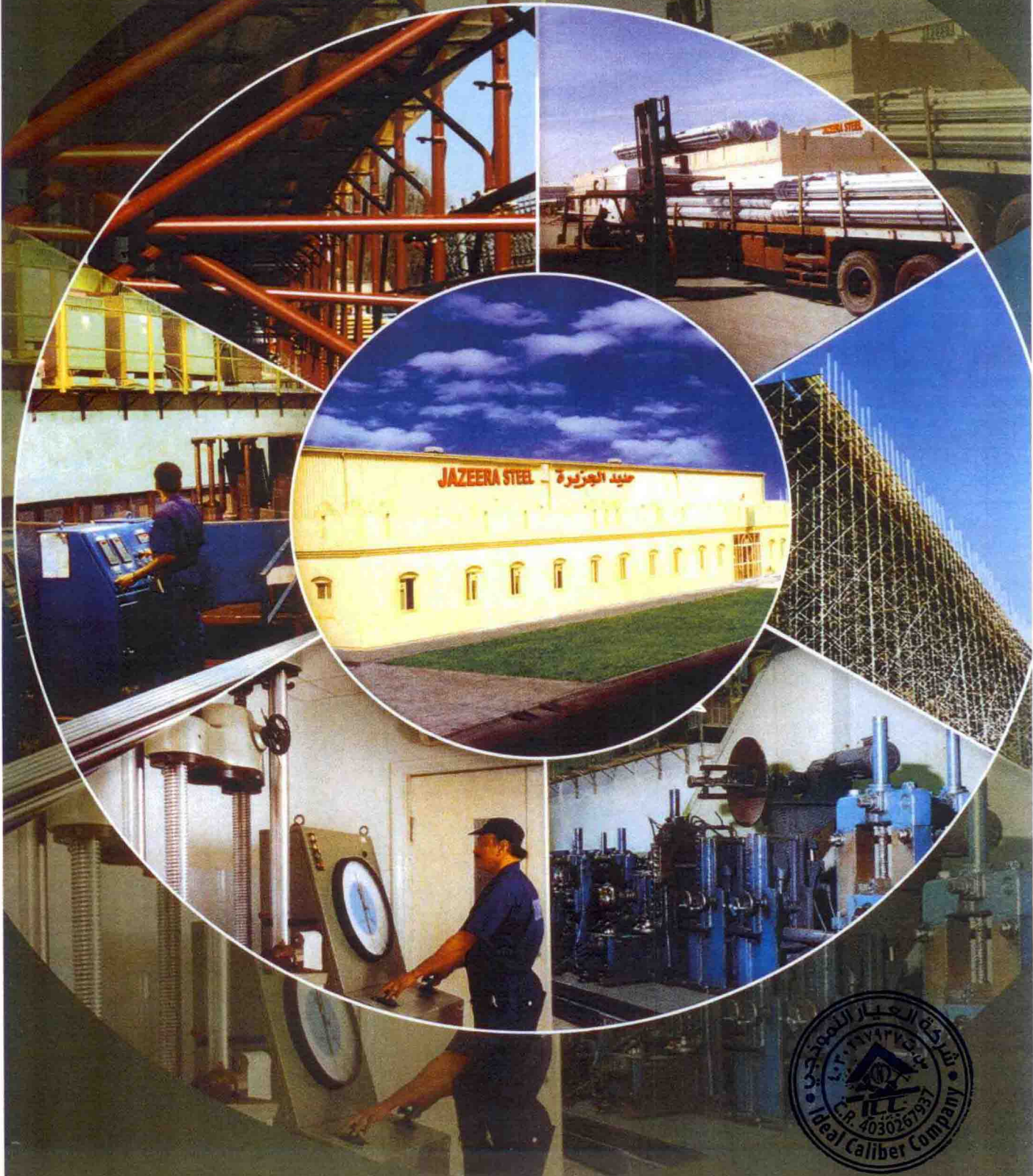


AL JAZEERA STEEL PRODUCTS CO. SAOG



**JAZEERA STEEL**

# CUTTING EDGE TECHNOLOGY FOR ASSURED QUALITY





The year 1998 was marked by a significant development in the industrial scene of the Sultanate of Oman. First time in Oman Electric Resistance Welded (ERW) tubular products in circular square, and rectangular hollow sections 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 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 conforming to API, 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 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. Composed of multinational workforce and managed by competent 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 Metallurgical Microscope with CCD camera attachment 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 9001:2000 certification by BMTRADA within one year of its commencement of production.

In addition to above Al Jazeera's Quality Management System conforms to the requirements of API QI/ISO/TS 29001:2003.

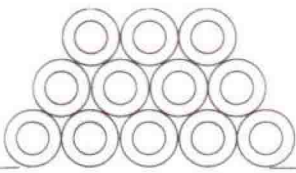
- ▶ Al Jazeera is having API (American Petroleum Institute) Certification for manufacturing of line pipes conforming to API 5L under Product Specification Levels PSL-I and PSL-2.
- ▶ UL (Underwriters Laboratories, USA) has also certified Al Jazeera for manufacturing of Metallic Sprinkler Steel Tubes for Fire Protection services.
- ▶ AlJazeera is also having CEMark Certification to supply its product in construction field in European Union CPD (Construction Products Directive) 89/106/EEC.
- ▶ Jazeera is also having UAE Civil Defense Approval for supplying its product to various projects under Civil Defense in United Arab Emirates.

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 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 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.





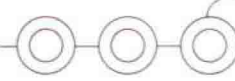
Coil Storage



Inspection



Slitting



Decoiling

## Quality Policy

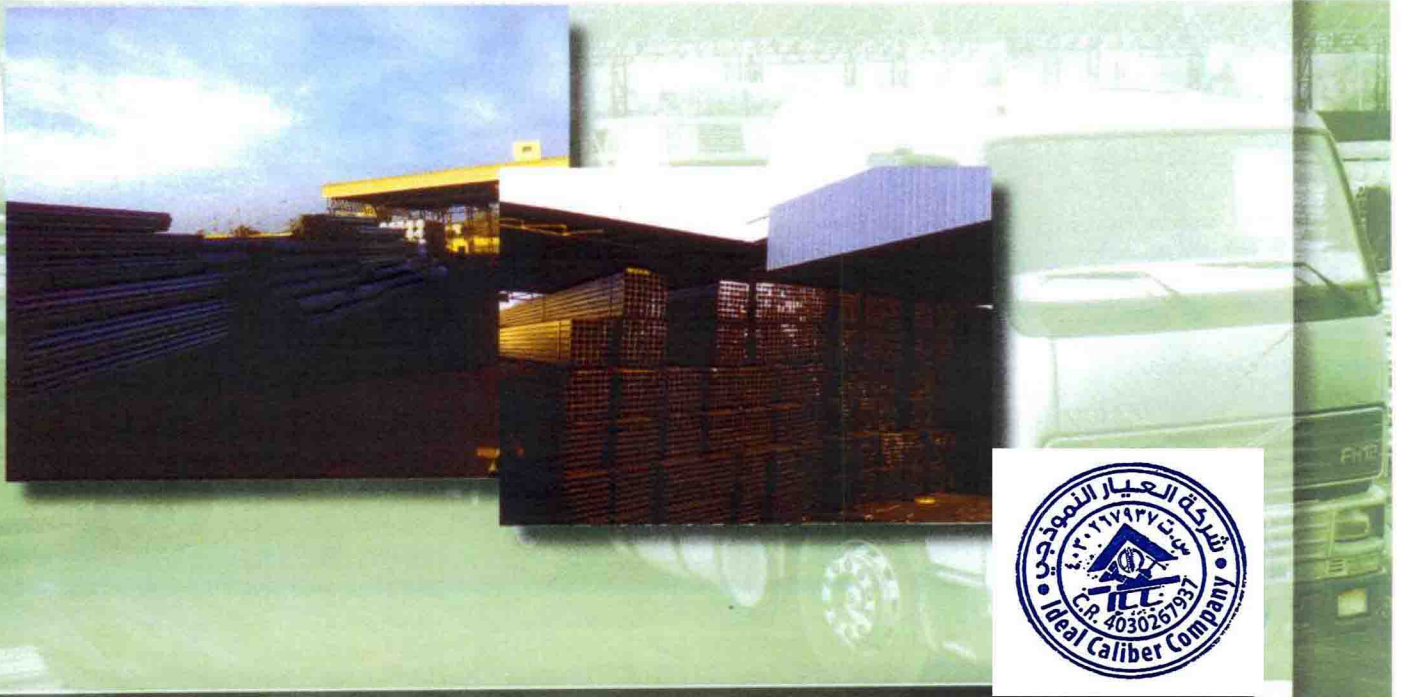
Al Jazeera Steel Products Company SAOG's motto and quality policy shall be to deliver high quality steel tube products of various sizes conforming to various international standards of ASTM, API, BS, EN, DIN etc. to all customers in various countries around the world.

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

To achieve this, the company shall implement an efficient Quality Management System conforming to the requirements of ISO 9001:2000/TS 29001/API Q1.

