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n the industrial scene of the Sultanate of Oman. For the first time in Oman, Electric Resistance Welded (ERW) tubular products in circular square, and rectangular hollow sections Hot rolled merchant bar products in Angles, Channels, Round, Square, Flat Bars, TMT Bars were manufactured at Al Jazeera Steel Products Co. SAOG (Formerly known as Al Jazeera Tube Mills Company S.A.O.G.)

Promoted by a group of Omani entrepreneurs with a fairly large holdings with the general public of the Sultanate, Al Jazeera has become one of the leading tubing manufacturers in the Middle East. From its modern plant located at Sohar(Oman) Al Jazeera offers Mild Steel ERW tubular products in both Black and Galvanized class with plain end and threaded and coupled ends and Hot Rolled Merchant bar products in AS Rolled and galvanized condition. conforming to ASTM, BS, DIN, EN and other International specifications.

Al Jazeera boasts of installing some of the latest and most modern machineries in the plant. Al Jazeera's manufacturing facilities include four tube production lines supplied by M/s. Abbey Etna Inc., Ohio, USA, M/s. TRM Thailand and M/s. Prasert Machineries Thailand. There are three galvanizing lines with main line supplied by M/s. BERG, Germany. One hot rolling mill supplied from HTC, China Composed of multinational workforce and managed bycompetent technical and managerial professionals, Al Jazeera has been seized with a vision to becoming one of the leading tubings suppliers in the world. At Al Jazeera, production processes have been integrated with modern quality controls like, e.g., online Eddy Current Testing facility, Universal Testing Machine, Hardness Machine and Inverted Mettallurgical Microscope with CCD camera attachment, optical spectrometer, Bend test machine, etc.

Al Jazeera currently export its products to 25 different countries including USA, Canada, Australia, Germany and other European Union countries.

## Certifications / Approvals

In its zeal to set higher quality standards Jazeera achieved QMS ISO 9001:2015 certification by  ${\tt GLOBAL\,GROUP}$ 

In addition to above Al Jazeera's Quality Management System conforms to the requirements of

- ▶ UL (Underwriters Laboratories, USA) has also certified Al Jazeera for manufacturing of Metallic Sprinkler Steel Tubes for Fire Protection services.
- ▶ Al Jazeera is also having CE Mark Certification to supply its product in construction field in European Union CPD (Construction Products Directive) 89/106/EEC.
- ▶ Al Jazeera is also certified by FM APPROVALS, USA for manufacturing of steel pipes for Automatic Fire Sprinkler Systems.
- ▶ Jazeera is also having UAE Civil Defense Approval for supplying its product to various profects under Civil Defense in United Arab Emirates.
- ▶ Al Jazeera is also certified by UK CARES & DCL for manufacturing of BS 4449: 2005B 500B REBAR

One of the most significant milestones achieved by Al Jazeera is in the field of customer service. It is a constant effort of Jazeera to shorten the time lag between receipt of techno-commercially acceptable order and its execution. Besides this people at Al Jazeera take utmost care to ensure that the products are delivered according to the needs of customers.

At present Jazeera meets the requirements of tubes & merchant bars conforming to various steel grades and international standard specifications. In our endeavor to cater the wider spectrum of industry's needs we at Jazeera also offer tubes & merchant bars for general engineering purposes. This gives the product range an additional strength.

The company aims to achieve customer satisfaction for every category of customers and to be preferred partner in the region with all relevant principles while creating an environment that provides constant challenges and growth possibilities for all entities involved.



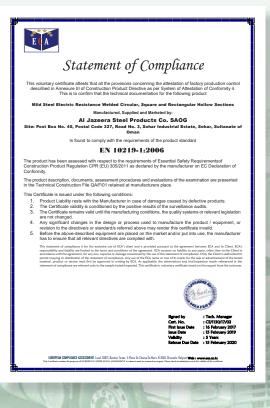


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### Statement of Compliance

nce Welded Circular, Square and Rectangular Hollow S

Al Jazeera Steel Products Co. SAOG 40, Postal Code 327, Road No. 3, Sohar Industrial Esta Oman

### EN 10255:2004+A1:2007

The product has been assessed with respect to the requirements of Essential Safety Requirements of Construction Product Regulation CPR (EU) 305/2011 as declared by the manufacturer on EC Declaration of Conformity.

