



BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)

DEPARTMENT OF CIVIL ENGINEERING

STRENGTH OF MATERIALS LABORATORY

Mobile: 01819557964; PABX: (8802) - 55167100, 55167228-57 Ext. 7226, Info: <http://brtc.ce.buet.ac.bd/#/home>, Report verification: <http://verify.ce.buet.ac.bd>

5 (i) of 5



TEST OF DEFORMED M.S. BARS [BDS ISO 6935-2:2016]

Sent by: Eng. Md. Maksudul Karim, General Manager (Plant)

Shahriar Steel Mills Limited, Konapara, Jatrabari, Dhaka.

Project: ----

BRTC No.: 1103-29646/CE/24-25; Dt. 25/8/2024

Ref.: Letter; Dt. 25/8/2024

Date of Test: 27/8/2024

Samples were received in UNSEALED condition.

Sl. No.	Frog Mark / Identification	Nominal dia.	Actual dia.	Mass Per Unit Length	Average Mass Per Unit Length	Yield or Proof Load	Yield or Proof Strength R_{eH}	Average Yield Strength, R_{eH}	Tensile Load	Tensile Strength R_m	Average Tensile Strength, R_m	R_m/R_{eH}	Total Elongation (%) (G.Length = 5d)	Average Total Elongation (%)	Bend Test (Separate samples)	Rebend Test
		mm	mm	kg/m	kg/m	kN	MPa	MPa	kN	MPa	MPa					
1	SSRM B420 DWR	10	10.0	0.613	0.611	36.1	457	457	50.7	640	640	1.40	32	33	Satisfactory	-
2	SSRM B420 DWR	10	9.9	0.610		36.6	463		50.7	640			32		Satisfactory	-
3	SSRM B420 DWR	10	9.9	0.610		35.7	452		50.2	635			34		Satisfactory	-
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BDS ISO 6935-2:2016 Weight Requirements, Nominal Area etc. (Table 2).

Nominal bar dia., mm	6	8	10	12	14	16	20	22*	25	28	32	40	50
Nominal cross sectional area, sq.mm	28.3	50.3	78.5	113	154	201	314	380	491	616	804	1257	1964
Nominal mass per unit length	0.222	0.395	0.616	0.887	1.21	1.58	2.46	2.98	3.85	4.84	6.31	9.87	15.42
Permissible deviation, %	±8	±8	±6	±6	±5	±5	±5	±5	±4	±4	±4	±4	±4

*22mm dia. bar is not covered in BDS ISO 6935-2:2016. Its properties are derived following the principle used for other bar sizes.

Actual diameter of bars are shown for informative purpose only. It is not a requirement of BDS ISO 6935-2:2016.

Actual diameter is the diameter of a perfectly round plain bar having same mass per unit length.

BDS ISO 6935-2 Tensile Requirements for Common Steel Grades

Steel Grade	Yield Strength, R_{eH} , MPa		Ductility Properties		
	Min.	Max.	R_m/R_{eH} min.	Elongation, % (min.)	
B400C-R	400	--	1.15	14	7
B400CWR	400	--	1.15	14	7
B500C-R	500	--	1.15	14	7
B500CWR	500	--	1.15	14	7
B600C-R	600	--	1.15	10	7
B450CWR	450	1.25 R_{eH} (min.)	1.15	--	7.5
B400DWR	400	1.3 R_{eH} (min.)	1.25	17	8
B420DWR	420	1.3 R_{eH} (min.)	1.25	16	8
B500DWR	500	1.3 R_{eH} (min.)	1.25	13	8

Conversion factor: 1.0 MPa = 1.0 N/mm² = 145 psi. Strengths are based on nominal area.



PJZ8DP3dP

Countersigned by:

Prof. Dr. Hasib Mohammed Ahsan, Test-in-Charge

Dept. of Civil Engg., BUET, Dhaka-1000, Bangladesh

28 August 2024

Test performed by:

Dr. Munaz Ahmed Noor

Professor, Dept. of Civil Engg., BUET



Important Note: Samples as supplied to us have been tested. BRTC does not have any responsibility as to the representative character of the samples required to be tested. It is recommended that the samples are sent in a secure and sealed cover/packet/container under the signature of a competent authority. In order to avoid fraudulent fabrication of test results, this report has been printed on a security paper. It is also recommended that the test results be collected by a duly authorized person.

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		mm	mm	kg/m	kg/m	kN	MPa	MPa	kN	MPa	MPa					
1	SSRM B420 DWR	16	16.1	1.588	1.585	92.6	460	462	132	655	660	1.43	19	19	Satisfactory	-
2	SSRM B420 DWR	16	16.0	1.583		92.6	460		132	655			19		Satisfactory	-
3	SSRM B420 DWR	16	16.0	1.583		93.5	465		133	660			19		Satisfactory	-
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BUETCE 0490681

BUET Logo: A circular emblem with a gear-like border. Inside the circle, there is a stylized building or structure. The text "Department of Civil Engineering" is written along the top inner edge, and "BUET, Dhaka-1000, Bangladesh" is written along the bottom inner edge.

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