## 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.





**American  
Petroleum  
Institute**



## Certificate of Authority to use the Official API Monogram

License Number: 5L-0594

ORIGINAL

The American Petroleum Institute hereby grants to

**AL JAZEERA STEEL PRODUCTS CO. SAOG**  
Road No. 3, Sohar Industrial Estate  
Sohar  
Sultanate of Oman

the right to use the Official API Monogram on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1<sup>1</sup> and **API Spec 5L** and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram should be used in conjunction with this certificate number: **5L-0594**

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following: Manufacturer of Line Pipe Plain End at PSL 1; Manufacturer of Line Pipe Plain End at PSL 2

QMS Exclusions: Section 7.5.4, Customer Property, Section 7.3, Design and Development

**Effective Date: OCTOBER 22, 2007**  
**Expiration Date: OCTOBER 22, 2010**

To verify the authenticity of this license, go to [www.api.org/composelist](http://www.api.org/composelist).

American Petroleum Institute

Director of Certification Programs

2007 025

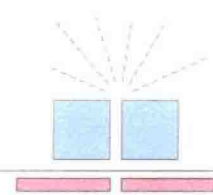




Strip Levelling



Square end cutting



Butt welding

## Registration Certificate



Certificate Number 995

01 February 2000  
Date of Initial Registration

16 May 2007  
Date of Last Issue

11 March 2012  
Date of Expiry

*This is to certify that the Quality System of*

### Al Jazeera Steel Products Co. SAOG

P.O. Box-40,  
Postal Code-327  
Sohar Industrial Estate  
Sultanate of Oman

*meets the requirements of ISO 9001: 2000*

*and is registered within the  
BM TRADA Certification scheme for approved Quality Systems*

*The Scope of the approval is as shown in the Schedule*

*The Company agrees to maintain its Quality System to ISO 9001:2000  
and use the Approved Quality System Mark in accordance with the Regulations  
Further clarifications regarding the scope of this certificate and the applicability  
of ISO 9001:2000 requirements may be obtained by consulting the organization.*

Signed on behalf of BM TRADA Certification Ltd

For verification of this certificate please visit [www.bmtrada.com](http://www.bmtrada.com)

© 2007 BM TRADA Certification Ltd. This certificate remains the property of  
BM TRADA Certification Ltd. All rights reserved. No part of this certificate may be reproduced without the prior written consent of BM TRADA Certification Ltd.

This certificate is valid from 11 March 2012 to 11 March 2015. It is subject to annual surveillance audits and a final certification audit. For more information please contact the certification body.



# Certificate of Compliance

Certificate Number: 052307 - EX15200  
Report Reference: Ex15200 March 9, 2007  
Issue Date: 2007 May 23

Page 1 of 2



Issued to: **AL Jazeera Steel Products Co. SAOG**

PO Box 40 Sohar Industrial Estate  
Sultanate Of Oman, 327 OM

*This is to certify that representative samples of*

**Black or Galvanized Steel Pipe**

Schedule 40, Grade A, steel sprinkler pipe 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 3-1/2, 4, 5, 6 in. and Grade B, 2, 2-1/2, 3, 3-1/2, 4, 5, 6 in. sizes.

*Have been investigated by Underwriters Laboratories Inc.® in accordance with the Standard(s) indicated on this Certificate.*

Standard(s) for Safety: UL 852 - "Metallic Sprinkler Pipe for Fire Protection Service."

Additional Information: See Page 2

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

The UL Listing Mark generally includes the following elements: (1) the UL Listing Mark, (2) the UL File Number (may be abbreviated as indicated by UL), and (3) the product category name (or short identifier) as indicated in the appropriate UL Listing.

Look for the UL Listing Mark on the product

Issued by:

Daniel Weaver  
Senior Vice President

Reviewed by:

Monica Westphal  
Vice President





## Certificate of Compliance

Certificate Number: 052307 - EX15200  
Report Reference: Ex15200 March 9, 2007  
Issue Date: 2007 May 23

Page 2 of 2



The products covered by this Report are intended for use in accordance with the National Fire Protection Association Standards: "Standard for the Installation of Sprinkler Systems", NFPA 13, "Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes", NFPA 13D, "Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height", NFPA 13R, "Standard for Water Spray Fixed Systems for Fire Protection", NFPA 15, and "Standard for Installation of Foam-Water Sprinkler and Foam-Water Spray Systems", NFPA 16.

ULS -

Authorized Signatory *Daniel F. Weems*

ULS -

Authorized Signatory *Mona Westphal*



Certificate GB08/73956

The management system of

### Al Jazeera Steel Products Co SOAG

Post Box No. 40, Postal Code 327, Road No. 3,  
Sohar Industrial Estate, Sohar, Sultanate of Oman

has been assessed and certified as meeting the requirements of

### Directive 89/106/EEC

Annex III.2 Factory Production Control  
Scope of registration

characterised by

Standard	Product
EN 10219-1:2006	Cold formed welded structural hollow sections of non-alloy and fine grain steels - Part 1: Technical delivery conditions

Note:

The manufacturer must keep an updated list of the products under system 2+

This certificate is valid from 24 January 2008 until 24 January 2012  
Issue 1. Certified 24 January 2008

Notified Body Number 0120

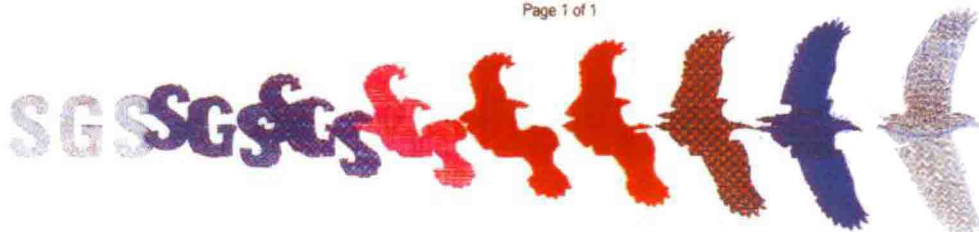
Authorised by

# CE 0120

SGS United Kingdom Ltd, Systems & Services Certification  
202B Worle Parkway, Weston-super-Mare, BS22 6WA UK  
t +44 (0)1934 522917 f +44 (0)1934 522137 www.sgs.com

