

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)

DEPARTMENT OF CIVIL ENGINEERING

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

Bureau of Research, Testing & Consultation

1 of 2

STRENGTH OF MATERIALS LABORATORY

TEST OF DEFORMED M.S. BARS [ASTM A 615M-16]

Sent by: Md. Moniruzzaman, Deputy General Manager, Sales & Marketing

Elite Iron & Steel Ind. Ltd., Bade Kalmeswar, Board Bazar, Joydebpur, Gazipur.

Project: / - - -

BRTC No.: 1103-33194/CE/24-25; Dt. 8/10/2024

Ref.: Letter; Dt. 8/10/2024 Date of Test: 9/10/2024

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

Samples were received in UNSEALED condition.

SI. No.	Frog Mark / Identification	Bar Desig./ Nominal dia.	Actual bar dia.	Unit Weight	Average Unit Weight	Yield or Proof Load	Yield or Proof Strength	Average Yield or Proof Strength (YS)	Tensile Load	Tensile Strength	Average Tensile Strength (TS)	TS/YS	Elongation (%) (G. length =	Average Elongation (%)	Bend Test (Seperate samples)
111111111111111111111111111111111111111		///.mm	////mm///	kg/m//	kg/m	kN	MPa	MPa	kN	MPa	MPa		200 mm)		
1,1,1,1	ELITE SUPER POWER EIS B500 DWR		15.8	1.541		90.9	452	•	121	605	650		16	1	Satisfactory
2	ELITE SUPER POWER EIS B500 DWR		15.9	1.551	1.565	101	505	-	131	650	(94000 psi)	-	15	15	Satisfactory
3	ELITE SUPER POWER EIS B500 DWR	16	16.1	1.602	1442341111	115	575		140	695			14		Satisfactory
MHHIM		///// / //////	(/////-	//////=//////	7884111111117	9696 4 696		\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		-	-		////// - //////		
marin.	[0.00000000000000000000000000000000000		(((///	/////-//////	VIIII - 11233	(K) (S . 52.8)		\$\$\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	26/11/7/1////	_	-		- 100	_	100000
000-00	0.000.000.000.000.0040.000.000.000.000		()////4//////		94111111111111111111111111111111111111	Madatatati	1/1/2-	16.0ks.0111k=34=3	3(53)(4)(1)(1)				14.500 <u>-</u> 116.600		
OMENIA.	PLANTING BERTARA BARANTAN BERTARA BARANTAN BARANTAN BARANTAN BARANTAN BARANTAN BARANTAN BARANTAN BARANTAN BARA	11111114111111	DOMESTICAL	mmini-niku	[[]][[]][][][][][][][][][][][][][][][][]	લ્લું હતું કહ્યું કે કુલ્લું કહ્યું છે. જો	Weller -	\$946402\Sektral	લહલોલામામા	Miller - Land	00000002000000				
-			-	- 400	2111111 <u>1</u> 49544	445.64.64.64.64.64.64.64.64.64.64.64.64.64.	111111	12 12 15 15 14 14 14 14 14 14 14 14 14 14 14 14 14	944121111	ara 1 -	[1] [1] <u>2</u> -1[1] [1]			_ \\ <u>_</u> \	_
		-	-	- 197		<u> </u>			77777	illin -					
-		-	-	m - m	855881111111	//////////////////////////////////////		<i>32/32/194</i> 44///////	7/////4////	manii 4) honii		100000	mmen <u>a</u> mine		andra <u>e</u> grani
11/11/11/11		100 -000	-	-	Millinder	<u> Ardrājalia</u>			///////////////////////////////////////	97777771111				16660020000	
		-	1000	((WATER A			///////////////////////////////////////	(((,),),),(_(,),),((,),((,),),((,),),((,),),((,),),((,),),((,),),((,),((,),),((,),),((,),),((,),),((,),),((,),),((,),),((,					onedenin <u>a</u> idtenidi
			-		2//////////////////////////////////////	33,3104		2323 <u>-</u> 377111	1111111211116	////////	(//////// <u>-</u> ////////////////////////////		//////////////////////////////////////		0000000200000
	<u>-</u>	1111	-					-	///// <u>-</u> 27888				100000		777797772777777
111121111	-	-		- TOTAL	11 March	<i>111177333</i>			1/31/2/	<u>u</u>	V/////////////////////////////////////				dillillilli <u>dillillilli</u>

ASTM A615M-16 Weight Requirements and Nominal Area of bars (Table A1.1)

Bar desig_/Nominal dia., mm 8 10 12 16 20 22 25 28 32 36 40 50 60 Nominal area, sq.mm 50.3 79 113 201 314 380 491 616 804 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 and 22m dia. bars are derived based on principle follwed for other sizes in Table A1.1

Actual dia. and TSYS 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, %	anninininininininininininininininininin	dinininin	arianina.		
Bar Designation No.					
10, 12, 16, 20	9	7	7		
25, 22	8	7	7		
28, 32, 36, 40, 50, 60	7	6	6		

Countersigned by:

Prof. Dr. Hasib Mohammed Ahsan, Test-in-Charge Dept. of Civil Engg., BUET, Dhaka-1000, Bangladesh Manhama 09 Oct

09 October 2024

Test performed by: Dr. M. Habibur Rahman

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 fradulent 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.

