BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET) DEPARTMENT OF CIVIL ENGINEERING

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

Testing & Consultation 1 of 5

STRENGTH OF MATERIALS LABORATORY

Sent by: Engr. Md. Maksudul Karim, General Manager TEST OF DEFORMED M.S. BARS [BDS ISO 6935-2:2016]

Shahriar Steel Mills Ltd., Konapara, Jatrabari, Dhaka

Project ---

Ref.: Letter; Dt. 3/12/2024 BRTC No.: 1103-37749/CE/24-25; Dt. 3/12/2024

Date of Test: 4/12/2024

Samples were received in UNSEALED condition

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		ຸດົ	Conversion factor. 1.0 MFa = 1.0 N/mm* = 145 psi. Strengths are based on nominal area.	are based c	si. Strengths	1/mm" = 145 p	MF3 = 1.0 N	il lactor. I.U	T COLIVERSIO	40 50	28 32	22. 52	16 20 2	113 154 2	28.3 50.3 78.5 113 154 201 314 380 401 616 ond	28.3 50	Nominal cross sectional area, sq.mm	Nominal cro
		-				2 445	100	n factor: 10	Conversion			1			ed cit. I dule	, ac	r diamm	Nominal bar diamm
	es Section		•			•	1			-				2	and Table	nts Nominal Ar	BDS ISO 6935-2:2016 Weight Requirements Nominal Area etc. (Table 2)	BDS ISO 69
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Satisfactory	Satisfactory		124	3	746	750	V 05	540	545	43.1		0.617	0.621	10.0	01	WI	CONTRI DOOD DVXX	י נ
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Rohand	Rend	Average	Total	R /R H	Average	Tensile	Tensile	Average	Yield or	TEIG OF		Typiaye	7 1000	1000	<u>.</u>	د	Identification	No.
		ition.	Samples were received in UNSEALED condition.	d in UNSE	ere receive	odilibies w	, married		V		1	Aug	Macc	Actual	Nominal		Frog Mark /	Š

Actual diameter is the diameter of a perfectly round plain bar having same mass per unit length Actual diameter of bars are shown for informative purpose only. It is not a requirement of BDS ISO 6935-2:2016 BDS ISO 6935-2 Tensile Requirements for Common Steel Grades

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

Nominal mass per

TANDOUN A		+	+	+	+			+	Grade		4
-	400	450	600	500	8	400	400	3	Min.	eld St	
	1.3 R et (min.)	1.25 R et (min.)	:	:		:			Max	Yield Strength, Ren, MPa	
	1.25	1.15	1.15	1.15	1.15	1.15	1.15	min.	Rm/ReH	Du	
	17	:	10	14	14	14	14	Total	Elongation,	Ductiliy Properties	The state of adding
	8	7.5	7	7	7	7	7	At Rm	n, % (min.)	rties	0

ountersigned by:

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

B500DWR 500

1.3 R et (min.)

1.25

07 December 2024

R9hePCf7f

Professor, Dept. of Civil Engg Dr. Abdul Jabbar Khan Test performed by:

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. 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

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BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET) DEPARTMENT OF CIVIL ENGINEERING

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STRENGTH OF MATERIALS LABORATORY

BRTC No.: 1103-37749/CE/24-25; Dt. 3/12/2024 Ref.: Letter, Dt. 3/12/2024

Date of Test: 4/12/2024

Project:

Sent by: Engr. Md. Maksudul Karim, General Manager

Shahriar Steel Mills Ltd., Konapara, Jatrabari, Dhaka

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

Samples were received in UNSEALED condition.

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Satisfactory Satisfactory Satisfactory	Satisfactory Satisfactory Satisfactory	21	20 20 22	1.27	720	730 730 695	82.8 82.8 78.7	565	580 590 535	65.5 66.5 60.4	0.893	0.913 0.910 0.857	12.2 12.1 11.8	12 12 12	SSRM B500 DWR SSRM B500 DWR SSRM B500 DWR	ω N <u>-</u>
samples)		(%)	(G.length = 5d)		R _m	R _m	S	R _{eH} MPa	R _{ен} МРа	2	Length kg/m	Length kg/m	mm	mm	v	
(Seperate	(Seperate	Elongation	Elongation		Strength,	Strength	Load	Yield Strength,	Proof Strength	Proof	Mass Per Unit	Per	dia.	dia.	Identification	N _O
Kebend	Bend	Average	Total	R N R	Average	Tensile	Tensile	Average	Yield or	Yield or	Average	Mass	Actual	Nominal	Frog Mark /	SI.