SGS CE 01 0903

Page 1 of 1



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

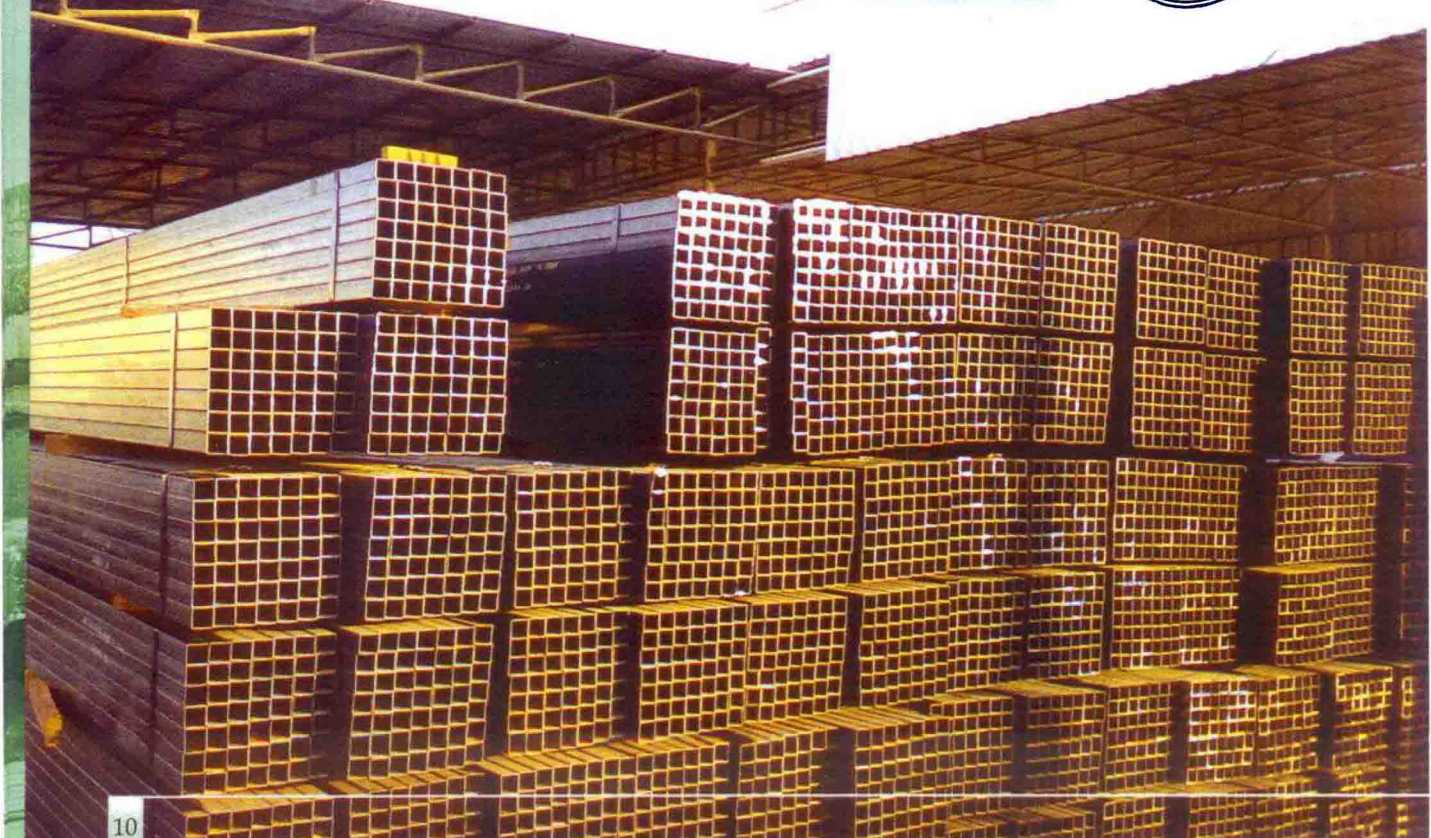
NOMINAL PIPE SIZE		OUTSIDE DIAMETER		WALL THICKNESS		WEIGHT OF BLACK PIPES				TEST PRESSURE				SOCKET DIMENSIONS				NO. OF PCS PER LIFT
		STANDARD		STANDARD		PLAIN END				GRADE A		GRADE B		MIN OUTSIDE DIA		MIN LENGTH		
INCH	MM	INCH	MM	INCH	MM	KG/MTR	MTR/TON	LB/FT	FT/TON	PSI	KPA	PSI	KPA	INCH	MM	INCH	MM	
1/2	15	0.840	21.3	0.109	2.77	1.27	787	0.85	2583	700	4800	700	4800	1.063	27.0	1.500	38.1	120
3/4	20	1.050	26.7	0.113	2.87	1.69	592	1.13	1941	700	4800	700	4800	1.313	33.4	1.563	39.7	84
1	25	1.315	33.4	0.133	3.38	2.50	400	1.68	1312	700	4800	700	4800	1.576	40.0	1.938	49.2	60
1.1/4	32	1.660	42.2	0.140	3.56	3.39	295	2.27	968	1200	8300	1300	9000	1.900	48.3	2.000	50.8	42
1.1/2	40	1.900	48.3	0.145	3.68	4.05	247	2.72	810	1200	8300	1300	9000	2.200	55.9	2.000	50.8	36
2	50	2.375	60.3	0.154	3.91	5.44	184	3.66	603	2300	15900	2500	17200	2.750	69.8	2.063	52.4	26
2.1/2	65	2.875	73.0	0.203	5.16	8.63	116	5.80	380	2500	17200	2500	17200	3.250	82.5	3.063	77.8	18
3	80	3.500	88.9	0.216	5.49	11.29	89	7.58	291	2220	15300	2500	17200	4.000	101.6	3.188	81.0	14
3.1/2	90	4.000	101.6	0.226	5.74	13.57	74	9.12	242	2030	14000	2370	16300	4.625	117.5	3.313	84.1	12
4	100	4.500	114.3	0.237	6.02	16.07	62	10.80	204	1900	13100	2210	15200	5.000	127.0	3.438	87.3	10
5	125	5.563	141.3	0.258	6.55	21.77	46	14.63	151	1670	11500	1950	13400	6.296	159.9	3.688	93.7	7
6	150	6.625	168.3	0.280	7.11	28.26	35	18.99	116	1520	10500	1780	12300	7.390	187.7	4.938	125.4	7
8	200	8.625	219.1	0.322	8.18	42.55	24	28.58	79	1340	9200	1570	10800	--	--	--	--	3

### CHEMICAL COMPOSITION (% MAX)

ELEMENT →	Carbon C	Manganese Mn	Phosphorus P	Sulphur S	Copper Cu	Nickel Ni	Chromium Cr	Molybdenum Mo	Vanadium V
GRADE-A	0.25	0.95	0.05	0.045	0.40	0.40	0.40	0.15	0.08
GRADE-B	0.30	1.20	0.05	0.045	0.40	0.40	0.40	0.15	0.08

HEAT TREATMENT - Weld seam of the ERW pipe in Grade-B shall be heat treated after welding to a minimum temperature of 1000°F[540°C] so that no untempered martensite remains.





## MECHANICAL PROPERTIES

Properties →	Tensile Strength		Yield Strength	
	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 INCH (MM)	SIZE TO INCH (MM)	TOLERANCE 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° -0°/+5° for sizes 2" NPS and above.

**BEND TEST** Applicable for sizes 2" NPS and below  
90° bending radius should be 6 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 / ft<sup>2</sup> [490 Gm / Mtr<sup>2</sup>]  
**AVERAGE** : 1.80 oz / ft<sup>2</sup> [550 Gm / Mtr<sup>2</sup>]

### MARKING

Each pipe is stenciled as "JAZEERA STEEL OMAN, ASTM A 53 GR A / B-ERW SCH 40 NPS-LENGTH-HEAT NO"



## TECHNICAL DATA OF BLACK STEEL PIPES CONFORMING TO API 5L PSL-1 & PSL-2

Outside Diameter		Wall Thickness		Weight		Minimum Test Pressure (Std)													
						Grade A		Grade B		Grade X-42		Grade X-46		Grade X-52		Grade X-56		Grade X-60	
Inch	mm	Inch	mm	lb/ft	kg/mtr	psi	kpa x 100	psi	kpa x 100	psi	kpa x 100	psi	kpa x 100	psi	kpa x 100	psi	kpa x 100	psi	kpa x 100
2.375	60.3	0.109	2.8	2.64	3.97	1650	115	1930	134	2310	162	2530	177	2860	200	3000	207	3000	207
		0.125	3.2	3.01	4.51	1890	132	2210	153	2650	185	2910	202	3000	207	3000	207	3000	207
		0.141	3.6	3.37	5.03	2140	148	2490	172	2990	207	3000	207	3000	207	3000	207	3000	207
		0.154	3.9	3.66	5.42	2330	161	2500	172	3000	207	3000	207	3000	207	3000	207	3000	207
		0.172	4.4	4.05	6.07	2500	172	2500	172	3000	207	3000	207	3000	207	3000	207	3000	207
		0.188	4.8	4.40	6.57	2500	172	2500	172	3000	207	3000	207	3000	207	3000	207	3000	207
2.875	73.0	0.109	2.8	3.22	4.85	1360	95	1590	111	1910	133	2090	146	2370	165	2550	178	2730	191
		0.125	3.2	3.67	5.51	1570	109	1830	127	2190	153	2400	167	2710	189	2920	203	3000	207
		0.141	3.6	4.12	6.16	1770	122	2060	143	2470	172	2710	188	3000	207	3000	207	3000	207
		0.156	4.0	4.53	6.81	1950	136	2280	158	2730	191	3000	207	3000	207	3000	207	3000	207
		0.172	4.4	4.97	7.44	2150	150	2500	172	3000	207	3000	207	3000	207	3000	207	3000	207
		0.188	4.8	5.40	8.07	2350	163	2500	172	3000	207	3000	207	3000	207	3000	207	3000	207
3.500	88.9	0.203	5.2	5.80	8.69	2500	172	2500	172	3000	207	3000	207	3000	207	3000	207	3000	207
		0.109	2.8	3.95	5.95	1120	78	1310	91	1570	110	1720	120	1940	136	2090	146	2240	156
		0.125	3.2	4.51	6.76	1290	89	1500	104	1800	125	1970	137	2230	155	2400	167	2570	179
		0.141	3.6	5.06	7.57	1450	101	1690	117	2030	141	2220	154	2510	174	2710	188	2900	201
		0.156	4.0	5.58	8.37	1600	112	1870	130	2250	157	2460	171	2780	194	3000	207	3000	207
		0.172	4.4	6.12	9.17	1770	123	2060	143	2480	172	2710	188	3000	207	3000	207	3000	207
4.000	101.6	0.188	4.8	6.66	9.95	1930	134	2260	156	2710	188	2970	205	3000	207	3000	207	3000	207
		0.216	5.5	7.58	11.31	2220	154	2500	172	3000	207	3000	207	3000	207	3000	207	3000	207
		0.109	2.8	4.53	6.82	980	68	1140	80	1370	96	1500	105	1700	119	1830	128	1960	137
		0.125	3.2	5.18	7.76	1130	78	1310	91	1580	110	1730	120	1950	136	2100	146	2250	156
		0.141	3.6	5.82	8.70	1270	88	1480	102	1780	123	1950	135	2200	153	2370	164	2540	176
		0.156	4.0	6.41	9.63	1400	98	1640	114	1970	137	2150	150	2430	170	2620	182	2810	196
		0.172	4.4	7.04	10.55	1550	108	1810	125	2170	151	2370	165	2680	187	2890	201	3000	207
		0.188	4.8	7.66	11.46	1690	117	1970	137	2370	164	2590	180	2930	204	3000	207	3000	207
0.226	5.7	9.12	13.48	2030	139	2370	162	2850	195	3000	207	3000	207	3000	207	3000	207		
0.250	6.4	10.02	15.02	2250	156	2630	182	3000	207	3000	207	3000	207	3000	207	3000	207		