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)

DEPARTMENT OF CIVIL ENGINEERING

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

Bureau of Research, Testing & Consultation

STRENGTH OF MATERIALS LABORATORY

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

Sent by: Md. Moniruzzaman, Deputy General Manager, Sales & Marketing

Elite Iron & Steel Ind. Ltd., Bade Kalmeswar, Board Bazar, Joydebpur, Gazipur,

Project: ----

BRTC No.: 1103-33194/CE/23-24; Dt. 8/10/2024

Ref.: Letter; Dt. 8/10/2024 Date of Test: 9/10/2024

Samples were received in UNSEALED condition.

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, ReH	Tensile Load	Tensile Strength	Average Tensile Strength, R m	R _m /R _{eH}	Total Elongation (%) (G.length	Average Total Elongation (%)	Bend Test	Rebend Test (Seperate samples)
HHAIIII		/// mm///	// mm	kg/m	kg/m	kN	MPa	MPa	kN	MPa	MPa		= 5d)	\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		Jumpies,
1	ELITE SUPER POWER EIS B500 DWR	16	15.8	1.541//	11118000		-		1111/21111	100000 <u>-</u> 00000		11/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1		410000000000000000000000000000000000000		Satisfactor
2	ELITE SUPER POWER EIS B500 DWR	16	15.9	1.551	1.565		-		mille	-		_		_ }		Satisfactor
3	ELITE SUPER POWER EIS B500 DWR	16	16.1	1.602			•	83.313		1111112					00000200000	Satisfactor
41151111			//////-/////	((((////2//////////////////////////////		Hill Free		adace	2(1)112/11/15	6/11/12/11/11/19	11/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1		2000/00/2000/00	CONTRACTOR OF THE PARTY OF THE	1000020000	
			//////	IIIII - Kuda	\\\\\\ - 867967	11/11/11		13132112	558 <u>017</u> 11111	386			T000 02 0000	<u> </u>		
1-1111	onombolica da la e ktronia di antio di H		7////4///4	11111114 11441	//////E38636A	33452556		<i>श्राक्षीति</i>	<u>eetea </u>	illide anim				- Table 1		
1-1		(0.001 - 0.000)	1/6/1/1/2/////	Hill Erradi	11111158455455455	111111111111111111111111111111111111111		25/3/10/2019	STATE STATE	Miserezonom		Maria (Maria Maria)			111111	•
-			00002000	1/11/18/44/1//	////ssy <u>s</u> ysys	71341 <u>3</u> 71767		Herly Berline	'''(''<u>1</u>''') 	HICKS TO THE			10.10.1. 			
				V2000				872 X 3403 000	Accorda com	11000			111111-11111	1	-	-
-				2940		HITTLE CHILL		977727777777	con co - con il	ETCONY			•			•
_			10.02000	2010					9999 5 999	<i> </i>			<u> </u>		-	-
U			CONTRACTOR OF THE		<i>\$0111111111111111111111111111111</i>		-24	& 12.7V//////	((((()	<i>μαιια</i>	40005	1/8/9 7 /11/1		13000 - 1000 L		
12110		ALCO A CONTRACTOR OF THE	LONG - 1100	1000 - 1000		7117.7		E/18/18/119/1	//////	<i> }} </i>		Magnifica	H(H)H(H)	gdiallinghill	BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB	ARRIGHT (FERREI)
11111		-	-	-/////	111111111111111111111111111111111111111				//////-////////////////////////////////	((((((),-)),))))			0.000000		1000.	9110000140000
			-		111111111	2112			//////	<u>//////</u>	-	/////-///	1(((()))		1///// - ///////	00000000 - 00000
11152711111111	935-2:2016 Weight Requirements, Nominal Area			(1111) - 111 //		23.711			9////4/3333	(//////2//////////		7//////////////////////////////////////	///////////////////////////////////////		10000120000	

*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	Yield S	trength, ReH, MPa	Ductiliy Properties					
Grade	Min.	Max.	Rm/ReH	Elongation, % (min.)				
			min.	Total	At Rm			
B400C-R	400	1111111111111111	1.15	14	7			
B400CWR	400	11//////////////	1.15	14	7			
B500C-R	500	A.	1.15	14	7			
B500CWR	500	11111112-11111111	1.15	14	7			
B600C-R	600		1.15	10	7			
B450CWR	450	1.25 R eH (min.)	1.15	111121111	7.5			
B400DWR	400	1.3 R at (min.)	1.25	17	8			
B420DWR	420	1.3 R eH (min.)	1.25	16	8			
B500DWR	500	1.3 R et (min.)	1.25	13	8			

Countersigned by:

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

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

A V Decay

09 October 2024

Test performed by: Dr. M. Habibur Rahman

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 fradulent 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.