	3.85	4.84	6.31	9.56
Permissible Variation of Nominal Mass per Unit Length, %	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R _{el}		R _m /R _{el}	A	A _{gt}
	MPa			%	%
	Minimum	Maximum	Minimum	Minimum	Minimum
B400C-R / B400CWR	400	---	1.15	14	7
B500C-R / B500CWR	500	---		10	
E600C-R	600	---		10	
B460DWR	400	1.5 x R _{el} (min.)	1.25	17	8
B420DWR	420			16	
B500DWR	500			13	
B500D-R	600	1.2 x R _{el} (min.)		10	

Please Note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.



Client: Engr. Md. Tanjidul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil: 29/12/2025
BRTC Ref: 1103-70087/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

12 January 2026
MME 0500/2025-2026



grrbzukkan0

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R _{el}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R _m	Average Tensile Strength	R _m / R _{el}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A _{gt}	Bend Test Separate Sample	Re Bend Test Separate Sample
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%		
B500DWR 25/ GPH QUANTUM	1	25	24.99	3.850	3.847	275.70	562	563 (81,500)	366.04	746	747 (108,500)	1.33	20	21	12	Satisfactory	Satisfactory
	2	25	24.97	3.845		276.01	562		366.52	747		1.33	21		13	Satisfactory	Satisfactory
	3	25	24.97	3.846		276.90	564		366.51	747		1.32	22		11	Satisfactory	Satisfactory

Test Performed by

Md. Muktadir Billah

Dr. Md. Muktadir Billah
Professor

Countersigned by

Hashed 12 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.617	0.888	1.58	2.47	3.85	4.84	6.31	9.86
Permissible Variation of Nominal Mass per Unit Length, %	±8	±8	±4	±6	±5	±4	±4	±4	±4	±4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Please Note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.

Steel Grade	Upper Yield Strength		Ductility Properties		
	R _{el}		R _m /R _{el}	A	A _{gt}
	MPa		%	%	%
	Minimum	Maximum	Minimum	Minimum	Minimum
B400C-R / B400DWR	460	---	1.15	14	7
B500C-R / B500DWR	500	---		10	
B600C-R	600	---		17	
B400DWR	400	1.3 x R _{el} (min.)	1.25	16	8
B420DWR	420			13	
B500DWR	500			10	
B600D-R	600	1.2 x R _{el} (min.)		10	



Client: Engr. Md. Tanjidul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil: 29/12/2025
BRTC Ref: 1103-70089/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

12 January 2026
MME 0501/2025-2026



zgwbeullaxv

TEST OF DEFORMED M.S. REBAR (Test Method BLS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R _{el}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R _m	Average Tensile Strength	R _m / R _{el}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A _{gt}	Bend Test Separate Sample	Re Bend Test Separate Sample
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%		
B500DWR 32/ GPH QUANTUM	1	32	31.88	6.268	6.272	423.12	526	536 (77,500)	563.48	701	707 (102,500)	1.33	19	19	10	Satisfactory	Satisfactory
	2	32	31.92	6.280		439.26	546		574.60	714		1.31	19		10	Satisfactory	Satisfactory
	3	32	31.88	6.268		430.44	535		568.53	707		1.32	20		12	Satisfactory	Satisfactory

Test Performed by

M.B. Billah 12/01/26

Dr. Md. Muktadir Billah
Professor

Countersigned by

H. M. Mamun Al Rashed 12 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.617	0.888	1.58	2.47	3.85	4.84	6.31	9.86
Permissible Variation of Nominal Mass per Unit Length, %	±8	±8	±6	±6	±2	±5	±4	±4	±4	±4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R _{el}		R _m /R _{el}	A	A _{gt}
	MPa		%	%	%
	Minimum	Maximum	Minimum	Minimum	Minimum
B400C-R / B400 WR	400	---	1.15	14	7
B500C-R / B500 WR	500	---		10	
B600C-R	600	---	1.25	17	8
B400DWR	400	1.3 × R _{el} (min.)		16	
B420DWR	420	1.3 × R _{el} (min.)		13	
B500DWR	500	1.2 × R _{el} (min.)		10	
B600D-R	600	1.2 × R _{el} (min.)			