- Product Liability resis with the Minduschure in case of damages caused by defective products. The Certificate remains valid until the manufacturing conditions, the quality systems or relevant registation are not changed. Any significant of changes in the design or process used to manufacture the product of equipment, or produced to the contract of the contract



### CERTIFICATE OF APPROVAL



### Product Conformity Certification

This is to certify that

Al Jazeera Steel Products Co. S.A.O.G (Oman)
at its establishment at

has satisfied the Authority that it operates a quality management system that complies with the requirements of SS EN ISO 9001 and the relevant CARES Goality and Operations Assessment Section 1. The control of the CARES which were operated by the CARES which will be the Authority that it is entitled to use the CARES and to in the products that cardiom with the stated product startards and is entitled to use the CARES and to in the products with the processes and procedures registered with the Authority.

Scope of certification: BS 4449 2005 Grade B500B Bar 8 to 32mm

This certificate remains the property of the Authority and is issued subject to the Regulations of the Authority. This certificate is uncontrolled when printed. To check the validity of this certificate please visit www.ukcares.com or contact us on +44 1732 450000.

161101

December 2016

Le Bankley





### Certificate of Compliance

SCHICULE 40 STEEL SPRINLER PIPE SIZES 1, 1-54, 1-52, 2-2-5, 3-3-2, 4, 6, 8, AND 8 HICH NOW

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### CERTIFICATE OF COMPLIANCE

 Certificate Number
 20171226 MH49792

 Report Reference
 MH49792 20171212

 Issue Date
 2017 DECEMBER 26

Issued to: AL JAZEERA STEEL PRODUCTS CO SAOG

Po Box 40 Sohar Industrial Estate Sultanate Of Oman 327 OMAN

This is to certify that

LEAD CONTENT VERIFICATION OF PRODUCTS IN CONTACT WITH POTABLE WATER DRINKING WATER SYSTEM COMPONENTS "Black Steel Pipes" (1/2" 

"3"; 5" diameter and greater)

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

NSF 61 -Drinking Water System Components - Health

Effects NSF/ANSI 372, Drinking Water System Components -

Lead Content

Additional Information:

See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow:Up Service.

Look for the UL Certification Mark on the product.





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### CERTIFICATE OF COMPLIANCE

Issue Date

Certificate Number 20140911 MH49792 MH49792 20140905 2014 SEPTEMBER 11

AL JAZEERA STEEL PRODUCTS CO SAOG

PO BOX 40 SOHAR INDUSTRIAL ESTATE SULTANATE OF OMAN

327 OMAN

This is to certify that esentative samples of

LEAD CONTENT VERIFICATION OF PRODUCTS IN

CONTACT WITH POTABLE WATER

"USC, CNC" Galvanised Steel Pipes, size range ½" to 8"

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety:

NSF 372 DRINKING WATER SYSTEM COMPONENTS D

LEAD CONTENT

Additional Information:

See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Classification Mark for the U.S. and Canada should be considered as being covered by UL's Classification and Follow Up Service and meeting the appropriate U.S. and Canadian requirements.

requirements.

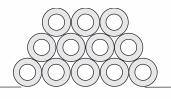
The UL Classification Mark includes: the UL in a circle symbol: with the word "CLASSIFIED" (as shown), a control number (may be alphanumenc) assigned by UL; a statement to indicate the extent of UL's evaluation of the product category name (product identity) as indicated in the appropriate UL Directory. The UL Classification Mark for Canada includes: the U. Classification Mark for Canada includes: the U. Classification Mark for Canada includes: the U. Classification Mark for Canada includes the U. Classification of the product adeptation of the product identity in English, French, or EnglishFrench as indicated in the appropriate UL Directory.

Look for the UL Classification Mark on the product.

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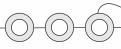




Inspection







Decoiling

## **Quality Policy**

Al Jazeera Steel Products Co SAOG will constantly strive to produce & supply High Quality Steel Pipes & Hot Rolled Steel Products complying with various International Standards. It will be our constant effort to anticipate & exceed customer expectation.

The company will work to achieve sustained growth for its shareholders by constantly engaging and working with our customers as well suppliers in an environment of trust and mutual benefit.