145 psi. Str

Actual diameter of bars are shown for informative purpose only. It is not a requirement of BDS ISO 6935-2:2016 unit length Permissible deviation, % ± 8 ± 8 ± 6 ± 6 ± 5 ± 5 ± 5 ± 5 ± 5 ± 4 \pm

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

Steel	Yield S	Yield Strength, R .H, MPa	Du	Ductiliy Properties	ties
Grade	Min.	Max.	Rm/ReH	Elongation, % (min.)	n, % (min
٠			min.	Total	At Rm
B400C-R	400	1	1.15	14	7
B400CWR	400		1.15	14	7
B500C-R	500	1	1.15	14	7
B500CWR	500	:	1.15	14	7
B600C-R	600		1.15	10	7
B450CWR	450	1.25 R et (min.)	1.15	:	7.5
B400DWR	400	1.3 R et (min.)	1.25	17	80
B420DWR	420	1.3 R et (min.)	1.25	16	8
B500DWR	500	1.3 R # (min.)	1.25	ಚ	8

ountersigned by:

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

07 December 2024

Dr. Abdul Jabbar Khan

Test performed by:

Professor, Dept. of Civil Engg.

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D C





Sent by: Engr. Md. Maksudul Karim, General Manager

Shahriar Steel Mills Ltd., Konapara, Jatrabari, Dhaka

TEST OF DEFORMED M.S. BARS IBDS ISO 6935-2:2016

Project:

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET) DEPARTMENT OF CIVIL ENGINEERING

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STRENGTH OF MATERIALS LABORATORY

Ref.: Letter; Dt. 3/12/2024

Date of Test: 4/12/2024

BRTC No.: 1103-37749/CE/24-25; Dt. 3/12/2024

Samples were received in UNSEALED condition.

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				SSRM B500 DWR SSRM B500 DWR SSRM B500 DWR		Frog Mark / Identification
				16 16	mm	Nominal dia.
1 . 1	1 i d i l	1 1 1	I [E] 1	16.0 16.0 16.0	mm	Actual dia.
1 1	4 OF 15		x t x	1.576 1.581 1.573	Unit Length kg/m	Mass Per
	1		•	1.577	Unit Length kg/m	Average Mass Per
1 . C .	C 1 C	1 1 2	# t. #	115 115 116	Load	Yield or Proof
				575 575 580	Strength R _{eH} MPa	Yield or Proof
€ S NO.			•	575	Strength, R _{eH} MPa	Average Yield
a			3 t 3	144 141 146	ž	Tensile Load
				715 700 725	R m MPa	Tensile Strength
E	. 1 .	·	t	715	Strength, R m MPa	Average Tensile
		Sh F		1.24		R _m /R _{eH}
				20 21 21	(%) (G.length = 5d)	Total Elongation
ı				21	Elongation (%)	Average Total
				Satisfactory Satisfactory Satisfactory	(Seperate samples)	Bend Test
				Satisfactory Satisfactory Satisfactory	(Seperate samples)	Rebend Test

BDS ISO 6935-2:2016 Weight Requirements, Nominal Area etc. (Table 2) lominal cross sectional area, sq.mm 28.3 50.3 78.5 113 154 201 14 16 20 22: 25 28 32 40 50 Conversion factor: 1.0 MPa = 1.0 N/mm² = 145 psi. Strengths are based on nominal area 491 616 804 1257 1964

ominal mass per Nominal, kg/m

9.87 15.42

BDS ISO 6935-2 Tensile Requirements for Common Steel Grades

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

Steel	Yield S	Yield Strength, Ren, MPa	Du	Ductiliy Properties	ties
Grade	Min.	Max.	Rm/ReH	Elongation, % (min.)	n, % (
		7.1	min.	Total	At Rm
B400C-R	400		1.15	14	
B400CWR	400		1.15	14	
B500C-R	500		1.15	14	
B500CWR	500		1.15	14	-
B600C-R	600		1.15	10	7
B450CWR	450	1.25 R eн (min.)	1.15	:	7.5
B400DWR	400	1.3 R et (min.)	1.25	17	8
B420DWR	420	1.3 R et (min.)	1.25	16	8
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Prof. Dr. Hasib Mohammed Ahsan, Test-in-Charge Dept. of Civil Engg., BUET, Dhaka-1000, Bangladesh ountersigned by:

500

1.25

bNmZNnHKF

Test performed by:

Professor, Dept. of Civil Engg. Dr. Abdul Jabbar Khan

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Testing & Consultation

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STRENGTH OF MATERIALS LABORATORY

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

Sent by: Engr. Md. Maksudul Karim, General Manager Shahriar Steel Mills Ltd., Konapara, Jatrabari, Dhaka

Project:

Date of Test: 4/12/2024 Ref.: Letter; Dt. 3/12/2024 BRTC No.: 1103-37749/CE/24-25; Dt. 3/12/2024

Samples were received in UNSEALED condition

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Nominal cross	Nominal bar dia., mm	500 001000	Bos leo coar																w	2						Š	20
Nominal cross sectional area, sq.mm	a., mm	503130 6933-2:2016 Weight Requirements, Nominal Area etc. (Table 2).			E.				The second secon					The second section is a second section of the second section in the second section is a second section of the second section in the second section is a second section of the second section in the second section is a second section of the second section in the second section is a second section of the second section in the second section is a second section of the section of		0.000 00 10000 00 10 10 10 10 10 10 10 10		•	SSRM B500 DWR	SSRM B500 DWR	SURM BOOD DWR					identification	dontification
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	= 1.0 N/mm ² = 145 psi. Strengths are based on nominal area.											•						21	22	2	3	= 5d)	(G.length	(%)	Elongation	The section	lola
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	The second second		The state of the s													•		-	Satisfactory	_	+		samples)	(Seperate	lest	1,000	Rehend