Please Note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.



Client: Engr. Md. Tanjidl Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil; 29/12/2025
BRTC Ref: 1103-70065/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

13 January 2026
MME 0489/2025-2026



xp4hruggav9

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R_{eH}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R_m	Average Tensile Strength	R_m/R_{eH}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A_{gt}	Bend Test	Re Bend Test
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%	Separate Sample	Separate Sample
GPH B420 DWR 10	1	10	9.97	0.613	0.613	36.31	465	468 (68000)	53.30	683	684 (99000)	1.47	25	26	14	Satisfactory	Satisfactory
	2	10	9.97	0.612		36.68	470		53.39	684		1.46	27		15	Satisfactory	Satisfactory
	3	10	9.98	0.614		36.60	468		53.59	685		1.46	25		16	Satisfactory	Satisfactory

Test Performed by

MH 13/1/26

Dr. Takian Fakhru
Associate Professor

Test Performed by

H. M. Mamun Al Rashed 13/01/2026

Dr. H. M. Mamun Al Rashed
Professor

Countersigned by

H. M. Mamun Al Rashed 13 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.617	0.888	1.58	2.47	3.85	4.84	6.31	9.86
Permissible Variation of Nominal Mass per Unit Length, %	±8	±8	±6	±6	±5	±5	±4	±4	±4	±4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R_{eH}		R_m/R_{eH}	A	A_{gt}
	MPa			%	%
B400C-R / B400CWR	400	---	1.15	14	7
B500C-R / B500CWR	500	---		10	
B600C-R	600	---		10	
B400DWR	400	1.3 x R_{eH} (min.)	1.25	17	8
B420DWR	420			16	
B500DWR	500			13	
B600D-R	600	1.2 x R_{eH} (min.)		10	

Please Note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.



Client: Engr. Md. Tanjidul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil; 29/12/2025
BRTC Ref: 1103-70067/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

13 January 2026
MME 0490/2025-2026



97nh2uzzal2

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R _{el}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R _m	Average Tensile Strength	R _m / R _{el}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A _{gt}	Bend Test	Re Bend Test
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%	Separate Sample	Separate Sample
GPH B420 DWR 12	1	12	11.98	0.885	0.886	52.70	467	465 (67500)	74.43	660	660 (95000)	1.41	25	26	17	Satisfactory	Satisfactory
	2	12	11.99	0.886		52.56	466		74.53	660		1.42	26		16	Satisfactory	Satisfactory
	3	12	11.99	0.886		52.03	461		74.45	660		1.43	26		14	Satisfactory	Satisfactory

Test Performed by

M 13/1/26

Dr. Takian Fakhru
Associate Professor

Test Performed by

Rashed 13/01/2026

Dr. H. M. Mamun Al Rashed
Professor

Countersigned by

Rashed 13 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.617	0.888	1.55	2.47	3.85	4.84	6.31	9.85
Permissible Variation of Nominal Mass per Unit Length, %	+8	+8	+6	+6	+5	+5	+4	+4	+4	+4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R _{el}		R _m /R _{el}	A	A _{gt}
	MPa		%	%	%
B400C-R / B400CWR	400	---	1.15	14	7
B500C-R / B500CWR	500	---		10	
B600C-R	600	---		10	
B420DWR	400	1.3 x R _{el} (min.)	1.25	17	8
B420DWR	420			16	
B500DWR	500			13	
B600D-R	600	1.2 x R _{el} (min.)	10		

Please Note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.