Continual Improvement, innovation, enhancement of employee skills through training, review and adherence to Quality Management System will be integral to our business.

Chief Executive Officer

## **Mission Statement**

We at Jazeera share a common desire to continuously grow and become one of the leading manufacturers of steel products in the region, meeting and exceeding the aspirations of customers, shareholders and employees shall be the guiding principle for our growth.



# TECHNICAL DATA OF BLACK AND HOT DIP GALVANIZED STEEL PIPES CONFORMING TO ASTM A 53 GRADE A & B SCH-40 ASTM A 795 GRADE A & B SCH - 40

	OF	ER	Ţ	0		_	٠.	,	,	~	_	٠.				
	NO. OF	PCS PER	LIFT	120	84	09	42	36	26	18	14	12	10	7	7	5
d	S	MIN LENGTH	MM	38.1	39.7	49.2	50.8	50.8	52.4	77.8	81.0	84.1	87.3	93.7	125.4	-
	SOCKET DIMENSIONS	MIN LI	INCH	1.500	1.563	1.938	2.000	2.000	2.063	3.063	3.188	3.313	3.438	3.688	4.938	-
	OCKET DI	SIDE DIA	MM	27.0	33.4	40.0	48.3	55.9	8.69	82.5	101.6	117.5	127.0	159.9	187.7	-
	S	MIN OUTSIDE DIA	INCH	1.063	1.313	1.576	1.900	2.200	2.750	3.250	4.000	4.625	5.000	6.296	7.390	:
		GRADE B	KPA	4800	4800	4800	0006	0006	17200	17200	17200	16300	15200	13400	12300	10800
	ESSURE	GRA	ISd	002	002	002	1300	1300	2500	2500	2500	2370	2210	1950	1780	1570
	TEST PRESSURE	GRADE A	KPA	4800	4800	4800	8300	8300	15900	17200	15300	14000	13100	11500	10500	9200
		GRA	ISd	200	200	200	1200	1200	2300	2500	2220	2030	1900	1670	1520	1340
	PES		FT/TON	2583	1941	1312	896	810	603	380	291	242	204	151	116	79
	BLACK PI	PLAIN END	LB/FT	0.85	1.13	1.68	2.27	2.72	3.66	5.80	7.58	9.12	10.80	14.63	18.99	28.58
	WEIGHT OF BLACK PIPES	PLAI	MTR/TON	787	592	400	295	247	184	116	68	74	62	46	35	24
	5		KG/MTR	1.27	1.69	2.50	3.39	4.05	5.44	8.63	11.29	13.57	16.07	21.77	28.26	42.55
	CKNESS	ARD	MM	2.77	2.87	3.38	3.56	3.68	3.91	5.16	5.49	5.74	6.02	6.55	7.11	8.18
	OUTSIDE DIAMETER WALL THICKNESS	STANDARD	INCH	0.109	0.113	0.133	0.140	0.145	0.154	0.203	0.216	0.226	0.237	0.258	0.280	0.322
	MAMETER	DARD	MM	21.3	26.7	33.4	42.2	48.3	60.3	73.0	6.88	101.6	114.3	141.3	168.3	219.1
	OUTSIDE I	STANDARD	INCH	0.840	1.050	1.315	1.660	1.900	2.375	2.875	3.500	4.000	4.500	5.563	6.625	8.625
		JIPE SIZE	MM	15	20	25	32	40	90	9	08	06	100	125	150	200
		NOMINAL PIPE SIZE	INCH	1/2	3/4	1	1.1/4	1.1/2	2	2.1/2	3	3.1/2	4	5	9	8