Outside Diameter		Wall Thickness		Weight		Minimum Test Pressure (Std)													
						Grade A		Grade B		Grade X-42		Grade X-46		Grade X-52		Grade X-56		Grade X-60	
Inch	mm	Inch	mm	lb/ft	kg/mtr	psi	kpa x 100	psi	kpa x 100	psi	kpa x 100	psi	kpa x 100	psi	kpa x 100	psi	kpa x 100	psi	kpa x 100
4.500	114.3	0.125	3.2	5.85	8.77	1000	70	1170	81	1400	97	1530	106	1730	121	1870	130	2000	139
		0.141	3.6	6.57	9.83	1130	78	1320	91	1580	110	1730	120	1960	136	2110	146	2260	156
		0.156	4.0	7.24	10.88	1250	87	1460	101	1750	122	1910	133	2160	151	2330	162	2500	174
		0.172	4.4	7.96	11.92	1380	96	1610	111	1930	134	2110	146	2390	166	2570	178	2750	191
		0.188	4.8	8.67	12.96	1500	104	1750	121	2110	146	2310	160	2610	181	2810	195	3000	207
		0.203	5.2	9.32	13.99	1620	113	1890	132	2270	158	2490	173	2810	196	3000	207	3000	207
		0.219	5.6	10.02	15.01	1750	122	2040	142	2450	170	2690	186	3000	207	3000	207	3000	207
		0.237	6.0	10.80	16.02	1900	130	2210	152	2650	183	2910	200	3000	207	3000	207	3000	207
5.563	141.3	0.125	3.2	7.27	10.90	810	56	940	65	1130	79	1240	86	1400	98	1510	105	1620	113
		0.156	4.0	9.02	13.54	1010	70	1180	82	1410	99	1550	108	1750	122	1880	131	2020	141
		0.188	4.8	10.80	16.16	1220	84	1420	98	1700	118	1870	129	2110	146	2270	157	2430	169
		0.219	5.6	12.51	18.74	1420	98	1650	115	1980	138	2170	151	2460	171	2650	184	2830	197
		0.258	6.6	14.63	21.92	1670	116	1950	135	2340	163	2560	178	2890	201	3000	207	3000	207
		0.281	7.1	15.87	23.50	1820	125	2120	145	2550	175	2790	191	3000	207	3000	207	3000	207
6.625	168.3	0.125	3.2	8.69	13.03	680	47	790	55	1190	83	1300	90	1470	102	1580	110	1700	118
		0.141	3.6	9.77	14.62	770	53	890	62	1340	93	1470	102	1660	115	1790	124	1920	133
		0.156	4.0	10.79	16.21	850	59	990	69	1480	103	1620	113	1840	128	1980	138	2120	148
		0.172	4.4	11.87	17.78	930	65	1090	76	1640	114	1790	124	2030	141	2180	151	2340	162
		0.188	4.8	12.94	19.35	1020	71	1190	82	1790	124	1960	136	2210	154	2380	165	2550	177
		0.203	5.2	13.94	20.91	1100	77	1290	89	1930	134	2110	147	2390	166	2570	179	2760	192
		0.219	5.6	15.00	22.47	1190	83	1390	96	2080	145	2280	158	2580	179	2780	193	2980	207
		0.250	6.4	17.04	25.55	1360	94	1580	110	2380	165	2600	181	2940	205	3000	207	3000	207
		0.280	7.1	18.99	28.22	1520	105	1780	122	2660	184	2920	201	3000	207	3000	207	3000	207
		0.312	7.9	21.06	31.25	1700	117	1980	136	2970	204	3000	207	3000	207	3000	207	3000	207
8.625	219.1	0.156	4.0	14.12	21.22	650	45	760	53	1140	79	1250	87	1410	98	1520	106	1630	113
		0.188	4.8	16.96	25.37	780	54	920	63	1370	95	1500	104	1700	118	1830	127	1960	136
		0.203	5.2	18.28	27.43	850	59	990	69	1480	103	1620	113	1840	128	1980	137	2120	147
		0.219	5.6	19.68	29.48	910	63	1070	74	1600	111	1750	122	1980	138	2130	148	2290	159
		0.250	6.4	22.38	33.57	1040	73	1220	84	1830	127	2000	139	2260	157	2430	169	2610	181
		0.277	7.0	24.72	36.61	1160	79	1350	92	2020	139	2220	152	2510	172	2700	185	2890	198
		0.312	7.9	27.73	41.14	1300	90	1520	104	2280	157	2500	171	2820	194	3000	207	3000	207
		0.322	8.2	28.58	42.65	1340	93	1570	108	2350	163	2580	178	2910	202	3000	207	3000	207
		0.344	8.7	30.45	45.14	1440	99	1680	115	2510	173	2750	189	3000	207	3000	207	3000	207
		0.375	9.5	33.07	49.10	1570	108	1830	125	2740	189	3000	206	3000	207	3000	207	3000	207

Cooling by Water/Air

Sizing

Eddy Current Testing

Turk Head



### CHEMICAL COMPOSITION / MECHANICAL PROPERTIES FOR PSL-2

GRADE	% Carbon C (max)	% Manganese Mn (max)	% Phosphorus P (max)	% Sulfur S (max)	% Titanium Ti (max)	Yield Strength psi (MPa)		Tensile Strength psi (MPa)		Elongation in 2" (50.8mm)
						Min	Max	Min	Max	Min Percent
A	0.22	0.90	0.030	0.030	--	30,000 (207)	--	48,000 (331)	--	*
B	0.26	1.20	0.030	0.030	0.040	35,000 (241)	--	60,000 (414)	--	*
X-42	0.26	1.30	0.030	0.030	0.040	42,000 (290)	--	60,000 (414)	--	*
X-46	0.26	1.40	0.030	0.030	0.040	46,000 (317)	--	63,000 (434)	--	*
X-52	0.26	1.40	0.030	0.030	0.040	52,000 (359)	--	66,000 (455)	--	*
X-56	0.26	1.40	0.030	0.030	0.040	56,000 (386)	--	71,000 (490)	--	*
X-60	0.26	1.40	0.030	0.030	0.040	60,000 (414)	--	75,000 (517)	--	*

### CHEMICAL COMPOSITION / MECHANICAL PROPERTIES FOR PSL-1

GRADE	% Carbon C (max)	% Manganese Mn (max)	% Phosphorus P (max)	% Sulfur S (max)	% Titanium Ti (max)	Yield Strength psi (MPa)		Tensile Strength psi (MPa)		Elongation in 2" (50.8mm)	Charpy Impact Energy ft-lb (J) min	
						Min	Max	Min	Max	Min Percent	Long.	Trans.
B	0.22	1.20	0.025	0.015	0.040	35,000 (241)	65,000 (448)	60,000 (414)	110,000 (758)	*	30 (41)	20 (27)
X-42	0.22	1.30	0.025	0.015	0.040	42,000 (290)	72,000 (496)	60,000 (414)	110,000 (758)	*	30 (41)	20 (27)
X-46	0.22	1.40	0.025	0.015	0.040	46,000 (317)	76,000 (524)	63,000 (434)	110,000 (758)	*	30 (41)	20 (27)
X-52	0.22	1.40	0.025	0.015	0.040	52,000 (359)	77,000 (531)	66,000 (455)	110,000 (758)	*	30 (41)	20 (27)
X-56	0.22	1.40	0.025	0.015	0.040	56,000 (386)	79,000 (544)	71,000 (490)	110,000 (758)	*	30 (41)	20 (27)
X-60	0.22	1.40	0.025	0.015	0.040	60,000 (414)	82,000 (565)	75,000 (517)	110,000 (758)	*	30 (41)	20 (27)

\* The minimum elongation in 2" (50.8mm) shall be determined by the following equation

U.S. Customary Unit Equation

$$e = 625,000 * (A^{0.2}) / (U^{0.9})$$

where e=minimum elongation in 2" (50.8mm)

A=applicable tensile test specimen area inch<sup>2</sup> (mm<sup>2</sup>)

U=specified minimum ultimate tensile strength psi (MPa)