Client: Engr. Md. Tanjidul Islam
Sr. Manager, Quality Control
GPH Spat Limited

Client's Ref: Nil; 29/12/2025
ERTC Ref: 1103-70068/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

13 January 2026
MME 0491/2025-2026



yl4h2u33al3

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R_{eH}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R_m	Average Tensile Strength	R_m/R_{eH}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A_g	Elongation at Maximum Force, A_{gt}	Bend Test	Re Bend Test
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%	Separate Sample	Separate Sample
GPH B420 DWR 16	1	16	15.97	1.572	1.577	94.27	471	472 (68500)	135.53	677	679 (98500)	1.44	25	27	17	Satisfactory	Satisfactory
	2	16	15.97	1.572		94.27	471		136.33	681		1.45	28		16	Satisfactory	Satisfactory
	3	16	16.04	1.586		95.59	473		137.16	679		1.43	28		16	Satisfactory	Satisfactory

Test Performed by

Md 13/1/26

Dr. Takian Fakhru
Associate Professor

Test Performed by

Hashed 13/01/2026

Dr. H. M. Mamun Al Rashed
Professor

Countersigned by

Hashed 13 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.617	0.888	1.58	2.47	3.85	4.84	6.21	9.86
Permissible Variation of Nominal Mass per Unit Length, %	±8	±8	±6	±6	±5	±5	±4	±4	±4	±4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R_{eH}		R_m/R_{eH}	A	A_g
	MPa			%	%
B400C-R / B400CWR	400	---	1.15	14	7
B500C-R / B500CWR	500	---		10	
B600C-R	600	---	1.25	17	8
B400DWR	400	1.3 x R_{eH} (min.)		16	
B420DWk	420			13	
B500DWR	500	1.2 x R_{eH} (min.)		10	
B600D-R	600			10	

Please Note: The client supplied the sample and the result given here with corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.



Client: Engr. Md. Tanjidul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil; 29/12/2025
BRTC Ref: 1103-70070/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

13 January 2026
MME 0492/2025-2026



40nfeu33aqw

TEST OF DEFORMED M.S. REBAR (Test Method BES ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R_{eH}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R_m	Average Tensile Strength	R_m/R_{eH}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A_{gt}	Bend Test	Re Bend Test
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%	Separate Sample	Separate Sample
GPH B420 DWR 20	1	20	19.97	2.458	2.462	149.02	476	478 (69500)	218.60	698	699 (101500)	1.47	27	28	14	Satisfactory	Satisfactory
	2	20	19.98	2.462		150.75	481		219.78	701		1.46	29		15	Satisfactory	Satisfactory
	3	20	20.00	2.466		149.59	476		219.23	698		1.47	28		18	Satisfactory	Satisfactory

Test Performed by

[Signature] 13/1/26

Dr. Takian Fakhru
Associate Professor

Test Performed by

[Signature] 13/01/2026

Dr. H. M. Mamun Al Rashed
Professor

Countersigned by

[Signature] 13 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.617	0.888	1.58	2.47	3.85	4.84	6.31	9.86
Permissible Variation of Nominal Mass per Unit Length, %	±8	±8	±6	±6	±5	±5	±4	±4	±4	±4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R_{eH}		R_m/R_{eH}	A	A_{gt}
	MPa		%	%	
B400C-R / 1-400CWR	400	---	1.15	14	7
B500C-R / 1-500CWR	500	---		10	
B600C-R	600	---		10	
B400DWR	400	1.3 x R_{eH} (min.)	1.25	17	8
B420DWic	420			16	
B500DWR	500			13	
B600D-R	600	1.2 x R_{eH} (min.)	10		

Please Note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the identification, if any, of the sample.



Client: Engr. Md. Tanjidul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil; 29/12/2025
BRTC Ref: 1103-70071/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

13 January 2026
MME 0493/2025-2026



dprseuggal4

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R_{eH}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R_m	Average Tensile Strength	R_m/R_{eH}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A_{gt}	Bend Test	Re Bend Test
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%	Separate Sample	Separate Sample
GPH B420 DWR 25	1	25	24.98	3.846	3.850	233.34	476	473 (68,500)	335.31	684	681 (98,500)	1.44	22	22	15	Satisfactory	Satisfactory
	2	25	25.00	3.852		230.57	470		332.20	677		1.44	20		17	Satisfactory	Satisfactory
	3	25	25.00	3.853		232.46	474		334.70	682		1.44	23		17	Satisfactory	Satisfactory