## TECHNICAL DATA OF BLACK AND HOT DIP GALVANIZED STEEL PIPES CONFORMING TO ASTM A53 GRADE A & B SCHEDULE 80

NO. OF	PCS PER	LIFT	79	18	14	10		
	GRADE B	KPA	17200	17200	17200	19300		
TEST PRESSURE	GRA	ISd	2500	2500	2500	2800		
TEST PR	GRADE A	KPA	17200	17200	17200	18600		
	GRA	ISd	2500	2500	2500	2700		
S		FT/ TON	439	288	215	147		
LACK PIPE	PLAIN END	PLAIN END	PLAIN END	LB/FT	5.03	7.67	10.26	15.00
WEIGHT OF BLACK PIPES				PLAIN	PLAIN	KG/MTR MTR/ TON	134	88
M		KG/MTR	7.48	11.41	15.27	22.32		
ICKNESS	DARD	MM	5.54	7.01	7.62	8.56		
WALL TH	STAND	INCH	0.218	0.276	0.300	0.337		
<b>JAMETER</b>	DARD	MM	60.3	73	6.88	114.3		
OUTSIDE L	STANDARD	INCH	2.375	2.875	3.500	4.500		
NOMINAL PIPE SIZE OUTSIDE DIAMETER WALL THI		MM	50	65	08	100		
NOMINAL		INCH	2	2.1/2	3	4		

## TECHNICAL DATA OF BLACK AND HOT DIP GALVANIZED STEEL PIPES CONFORMING TO ASTM A53 GRADE A & B/ ASTM A 795 GRADE A & B SCH-10

0														
		OUTSIDE	OUTSIDE DIAMETER	WALL THIG	IICKNESS	M	WEIGHT OF BLACK PIPES	LACK PIPI	ES		TEST PRESSURE	ESSURE		NO. OF
NOMINAL PIPE SIZE	PIPE SIZE	STAN	STANDARD	STANDARD	DARD		PLAIN END	END		GRADEA	OE A	GRA]	GRADE B	PCS PER
INCH	MM	INCH	MM	INCH	MM	KG/MTR	MTR/ TON	LB/FT	FT/ TON	PSI	KPA	PSI	KPA	LIFT
3/4	20	1.050	26.7	0.083	2.11	1.28	781	98.0	2563	700	4800	700	4800	84
1	25	1.315	33.4	0.109	2.77	2.09	478	1.41	1570	700	4800	700	4800	09
1.1/4	32	1.660	42.2	0.109	2.77	2.69	372	1.81	1220	1000	0069	1000	0069	42
1.1/2	40	1.900	48.3	0.109	2.77	3.11	322	2.09	1055	1000	0069	1000	0069	36
2	50	2.375	60.3	0.109	3.05	3.93	254	2.64	835	1000	0069	1000	0069	26
2.1/2	9	2.875	73	0.120	3.05	5.26	190	3.53	624	1000	0069	1000	0069	18
3	80	3.500	6.88	0.120	3.05	6.46	155	4.34	208	1000	0069	1000	0069	14
3.1/2	06	4.000	101.6	0.120	3.05	7.41	135	4.98	443	1200	8300	1200	8300	12
4	100	4.500	114.3	0.120	3.05	8.37	119	5.62	392	1200	8300	1200	8300	10
5	125	5.563	141.3	0.134	3.4	11.58	98	7.78	283	1200	8300	1200	8300	7
9	150	6.625	168.3	0.134	3.4	13.85	72	9.30	237	1000	0069	1000	6900	7
8	200	8.625	219.1	0.188*	4.78	25.26	40	16.96	130	800	5500	800	5500	5
8	200	8.625	219.1	0.148	3.76	19.97	50	13.41	164	800	5500	800	5500	5
	100	7 7		1										









### MECHANICAL PROPERTIES

Properties	Tensile	Strength	Yield St	rength
-	psi	MPa	psi	MPa
Grade-A	48000	330	30000	205
Grade-B	60000	415	35000	240

Min Percentage Elongation in 2" [50mm] rounded to nearest 1/2

$$e = 625,000[1940] \times (A^{0.2}/U^{0.9})$$

A= cross sectional area of the tension specimen, rounded to the nearest 0.01 inch<sup>2</sup>[1mm<sup>2</sup>],

based on specified outside diameter. If the area is more than 0.75 inch<sup>2</sup> [500mm<sup>2</sup>], then

the value 0.75 inch<sup>2</sup> [500mm<sup>2</sup>] shall be used.

U= specified minimum tensile strength, psi[MPa].

### **TOLERANCES**

### **OUTSIDE DIAMETER**

SIZE FROM	SIZE TO	TOLERANC	E INCH(MM)
INCH (MM)	INCH (MM)	POSITIVE	NEGATIVE
1/2 (15)	1.1/2(40)	1/64 (0.40)	1/64 (0.40)
2 (50)	8 (200)	1% OF OD	1% OF OD

THICKNESS 12.5% max under the nominal wall thickness.