SI Unit Equation

$$e = 1,944 * (A^{0.2}) / (U^{0.9})$$

### MAXIMUM CARBON EQUIVALENT (PSL-2 only)

For %C ≤ 0.12; CE(Pcm) shall be applicable

$$CE(Pcm) = C + (Si/30) + (Mn/20) + (Cu/20) + (Ni/60) + (Cr/20) + (Mo/15) + (V/10) + 5B$$

$$\text{Max CE(Pcm)} = 0.25 \%$$

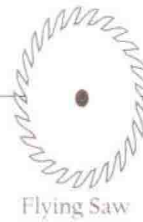
For %C > 0.12; CE(IIW) shall be applicable

$$CE(IIW) = C + (Mn/6) + (Cr + Mo + V)/5 + (Ni + Cu)/15$$

$$\text{Max CE(IIW)} = 0.43 \%$$







**TOLERANCES :**

**OUTSIDE DIAMETER**

FOR PIPE BODY = + / -0.75%  
 AT PIPE ENDS = -0.40 mm / +1.6 mm

**THICKNESS**

SIZE	GRADE B OR LOWER	GRADE X-42 OR HIGHER
≤ 2-7/8	+20 / -12.5 %	+15 / -12.5 %
> 2-7/8	+15 / -12.5 %	+15 / -12.5 %

**WEIGHT**

For single lengths +10 / -3.5%  
 Order Items, Carloads ≥ 40,000 lb (18144 kg) -1.75%  
 Order Items, Carloads < 40,000 lb (18144 kg) -3.50%

**FLATTENING TEST**

Applicable for sizes ≥ 2-7/8  
 For Weld : Flatten upto 1/2 of OD  
 For Material : Flatten upto 1/3 of OD

**BEND TEST**

Applicable for sizes ≤ 2-3/8  
 Cold bending through 90° around mandrel having dia ≤ 12times pipe OD

**NON DESTRUCTIVE TEST**

Eddy Current Testing 100% on-line  
 Ultrasonic Testing for all pipe ends upto min distance 8" (200mm)

**HEAT TREATMENT**

For Grades higher than X-42 - seam normalizing heat treatment  
 For Grades X-42 or lower - seam should be heat treated or procesed in a way that no untempered martensite remains

**HYDROSTATIC TEST**

100% hydrotesting at standard test pressures

**END FINISH**

Bevel Ends at an angle 30° / +5° / -0°

**API MONOGRAM MARKING** Following sequence is being followed



LICENCE NO SL-0684

Month & Year

AJSP SPEC 5L /SIZE/THK/LENGTH/GRADE/PSL/E/HN/xxxx TESTED



## TECHNICAL DATA OF BLACK AND GALVANIZED STEEL PIPES CONFORMING TO EN-10219-1 & 2 CHEMICAL COMPOSITION / MECHANICAL PROPERTIES OF NON ALLOY STEEL

GRADE	% Carbon C (max)	% Silicon Si (max)	% Manganese Mn (max)	% Phosphorus P (max)	% Sulfur S (max)	% Nitrogen N (max)	Max Carbon Eq CEV	Minimum Yield Strength ReH (MPa)	Tensile Strength R <sub>m</sub> (MPa)		Min Elongation (%)	Minimum Impact Energy (J)		
									Thk<3mm	Thk≥3mm		-20 <sup>0</sup> C	0 <sup>0</sup> C	20 <sup>0</sup> C
S235JRH	0.17	--	1.40	0.040	0.040	0.009	0.35	235	360-510	360-510	24	--	--	27
S275J0H	0.20	--	1.50	0.035	0.035	0.009	0.40	275	430-580	410-560	20	--	27	--
S275J2H	0.20	--	1.50	0.030	0.030	--	0.40	275	430-580	410-560	20	27	--	--
S355J0H	0.22	0.55	1.60	0.035	0.035	0.009	0.45	355	510-680	470-630	20	--	27	--
S355J2H	0.22	0.55	1.60	0.030	0.030	--	0.45	355	510-680	470-630	20	27	--	--
S355K2H	0.22	0.55	1.60	0.030	0.030	--	0.45	355	510-680	470-630	20	40	--	--

**CARBON EQUIVALENT:** Max carbon equivalent shall be  
 $CEV = C + (Mn/6) + (Cr + Mo + V)/5 + (Ni + Cu)/15$

**DIMENSIONS AND TOLERANCES:** All dimensions and tolerances shall be according to EN 10219:2006 Part-2

### SIZE RANGE

**CHS** : 21.3 mm OD to 219.1 mm OD

**SHS** : 12x12, 16x16, 19x19, 25x25, 30x30, 31x31, 38x38, 50x50, 75x75, 80x80, 100x100, 125x125 (mm x mm)

**RHS** : 31x19, 40x20, 40x25, 50x25, 60x30, 60x40, 80x40, 100x50, 120x60, 120x100, 125x50, 125x75, 150x75, 150x100 (mm x mm)





## TOLERANCES

CHARACTERIC	CIRCULAR HOLLOW SECTIONS	SQUARE AND RECTANGULAR HOLLOW SECTIONS	
		Side Length (mm)	Tolerance
OUTSIDE DIMENSIONS (D, B and H)	+/- 1% with a minimum of +/-0.50 mm & a maximum of +/-1.0 mm	H,B<100	+/- 1% with a min +/-0.5mm
		100≤ H,B ≤200	+/- 0.8%
		H,B >200	+/- 0.6%
THICKNESS	For D<406.4mm: +/-10% for Thickness≤5.0mm +/-0.5mm for Thickness>5.0mm	+/-10% for Thickness ≤5.0mm +/-0.5mm for Thickness >5.0mm	
	For D<406.4mm: +/-10% with a maximum of +/- 2.0mm		
OUT OF ROUNDNESS	2% for hollow sections having a diameter to thickness ratio≤100	--	
CONCAVITY / CONVEXITY	--	Max 0.8% with a minimum of 0.5mm	
SQUARENESS OF SIDE	--	90 <sup>0</sup> +/- 1 <sup>0</sup>	
EXTERNAL CORNER PROFILE	--	T≤6.0mm 1.6T to 2.4T	
		6.0<T≤10.0mm 2.0T to 3.0T	
		T>10.0mm 2.4T to 3.6T	
TWIST	--	2mm plus 0.5mm/m length	
STRAIGHTNESS	0.20% of total length and 3mm over any 1m length	0.15% of total length and 3mm over any 1m length	
MASS PER UNIT LENGTH	+/- 6% on individual delivered lengths		
MAX WELD BEAD HEIGHT	3.5mm for T≤14.2mm and 4.8mm for T>14.2mm		

NON DESTRUCTIVE TEST

Eddy Current Testing 100% on-line

MARKING EN 10219 STEEL GRADE / JAZEERA STEEL, OMAN / SIZE / THICKNESS / LENGTH / HEAT NO xxxxxxxx



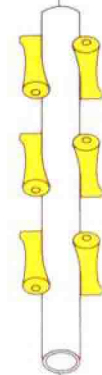
**TABLE-1 : TECHNICAL DATA OF BLACK AND GALVANIZED STEEL PIPES  
CONFORMING TO EN 10255:2004**