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Nominal cross sec	tional area comm	20 3	500	705						1	-	1		L
1101 0103	secuonal area, sq.miii	28.3	50.3	78.5	113	154	201	314	380	491	616	804	125	7
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Tomman mass per	1. 19	777.0	0.395	0.616	188.0	1.21	1.58	2.46	2.98	3.85	4.84	6.31	8.8	
init length	miccible deviation	П										. 0.0	0.0.	
anicicingui	remissible deviation, %	ito	±8	1+6	16	15	±5	ı±5	±5	1+4	+4	+4	44	_
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Actual diameter is the diameter of a perfectly round plain bar having same mass per unit length Actual diameter of bars are shown for informative purpose only. It is not a requirement of BDS ISO 6935-2:2016

BDS ISO 6935-2 Tensile Requirements for Co

Steel	Yield S	Steel Yield Strength, R. H. MPa Ductiliv Properti	Du	Ductiliv Properties	ties
Grade	Min.	Max.	Rm/Ret	Elongation, % (min.)	n, % (min.)
			min.	Total	At R
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 et (min.)	1.15	:	7.5
B400DWR	400	1.3 R et (min.)	1.25	17	œ
B420DWR	420	1.3 R et (min.)	1.25	16	20 0
B500DWR	500	13 R - (min)	1 25	43	0

countersigned by:

Dept. of Civil Engg., BUET, Dhaka-1000, Bangladesh ³rof. Dr. Hasib Mohammed Ahsan, Test-in-Charge

07 December 2024

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Dr. Abdul Jabbar Khan est performed by:

Professor, Dept. of Civil Engg.

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Testing & Consultation 5 of 5

STRENGTH OF MATERIALS LABORATORY

TEST OF DEFORMED M.S. BARS IBDS ISO 6935-2:2016

Sent by: Engr. Md. Maksudul Karim, General Manager

Shahriar Steel Mills Ltd., Konapara, Jatrabari, Dhaka

Project: - - -

Samples were received in UNSEALED condition.

Date of Test: 4/12/2024 Ref.: Letter; Dt. 3/12/2024 BRTC No.: 1103-37749/CE/24-25; Dt. 3/12/2024

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Satisfactory Satisfactory Satisfactory	22	22	1.34	730	735 760 700	361 372 344	545	540 590 510	266 289 251	3.836	3.837 3.875 3.796	24.9 25.1 24.8	25 25 25	SSRM B500 DWR SSRM B500 DWR SSRM B500 DWR	ω N ユ
	(%)	∌		R _∃	R MPa	ž	R _{eH} MPa	R _{eH} MPa	K G	Length kg/m	Length kg/m	mm	mm		
	Total Elongation	9	e e	Tensile Strength,	Strength	Load	Yield	Proof Strength	Proof	Average Mass Per	Per	Actual dia.	Nominal dia.	Frog Mark / Identification	No.
	Average	Total	R /R	Average	Toncilo	Topcilo	1				1				

RDS ISO 6935-2-2016 V	Weight Requirements, Nominal Area etc. (Table 2).	minal	Area e	tc. (Tat	ole 2)		١								Conversion factor: $1.0 \text{ MPa} = 1.0 \text{ N/mm}^2 = 145 \text{ psi}$. Strengths are based on nominal area.	area.	
Nominal bar dia. mm		6	∞	10	12	14	16	20	22.	16 20 22° 25 28 32 40 50	28	32	40	50			
Nominal cross sectional area, so,mm	nal area. sq.mm	28.3 50.3 78.5 113 154 201 314 380 491 616 804 1257 1964	50.3	78.5	113	154	201	314	380	491	616	804	257	1964			
Nominal mass per Nominal kg/m		0.222 0.395 0.616	0.395	0.616	0.887	1.21	21 1.58 2.46 2.98 3.85 4.84 6.31 9.87 15.42	2.46	2.98	3.85	4.84	6.31	9.87	15.42			
unit length	viation.%	148	±	#6	は	15	±5	1+5	145	±4	±4	±4	144	1+4			
							-										

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BDS ISO 6935-2 Tensile Requirements for Common Steel Grades

Steel	Yield S	Steel Yield Strength, ReH, MPa Du	Du	Ductiliy Properties	ties
Grade	Min.	Max.	Rm/Re	Elongation, % (min.)	n, % (min.)
			min.	Total	At Rm
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
8450CWR	450	1.25 R ен (min.)	1.15	1	7.5
8400DWR	400	1.3 R eн (min.)	1.25	17	8
B420DWR	420	1.3 R et (min.)	1.25	16	8
B500DWR	500	1.3 R et (min.)	1.25	13	8

Dept. of Civil Engg., BUET, Dhaka-1000, Bangladesh [⊃]rof. Dr. Hasib Mohammed Ahsan, Test-in-Charge Countersigned by:

> Dr. Abdul Jabbar Khan Test performed by: 07 December 2024

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