WEIGHT + / - 10% on calculated standard weight.

END FINISH Square Cut Ends for sizes less than or equal to 1.1/2" NPS

Beveled Ends at  $30^{\circ}$  -0°/+5° for sizes 2" NPS and above.

BEND TEST Applicable for sizes 2" NPS and below

90° bending radius should be 12 times of the tube diameter.

FLATTENING TEST Applicable for sizes 2" NPS and above in three stages.

STAGE-1 For weld ductility until 2/3 of outside dia of specimen tube.

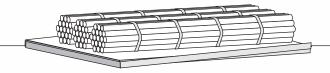
STAGE-2 For ductility of steel until 1/3 of outside dia of specimen tube.

STAGE-3 Full flattening for testing of laminated and unsound material.

ZINC COATING
MINIMUM : 1.60 oz / ft² [490 Gm / Mtr²]

AVERAGE : 1.80 oz / ft² [550 Gm / Mtr²]

MARKING



### MARKING:

### 1. METALLIC SPRINKLER PIPES

### For 1/2" & 3/4" ASTM A53 Grade A SCH 40

(UL) LISTED 3KBY STEEL AJSPC/ASTM A53/ASME SA53/SIZE/SCH 40/GRADE A /TYPE E/NDE/LENGTH/ HEAT NO...../OMAN.

### For 1" to 8" ASTM A53 Grade A & B SCH 40

(UL) LISTED 3KBY STEEL AJSPC/ASTM A53/ASTM A795/ ASME SA53/SIZE/ SCH 40/

GRADE /TYPE E /NDE/LENGTH/ HEAT NO/OMAN.

### For 1/2" to 6" ASTM A53 Gr A/B & ASTM A795 Grade A/B SCH 10

(UL) LISTED 3KBY STEEL AJSPC/ASTM A53/ASTM A795/SIZE/SCH 10/GRADE/TYPE E/NDE/LENGTH/ HEAT NO/OMAN.

### For 8" ASTM A53 Gr A/B & ASTM A795 Grade A/B 0.188" WALL THICKNESS

(UL) LISTED 3KBY STEEL AJSPC/ASTM A53/ASTM A795/SIZE/0.188"/GRADE/TYPE E/NDE/LENGTH/ HEAT NO/ OMAN.

NOTE: AJSPC - AL JAZEERA STEEL PRODUCTS CO. SAOG

### 2. GALVANIZED NSF/ ANSI 372 CERTIFIED PIPES

### [Galvanized Steel Pipes: 1/2" to 3/4" diameter size in Schedule 40]

UND. LAB. CLFD STEEL PIPE NSF 372 MH49792 AJSPC/ASTM A53/ SIZE/SCH 40/GRADE/ TYPE E /NDE/LENGTH/ HEAT NO/OMAN.

### (Galvanized Steel Pipes: 1" to 8" diameter size in Schedule 40)

UND. LAB. CLFD STEEL PIPE NSF 372 MH49792 FM AJSPC/ASTM A53/ASTM A795/SIZE/SCH 40/GRADE/
APPROVED

TYPE E/NDE/LENGTH/ HEAT NO/OMAN.

### (Galvanized Steel Pipes: 1/2" to 8" diameter size in Schedule 10)

UND. LAB. CLFD STEEL PIPE NSF 372 MH49792 AJSPC/ASTM A53/ASTM A795/SIZE/SCH 10/GRADE/TYPE E/NDE/LENGTH/ HEAT NO/OMAN.

NOTE: A) AJSPC – AL JAZEERA STEEL PRODUCTS CO. SAOG

### 3.BLACK STEEL NSF/ ANSI 61 AND NSF/ ANSI 372 CERTIFIED PIPES

### [Black Steel Pipes] - ½" to 3/4" diameter in Schedule 40]

UL CLFD. PIPE NSF 61/NSF 372 MH49792 AJSPC/ASTM A53/SIZE/ SCH 40/ GRADE /TYPE E/NDE/LENGTH/ HEAT NO/OMAN.