Test Performed by

MA 13/1/26

Dr. Takian Fakhru
Associate Professor

Test Performed by

Hasnud 13/01/2026

Dr. H. M. Mamun Al Rashed
Professor

Countersigned by

Hasnud 13 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.617	0.888	1.58	2.47	3.85	4.84	6.31	9.86
Permissible Variation of Nominal Mass per Unit Length, %	+8	+8	+5	+6	+5	+5	+4	+4	+4	+4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R_{eH}		R_m/R_{eH}	A	A_{gt}
	MPa			%	%
B400C-R / B400CWR	400	---	1.15	14	7
B500C-R / B500CWR	500	---		10	
B600C-R	600	---		10	
B400DWR	400	1.3 x R_{eH} (min)	1.25	17	8
B420DWR	420			16	
B500DWR	500			13	
B600D-R	600	1.2 x R_{eH} (min)		10	

Please Note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.



Client: Engr. Md. Tanjidul Islam
Sr. Manager, Quality Control
GPH Ispat Limited

Client's Ref: Nil; 29/12/2025
BRTC Ref: 1103-70074/MME/2025-26; 29/12/2025
Sample Condition: Not Sealed

13 January 2026
MME 0494/2025-2026



jyptkukkaqj

TEST OF DEFORMED M.S. REBAR (Test Method BDS ISO 6935-2 2021)

Frog Mark/ Identification	Sample No.	Bar Designation/ Nominal Diameter, d	Actual Diameter	Mass per Unit Length	Average Unit Weight	Upper Yield Load	Upper Yield Strength, R _{el}	Average Upper Yield Strength	Tensile Load	Tensile Strength, R _m	Average Tensile Strength	R _m / R _{el}	Elongation after Fracture (G.L. 5d)	Average Elongation after Fracture, A	Elongation at Maximum Force, A _{gt}	Bend Test	Re Bend Test
		mm	mm	kg/m	kg/m	kN	MPa	MPa (psi)	kN	MPa	MPa (psi)		%	%	%	Separate Sample	Separate Sample
GPH B420 DWR 32	1	32	32.01	6.319	6.299	381.53	474	474 (68500)	547.59	680	688 (100000)	1.44	31	28	19	Satisfactory	Satisfactory
	2	32	31.95	6.294		380.84	475		563.72	703		1.48	24		21	Satisfactory	Satisfactory
	3	32	31.93	6.285		378.80	473		544.74	680		1.44	28		18	Satisfactory	Satisfactory

Test Performed by

MJ 13/1/26

Dr. Takian Fakhru
Associate Professor

Test Performed by

Hashed 13/01/2026

Dr. H. M. Mamun Al Rashed
Professor

Countersigned by

Hashed 13 JAN 2026

Dr. H. M. Mamun Al Rashed
Professor and Head

Bar Designation Number/Nominal Bar Diameter, mm	6	8	10	12	16	20	25	28	32	40
Nominal Mass per Unit Length, kg/m	0.222	0.395	0.617	0.888	1.58	2.47	3.85	4.84	6.31	9.86
Permissible Variation of Nominal Mass per Unit Length, %	±8	±8	±6	±6	±5	±5	±4	±4	±4	±4
Nominal Cross-Sectional Area, mm ²	28.3	50.3	78.5	113	201	314	491	616	804	1257

Steel Grade	Upper Yield Strength		Ductility Properties		
	R _{el}		R _m /R _{el}	A	A _{gt}
	MPa			%	%
	Minimum	Maximum	Minimum	Minimum	Minimum
B400C-R / B400CWR	400	---	1.15	14	7
B500C-R / B500CWR	500	---		10	
B600C-R	600	---	1.25	17	8
B400DWR	400	1.3 x R _{el} (min.)		16	
B420DWR	420			13	
B500DWR	500	1.2 x R _{el} (min.)		10	
B600D-R	600			10	

Please Note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.