CLASS	SIZE		OUTSIDE DIAMETER				WALL THICKNESS		WEIGHT OF BLACK PIPES						WEIGHT OF GALVANIZED PIPES (CALCULATED)						NO OF PIPES PACKED PER STANDARD BUNDLE TONNE APPROX
			MAX		MIN				PLAIN ENDED			SCREWED & SOCKETED			PLAIN ENDED			SCREWED & SOCKETED			
	DN	Specified OD	Inch	mm	Inch	mm	Inch	mm	Kg/Mtr	mtr/ton	ft/ton	Kg/Mtr	mtr/ton	ft/ton	Kg/Mtr	mtr/ton	ft/ton	Kg/Mtr	mtr/ton	ft/ton	
TYPE L2	1/2	21.3	0.843	21.4	0.827	21.0	0.079	2.00	0.947	1056	3464	0.956	1046	3432	0.995	1005	3297	1.004	996	3268	160
	3/4	26.9	1.059	26.9	1.039	26.4	0.091	2.30	1.380	725	2377	1.390	719	2360	1.441	694	2277	1.451	689	2261	110
	1	33.7	1.331	33.8	1.307	33.2	0.102	2.60	1.980	505	1657	2.000	500	1640	2.058	486	1594	2.078	481	1579	80
	1.1/4	42.4	1.673	42.5	1.650	41.9	0.102	2.60	2.540	394	1292	2.570	389	1277	2.640	379	1243	2.670	375	1229	61
	1.1/2	48.3	1.906	48.4	1.882	47.8	0.114	2.90	3.230	310	1016	3.270	306	1003	3.344	299	981	3.384	296	970	51
	2	60.3	2.370	60.2	2.346	59.6	0.114	2.90	4.080	245	804	4.150	241	791	4.223	237	777	4.293	233	764	37
	2.1/2	76.1	2.992	76.0	2.961	75.2	0.126	3.20	5.710	175	575	5.830	172	563	5.892	170	557	6.012	166	546	27
	3	88.9	3.492	88.7	3.461	87.9	0.126	3.20	6.720	149	488	6.890	145	476	6.934	144	473	7.104	141	462	24
4	114.3	4.484	113.9	4.449	113.0	0.142	3.60	9.750	103	336	10.000	100	328	10.026	100	327	10.276	97	319	16	
MEDIUM SERIES	1/2	21.3	0.858	21.8	0.827	21.0	0.102	2.60	1.210	826	2711	1.220	820	2689	1.257	796	2610	1.266	790	2592	130
	3/4	26.9	1.075	27.3	1.043	26.5	0.102	2.60	1.560	641	2103	1.570	637	2090	1.621	617	2024	1.631	613	2012	100
	1	33.7	1.346	34.2	1.311	33.3	0.126	3.20	2.410	415	1361	2.430	412	1350	2.487	402	1319	2.507	399	1309	65
	1.1/4	42.4	1.689	42.9	1.654	42.0	0.126	3.20	3.100	323	1058	3.130	319	1048	3.199	313	1026	3.229	310	1016	51
	1.1/2	48.3	1.921	48.8	1.886	47.9	0.126	3.20	3.560	281	922	3.600	278	911	3.684	271	891	3.724	269	881	44
	2	60.3	2.394	60.8	2.350	59.7	0.142	3.60	5.030	199	652	5.100	196	643	5.172	193	634	5.242	191	626	30
	2.1/2	76.1	3.016	76.6	2.965	75.3	0.142	3.60	6.420	156	511	6.540	153	502	6.612	151	496	6.732	149	487	24
	3	88.9	3.524	89.5	3.465	88.0	0.157	4.00	8.360	120	392	8.530	117	385	8.583	117	382	8.753	114	375	19
	4	114.3	4.528	115.0	4.453	113.1	0.177	4.50	12.200	82	269	12.500	80	262	12.476	80	263	12.726	79	258	14
	5	139.7	5.543	140.8	5.453	138.5	0.197	5.00	16.600	60	198	17.100	58	192	16.938	59	194	17.438	57	188	10
6	165.1	6.555	166.5	6.453	163.9	0.197	5.00	19.800	51	166	20.400	49	161	20.102	50	163	20.702	48	158	7	
HEAVY SERIES	1/2	21.3	0.858	21.8	0.827	21.0	0.126	3.20	1.440	694	2278	1.450	690	2263	1.486	673	2208	1.495	669	2195	110
	3/4	26.9	1.075	27.3	1.043	26.5	0.126	3.20	1.870	535	1754	1.880	532	1745	1.930	518	1700	1.940	515	1691	80
	1	33.7	1.346	34.2	1.311	33.3	0.157	4.00	2.930	341	1120	2.950	339	1112	3.015	332	1088	3.035	329	1081	55
	1.1/4	42.4	1.689	42.9	1.654	42.0	0.157	4.00	3.790	264	866	3.820	262	859	3.897	257	842	3.927	255	835	44
	1.1/2	48.3	1.921	48.8	1.886	47.9	0.157	4.00	4.370	229	751	4.410	227	744	4.492	223	730	4.532	221	724	37
	2	60.3	2.394	60.8	2.350	59.7	0.177	4.50	6.190	162	530	6.260	160	524	6.330	158	518	6.400	156	513	27
	2.1/2	76.1	3.016	76.6	2.965	75.3	0.177	4.50	7.930	126	414	8.050	124	408	8.110	123	405	8.230	122	399	20
	3	88.9	3.524	89.5	3.465	88.0	0.197	5.00	10.300	97	319	10.500	95	312	10.510	95	312	10.680	94	307	16
	4	114.3	4.528	115.0	4.453	113.1	0.213	5.40	14.500	69	226	14.800	68	222	14.774	68	222	15.024	67	218	12
	5	139.7	5.543	140.8	5.453	138.5	0.213	5.40	17.900	56	183	18.400	54	178	18.238	55	180	18.738	53	175	10
6	165.1	6.555	166.5	6.453	163.9	0.213	5.40	21.300	47	154	21.900	46	150	21.702	46	151	22.302	45	147	7	



**TABLE-2 : TECHNICAL DATA OF BLACK AND GALVANIZED STEEL PIPES  
CONFORMING TO EN 10255:2004**

CLASS	SIZE		OUTSIDE DIAMETER				WALL THICKNESS		WEIGHT OF BLACK PIPES						WEIGHT OF GALVANIZED PIPES (CALCULATED)						NO OF PIPES PACKED PER STANDARD BUNDLE TONNE APPROX
			MAX		MIN				PLAIN ENDED			SCREWED & SOCKETED			PLAIN ENDED			SCREWED & SOCKETED			
	DN	Specified OD	Inch	mm	Inch	mm	Inch	mm	Kg/Mtr	mtr/ton	ft/ton	Kg/Mtr	mtr/ton	ft/ton	Kg/Mtr	mtr/ton	ft/ton	Kg/Mtr	mtr/ton	ft/ton	
TYPE L	1/2	21.3	0.854	21.7	0.827	21.0	0.091	2.30	1.080	926	3038	1.090	917	3010	1.126	888	2914	1.135	881	2891	160
	3/4	26.9	1.067	27.1	1.039	26.4	0.091	2.30	1.400	714	2343	1.410	709	2327	1.441	694	2277	1.451	689	2261	110
	1	33.7	1.339	34.0	1.307	33.2	0.114	2.90	2.200	455	1491	2.220	450	1478	2.280	439	1439	2.300	435	1426	80
	1.1/4	42.4	1.681	42.7	1.650	41.9	0.114	2.90	2.820	355	1163	2.850	351	1151	2.924	342	1122	2.954	339	1111	61
	1.1/2	48.3	1.913	48.6	1.882	47.8	0.114	2.90	3.250	308	1009	3.290	304	997	3.344	299	981	3.384	296	970	51
	2	60.3	2.390	60.7	2.346	59.6	0.126	3.20	4.510	222	727	4.580	218	716	4.650	215	706	4.720	212	695	37
	2.1/2	76.1	2.992	76.0	2.961	75.2	0.126	3.20	5.750	174	571	5.870	170	559	5.892	170	557	6.012	166	546	27
	3	88.9	3.492	88.7	3.461	87.9	0.126	3.20	6.760	148	485	6.930	144	473	6.934	144	473	7.104	141	462	24
	3.1/2	101.6	3.984	101.2	3.949	100.3	0.142	3.60	8.700	115	377	8.880	113	369	8.947	112	367	9.126	110	360	18
	4	114.3	4.484	113.9	4.449	113.0	0.142	3.60	9.830	102	334	10.100	99	325	10.026	100	327	10.276	97	319	16
	5	139.7	5.543	140.8	5.453	138.5	0.177	4.50	15.000	67	219	15.500	65	212	15.344	65	214	15.844	63	207	10
	6	165.1	6.555	166.5	6.453	163.9	0.177	4.50	17.800	56	184	18.400	54	178	18.227	55	180	18.827	53	174	7
TYPE L1	1/2	21.3	0.854	21.7	0.827	21.0	0.091	2.30	1.080	926	3038	1.090	917	3010	1.126	888	2914	1.135	881	2891	160
	3/4	26.9	1.067	27.1	1.039	26.4	0.091	2.30	1.390	719	2360	1.400	714	2343	1.441	694	2277	1.451	689	2261	110
	1	33.7	1.339	34.0	1.307	33.2	0.114	2.90	2.200	455	1491	2.220	450	1478	2.280	439	1439	2.300	435	1426	80
	1.1/4	42.4	1.681	42.7	1.650	41.9	0.114	2.90	2.820	355	1163	2.850	351	1151	2.924	342	1122	2.954	339	1111	61
	1.1/2	48.3	1.913	48.6	1.882	47.8	0.114	2.90	3.240	309	1013	3.280	305	1000	3.344	299	981	3.384	296	970	51
	2	60.3	2.390	60.7	2.346	59.6	0.126	3.20	4.490	223	731	4.560	219	719	4.650	215	706	4.720	212	695	37
	2.1/2	76.1	3.004	76.3	2.961	75.2	0.126	3.20	5.730	175	573	5.850	171	561	5.892	170	557	6.012	166	546	27
	3	88.9	3.520	89.4	3.461	87.9	0.142	3.60	7.550	132	435	7.720	130	425	7.787	128	421	7.957	126	412	24
	4	114.3	4.524	114.9	4.449	113.0	0.157	4.00	10.800	93	304	11.100	90	296	11.158	90	294	11.408	88	288	16



## TOLERANCES :

OUTSIDE DIAMETER	: As per Table-1 / 2
THICKNESS	: +/-10% for M, H series and Type L -8% with plus tolerance limited by the mass tolerance for Types L1 and L2
MASS	: +/-7.5% for M, H series and Type L (for lot≥10tons) +10 / -8 % on individual tubes for types L1 and L2

## MECHANICAL PROPERTIES     Steel grade S195T

YIELD STRENGTH	: 195 MPa (Min)
TENSILE STRENGTH	: 320-520 MPa
ELONGATION	: 20% (Min) on Gauge Length 5.65 x Sq. Root of Cross Sectional Area