### (Black Steel Pipes) - 1" to 3", 5" to 08" diameter in Schedule 40)

UL CLFD. PIPE NSF 61/NSF 372 MH49792 AJSPC/ASTM A53/ASTM A795/ SIZE/ SCH 40/ GRADE/
APPROVED

TYPE E/NDE/LENGTH/ HEAT NO/OMAN.

### [Black Steel Pipes - 1/2" to 3", 5" to 08" diameter in Schedule 10]

UL CLFD. PIPE NSF 61/NSF 372 MH49792 AJSPC/ASTM A53/ASTM A795/ SIZE/SCH 10/ GRADE/ TYPE E/NDE/LENGTH/ HEAT NO/OMAN.

NOTE: A) AJSPC – AL JAZEERA STEEL PRODUCTS CO. SAOG

## B. ASTM A53 SCHEDULE 80 PIPES AJSPC/ASTM A53/SIZE/SCH 80/GRADE/TYPE E/LENGTH/NDE/ HEAT NO. XXXXXXX/ OMAN

SECTIONS	SIZE - MM	SIZE - INCHES (US CUSTOMARY UNITS)	Kg/Mtr	lbs/ft.
	38 x 4.5	1.496 x 0.177	1.34	0.90
L	38 x 12	1.496 x 0.472	3.58	2.41
_	40 x 4.0	1.574 x 0.157	1.26	0.85
_	40 x 5.0	1.574 x 0.197	1.57	1.06
_	50 x 4.0	2.0 x 0.157	1.57	1.06
_	50 x 5.0	2.0 x 0.197	1.90	1.28
_	50 x 6.0	2.0 x 0.236	2.36	1.59
_	50 x 8.0	2.0 x 0.315	3.14	2.11
_	50 x 9.0	2.0 x 0.354	3.53	2.37
_	50 x 10.0	2.0 x 0.394	3.93	2.64
-	50 x 12.0	2.0 x 0.472	4.71	3.17
-	50 x 20.0	2.0 x 0.787	7.85	5.28
_	50 x 25.0	2.0 x 0.984	9.81	6.59
_	50 x 30.0	2.0 x 1.181	11.77	7.91
_	60 x 5.0	2.36 x 0.197	2.36	1.59
_	60 x 6.0	2.36 x 0.236	2.83	1.90
	60 x 10.0	2.36 x 0.394	4.71	3.17
	60 x 12.0	2.36 x 0.472	5.65	3.80
	60 x 20.0	2.36 x 0.787	9.42	6.33
	65 x 6.0	2.559 x 0.236	3.06	2.06
FLATS	65 x 9.0	2.559 x 0.354	4.59	3.09
_	65 x 10.0	2.559 x 0.394	5.10	3.43
_	65 x 12.0	2.559 x 0.472	6.12	4.11
_	70 x 5.0	2.76 x 0.197	2.75	1.85
_	75 x 6.0	3.0 x 0.236	3.53	2.37
	75 x 8.0	3.0 x 0.315	4.71	3.17
	75 x 12.0	3.0 x 0.472	7.07	4.75
	75 x 19.0	3.0 x 0.748	11.19	7.52
L	75 x 20.0	3.0 x 0.787	11.78	7.91
	80 x 5.0	3.14 x 0.197	3.14	2.11
	80 x 6.0	3.14 x 0.236	3.77	2.53
_	80 x 8.0	3.14 x 0.315	5.02	3.37
_	80 x 10.0	3.14 x 0.394	6.28	4.22
_	80 x 20.0	3.14 x 0.787	12.56	8.44
	100 x 5.0	4.0 x 0.197	3.93	2.64
_	100 x 6.0	4.0 x 0.236	4.71	3.17
L	100 x 8.0	4.0 x 0.315	6.28	4.22
	100 x 9.0	4.0 x 0.354	7.07	4.75
	100 x 10.0	4.0 x 0.394	7.85	5.28
The state of the s	100 x 12.0	4.0 x 0.472	9.42	6.33
N NEWSTRA	100 x 25.0	4.0 x 0.984	19.60	13.17
日月日日	12 x 12	0.472 x 0.472	1.13	0.76
7 AA SEE	14 x 14	0.551 x 0.551	1.51	1.01
N A # - 8 23	16 x 16	0.630 x 0.630	2.01	1.35
SQUARE	20 x 20	0.787 x 0.787	3.14	2.11
	25 x 25	1.0 x 1.0	4.91	3.30
	30 x 30	1.181 x 1.181	7.07	4.75
CELLIE .	40 x 40	1.575 x 1.575	12.60	8.47
	50 x 50	2.0 x 2.0	19.60	13.17
- 11.	16	0.629	1.58	1.06
	20	0.787	2.47	1.66
	25	1.000	3.85	2.59
	30	1.181	5.55	3.73
	32	1.260	6.31	4.24
ROUNDS	36	1.417	7.99	5.37
	40	1.575	9.85	6.62
	42	1.654	10.88	7.31
	45	1.772	12.49	8.39
	48	1.890	14.21	9.55
	50	2.000	15.40	10.35