## CHEMICAL PROPERTIES

% C (Max)	% Mn (Max)	% P (Max)	% S (Max)
0.20	1.40	0.035	0.030

## BEND TEST     : For sizes 2" and below

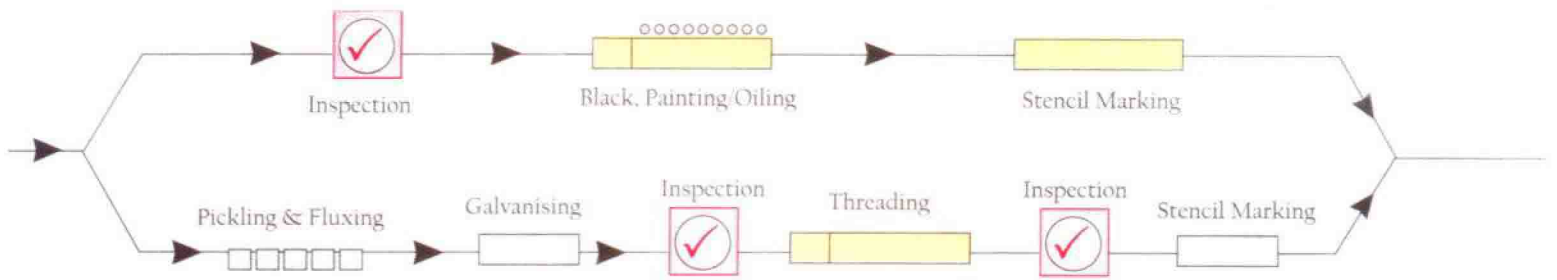
Diameter D	21.3	26.9	33.7	42.4	48.3	60.3
Bending Radius	65	85	100	150	170	220

Note-Weld shall be placed at 90° to the plane of bending.

## FLATTENING TEST     : For sizes above 2" in Two Stages

- For Weld Test : Flatten upto 75% of Original Tube OD
- For Material other than Weld : Flatten upto 60% of Original Tube OD





**LEAK TIGHTNESS TEST** : 100% Hydrotesting at 50 Bar OR On-Line Eddy Current (NDT) Test

**END FINISH** : Plain End / Screwed & Socketed

**GALVANIZING** : As per EN 10240

**BLACK PAINTING** : Uniform Black Paint Coating

**THREADING** : As per EN 10226 - 1 / 2

**COLOUR CODING**

Series / Type	Medium	Heavy	L	L1	L2
Colour Code	Blue	Red	Green	White	Brown

**STENCILING** : Each Pipe shall be Stenciled with "JAZEERA STEEL OMAN-W-EN 10255-SERIES/TYPE-SIZE-LENGTH"

**PACKING** : Hexagonal Type



## TECHNICAL DATA FOR METAL SCAFFOLDING AS PER SPECIFICATION BS EN 39 : 2001

Outside Diameter		Thickness		Weight per unit length	
Inches	mm	Inches	mm	lbs/foot	kg / m
1.1/2	48.3	0.126	3.2	2.392	3.56
1.1/2	48.3	0.157	4.0	2.937	4.37

### TOLERANCES

Outside Diameter	Thickness	Weight
± 0.5mm	-10%	-7.5% On Single Tube

### STEEL GRADE

: S235GT

### CHEMICAL COMPOSITION

% C (Max)	% Si (Max)	% Mn (Max)	% P (Max)	% S (Max)	% Al (Max)
0.20	0.05	1.40	0.040	0.045	0.020

### MECHANICAL PROPERTIES

YIELD STRENGTH : 235 MPa (Min)  
 TENSILE STRENGTH : 340-520 MPa  
 ELONGATION : 24% (Min) on Gauge Length  
 5.65 x Sq. Root of Cross Sectional Area

END FINISH : Square Cut

STRAIGHTNESS : 1 mm in 500 mm length.

### FLATTENING TEST

a. For Weld Test : Flatten upto 75% of Original Tube OD  
 b. For Material other than Weld : Flatten upto 60% of Original Tube OD

ZINC COATING : 40 Microns Minimum Outside

MARKING : "EN 39 AJSP 3" for 3.2mm  
 "EN 39 AJSP 4" for 4.0mm

### DELIVERY CONDITIONS

a. As Rolled Condition (Without Protection)  
 b. Hot Dip Galvanized







Hydro Testing

## TECHNICAL DATA OF BLACK AND HOT DIP GALVANIZED STEEL PIPES CONFORMING TO ASTM A 135/A795 GRADE A / B

NOMINAL PIPE SIZE		OUTSIDE DIAMETER		WALL THICKNESS		WEIGHT OF BLACK PIPES				TEST PRESSURE	
		STANDARD		STANDARD		PLAIN END PIPES					
INCH	MM	INCH	MM	INCH	MM	KG/MTR	MTR/TON	LB/FT	FT/TON	PSI	KPA
3/4	20	1.050	26.7	0.083*	2.11	1.28	781	0.86	2562	700	4830
1	25	1.315	33.4	0.109*	2.77	2.09	478	1.41	1568	700	4830
1.1/4	32	1.660	42.2	0.109*	2.77	2.69	372	1.81	1221	1000	6890
1.1/2	40	1.900	48.30	0.109*	2.77	3.11	322	2.09	1056	1000	6890
2	50	2.375	60.3	0.109*	2.77	3.93	254	2.64	833	1000	6890
2.1/2	65	2.875	73.0	0.120*	3.05	5.26	190	3.53	623	1000	6890
3	80	3.500	88.9	0.120*	3.05	6.46	155	4.34	509	1000	6890
3.1/2	90	4.000	101.6	0.120*	3.05	7.41	135	4.98	443	1200	8270
4	100	4.500	114.3	0.120*	3.05	8.37	119	5.62	390	1200	8270
5	125	5.563	141.3	0.134*	3.40	11.58	86	7.78	283	1200	8270
6	150	6.625	168.3	0.134*	3.40	13.85	72	9.30	237	1000	6890
8	200	8.625	219.1	0.188**	4.78	25.26	40	16.96	130	800	5520

\* Schedule 10 Thickness

\*\* Not Schedule 10

### CHEMICAL PROPERTIES

ELEMENT →	Carbon C	Manganese Mn	Phosphorus P	Sulphur S
GRADE-A	0.25	0.95	0.035	0.035
GRADE-B	0.30	1.20	0.035	0.035



### MECHANICAL PROPERTIES

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

Min percent elongation in 2" (50mm) is

% El (Grade-A) = 56t + 16.5

% El (Grade-B) = 48t + 14

Where t = specified wall thickness (inch)

### TOLERANCES

#### OUTSIDE DIAMETER

SIZE FROM	SIZE TO	TOLERANCE INCH(MM)	
		POSITIVE	NEGATIVE
3/4 (20)	1.1/2(40)	1/64 (0.40)	1/32 (0.80)
2 (50)	8 (200)	1% OF OD	1% OF OD

#### THICKNESS

12.5% max under the nominal wall thickness.

#### WEIGHT

+/-10% on calculated standard nominal weight.

### MARKING

Each pipe is stenciled as "JAZEERA STEEL OMAN, ASTM A135/A795 GR A / B-ERW SCH 10(or Thk-Inch) NPS-LENGTH-HEAT NO"

### HEAT TREATMENT

Weld seam of the ERW pipe in Grade-B shall be heat treated after welding to a minimum temperature of 1000°F [540°C] so that no untempered martensite remains.

### ZINC COATING

MINIMUM : 1.30 oz / ft<sup>2</sup> [400 Gm / Mtr<sup>2</sup>]

AVERAGE : 1.50 oz / ft<sup>2</sup> [460 Gm / Mtr<sup>2</sup>]

### FLATTENING TEST

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.

## TECHNICAL DATA OF BLACK AND HOT DIP GALVANIZED STEEL PIPES CONFORMING TO ISO 65-1981 FOR FABRICATION AND SHAPING BY NATURAL TECHNIQUES