## **DEFORMED BAR (RE BAR) Characteristics**

Diameter	From	8 mm to 32 mm
Commercial Length	6	& 12 meters
	British Standard	BS 449:1997 Grade 460B/B500B
Specification	American Standard	ASTM A 615 Grade 60
	German Standard	DIN 488-1:2009-08 Grade B500B
	ISO	ISO 6935 : 2015 Gr B500BWR

	Ch	emical Comp	osition % N	Лах		Mechanica	l Properties	i		Ве	nding Test	Reber	nding Test
Standard Grade	%C	%Mn	%S	%P	Ys N/mm2 Min	T.S. N/mm2 Min.	E at Fracture % Min.	Agt % Min	Guage Length	Bending Angle Degree	Bending Dia mm	RE-bending Angle Degree	Re-bending Dia mm
BS 4449:1997 Gr.460B	0.25		0.050	0.050	460	YSx1.08	14	5	Sd	-		45 ° to 23°	≤ 16 mm -Sd ≥ 16 mm 7d
BS 4449:2005 Gr.B 500B	0.22		0.050	0.050	500	YSx1.08		5				90 ° to20°	≤ 16 mm -4d ≥ 16 mm 7d
ASTM A 615 Grade 60	-		0.060		420	620	≤ 20 -9 22-25 mm -8		200 mm	180 °	≤ 16 mm -3.5d 18-25 mm -5d ≥ 28mm -7d		
DIN 488 :2009 Gr B500B	0.22		0.050	0.050	500	YSx1.08		5	Sd	-		90 ° to20°	≤ 16 mm -5d 16-28 mm -8d ≥ 28 -32 mm -10d
ISO 6935:2015 Gr. B500B WR	.20	1.6	0.050	0.050	500	YSx1.08	14	5	5d			90° to 20°	

YS - Yield Strength : TS- Tensile Strength ,E- Elongation :Agt -Total Elongation at maximum force

### Mill Standard Bar Count 12 meter Length

Nominal Dia	Unit Mass (Kg/Mtr)	Nominal Mass (Kg/piece)	Pieces/Bundle	Weight/Bundle (M.1
08	0.395	4.74	422	2.000
10	0.617	7.40	270	1.999
12	0.888	10.66	188	2.003
14	1.210	14.52	138	2.004
16	1.580	18.96	106	2.010
18	2.000	24.00	84	2.016
20	2.470	29.64	68	2.016
22	2.980	35.76	56	2.003
25	3.850	46.20	44	2.033
28	4.830	57.96	34	1.971
32	6.310	75.72	26	1.969

### **Permissible Deviation From Nominal Mass**

Standard	Size (mm)	Deviation(%)
BS 4449:1997	8 to 10	± 6.5
Gr.460B	> 10	± 4.5
BS 4449:2005	Up to 8	± 6.0
Gr.B 500B	> 8	± 4.5
ASTM A 615	Up to 10	± 8.0
Grade 60	> 10	± 6.0
DIN 488 :2009 Gr	Up to 8	± 6.0
B500B	> 8	± 4.5
	Up to 8	± 8.0
ISO 6935:2015	10 to 12	± 6.0
Gr B500BWR	14 to 20	± 5.0
	25 to 32	± 4.0



	Bundle Characteristics
Weight	1,2 M.T.
Diameter of Bundle	150 to 300 mm (varies according to dia of rebar 8 mm to 36 mm)
Straps Per Bundle	Minimum 4 (Two end straps will be 0.50 Mtr from the End)



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