CLASS	NOMINAL PIPE SIZE		OUTSIDE DIAMETER				WALL THICKNESS		WEIGHT OF BLACK PIPES								NO OF PIECES PER LIFT
			MINIMUM		MAXIMUM				PLAIN END PIPES				SCREWED AND SOCKETED PIPES				
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	KG/MTR	MTR/TON	LBS/FT	FT/TON	KG/MTR	MTR/TON	LBS/FT	FT/TON	
LIGHT - 1	1/2	15	0.827	21.00	0.854	21.70	0.091	2.30	1.080	926	0.726	3038	1.090	917	0.732	3010	130
	3/4	20	1.039	26.40	1.067	27.10	0.091	2.30	1.390	719	0.934	2360	1.400	714	0.941	2343	100
	1	25	1.307	33.20	1.339	34.00	0.114	2.90	2.200	455	1.478	1491	2.220	450	1.492	1478	65
	1.1/4	32	1.650	41.90	1.681	42.70	0.114	2.90	2.820	355	1.895	1163	2.850	351	1.915	1151	51
	1.1/2	40	1.882	47.80	1.913	48.60	0.114	2.90	3.240	309	2.177	1013	3.280	305	2.204	1000	44
	2	50	2.346	59.60	2.390	60.70	0.126	3.20	4.490	223	3.017	731	4.560	219	3.064	719	30
	2.1/2	65	2.961	75.20	3.004	76.30	0.126	3.20	5.730	175	3.850	573	5.850	171	3.931	561	24
	3	80	3.461	87.90	3.520	89.40	0.142	3.60	7.550	132	5.073	435	7.720	130	5.188	425	19
4	100	4.449	113.00	4.524	114.90	0.157	4.00	10.800	93	7.257	304	11.100	90	7.459	296	14	
LIGHT - 2	1/2	15	0.827	21.00	0.843	21.40	0.079	2.00	0.947	1056	0.636	3464	0.956	1046	0.642	3432	160
	3/4	20	1.039	26.40	1.059	26.90	0.091	2.30	1.380	725	0.927	2377	1.390	719	0.934	2360	110
	1	25	1.307	33.20	1.331	33.80	0.102	2.60	1.980	505	1.330	1657	2.000	500	1.344	1640	80
	1.1/4	32	1.650	41.90	1.673	42.50	0.102	2.60	2.540	394	1.707	1292	2.570	389	1.727	1277	61
	1.1/2	40	1.882	47.80	1.906	48.40	0.114	2.90	3.230	310	2.170	1016	3.270	306	2.197	1003	51
	2	50	2.346	59.60	2.370	60.20	0.114	2.90	4.080	245	2.742	804	4.150	241	2.789	791	37
	2.1/2	65	2.961	75.20	2.992	76.00	0.126	3.20	5.710	175	3.837	575	5.830	172	3.918	563	27
	3	80	3.461	87.90	3.492	88.70	0.126	3.20	6.720	149	4.516	488	6.890	145	4.630	476	24
4	100	4.449	113.00	4.484	113.90	0.142	3.60	9.750	103	6.552	336	10.000	100	6.720	328	16	
MEDIUM	1/2	15	0.827	21.00	0.858	21.80	0.102	2.60	1.210	826	0.813	2711	1.220	820	0.820	2689	130
	3/4	20	1.043	26.50	1.075	27.30	0.102	2.60	1.560	641	1.048	2103	1.570	637	1.055	2090	100
	1	25	1.311	33.30	1.346	34.20	0.126	3.20	2.410	415	1.619	1361	2.430	412	1.633	1350	65
	1.1/4	32	1.654	42.00	1.689	42.90	0.126	3.20	3.100	323	2.083	1058	3.130	319	2.103	1048	51
	1.1/2	40	1.886	47.90	1.921	48.80	0.126	3.20	3.560	281	2.392	922	3.600	278	2.419	911	44
	2	50	2.350	59.70	2.394	60.80	0.142	3.60	5.030	199	3.380	652	5.100	196	3.427	643	30
	2.1/2	65	2.965	75.30	3.016	76.60	0.142	3.60	6.420	156	4.314	511	6.540	153	4.395	502	24
	3	80	3.465	88.00	3.524	89.50	0.157	4.00	8.360	120	5.618	392	8.530	117	5.732	385	19
	4	100	4.453	113.10	4.528	115.00	0.177	4.50	12.200	82	8.198	269	12.500	80	8.400	262	14
	5	125	5.453	138.50	5.543	140.80	0.197	5.00	16.600	60	11.155	198	17.100	58	11.491	192	10
HEAVY	1/2	15	0.827	21.00	0.858	21.80	0.126	3.20	1.440	694	0.968	2278	1.450	690	0.974	2263	110
	3/4	20	1.043	26.50	1.075	27.30	0.126	3.20	1.870	535	1.257	1754	1.880	532	1.263	1745	80
	1	25	1.311	33.30	1.346	34.20	0.157	4.00	2.930	341	1.969	1120	2.950	339	1.982	1112	55
	1.1/4	32	1.654	42.00	1.689	42.90	0.157	4.00	3.790	264	2.547	866	3.820	262	2.567	859	44
	1.1/2	40	1.886	47.90	1.921	48.80	0.157	4.00	4.370	229	2.937	751	4.410	227	2.963	744	37
	2	50	2.350	59.70	2.394	60.80	0.177	4.50	6.190	162	4.159	530	6.260	160	4.207	524	27
	2.1/2	65	2.965	75.30	3.016	76.60	0.177	4.50	7.930	126	5.329	414	8.050	124	5.409	408	20
	3	80	3.465	88.00	3.524	89.50	0.197	5.00	10.300	97	6.921	319	10.500	95	7.056	312	16
	4	100	4.453	113.10	4.528	115.00	0.213	5.40	14.500	69	9.744	226	14.800	68	9.945	222	12
	5	125	5.453	138.50	5.543	140.80	0.213	5.40	17.900	56	12.028	183	18.400	54	12.364	178	10
	6	150	6.453	163.90	6.555	166.50	0.213	5.40	21.300	47	14.313	154	21.900	46	14.716	150	7





Packing



Inspection

## TECHNICAL DATA

### TOLERANCES

CLASS	THICKNESS	WEIGHT/PIECE	WEIGHT / 10 MT
LIGHT 1	-12.50%	+ / - 10.0%	+ / - 7.5%
LIGHT 2	-8.00%	-8.0 / +10.0%	+ / - 5.0%
MEDIUM	-12.50%	+ / - 10.0%	+ / - 7.5%
HEAVY	-12.50%	+ / - 10.0%	+ / - 7.5%

### CHEMICAL PROPERTIES

PHOSPHORUS : 0.060% MAX

SULPHUR : 0.060% MAX

### MECHANICAL PROPERTIES

TENSILE STRENGTH : 320-520 N/MM2

ELONGATION : 15% MIN on GL 5.65xSq. Root of Cross Sectional Area

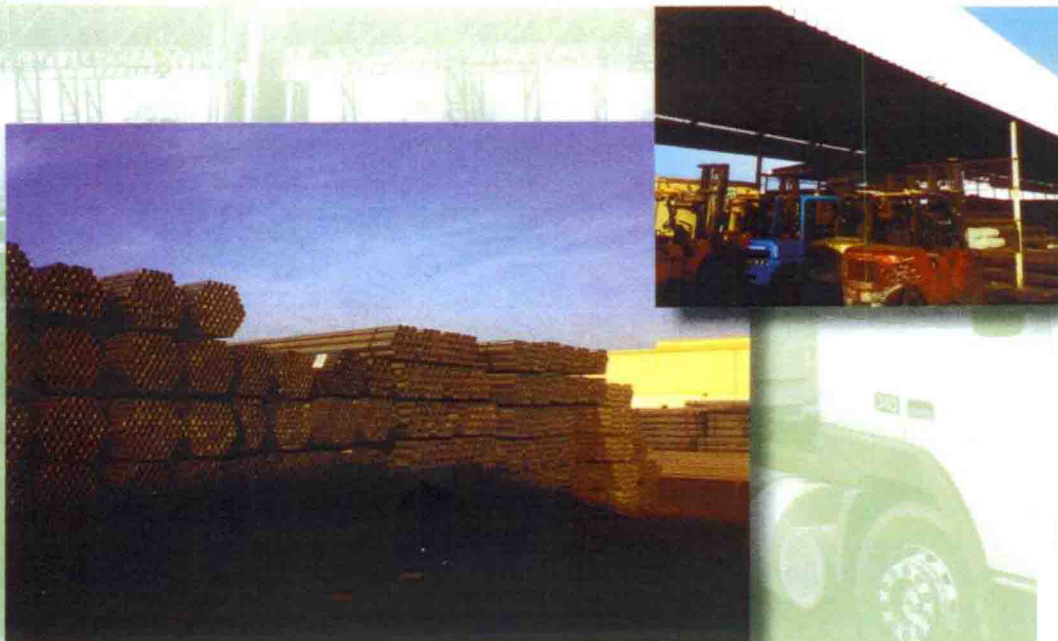
### LEAK TIGHTNESS TEST

All pipes shall be tested hydrostatically at a pressure of 50 bar OR

shall be 100% on-line eddy current tested.

**MARKING** : Each pipes is stenciled with  
"JAZEERA STEEL OMAN - DN SIZE -SERIES- ISO 65"

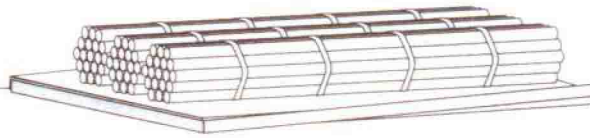
**PACKING** : Hexagonal Type



**TECHNICAL DATA OF SQUARE AND RECTANGLE  
HOLLOW SECTION CONFORMING TO THE SPECIFICATION  
ASTM A 500 GRADE-A**

SIZE		THICKNESS		SECTION WEIGHT DETAILS				NO OF PCS PER BUNDLE
MM	INCHES	MM	INCHES	KG/MTR	MTR/TON	LB/FT	FT/TON	
12 X 12	0.472 X 0.472	0.90	0.035	0.297	3367	0.200	11047	400
		1.00	0.039	0.325	3077	0.218	10095	400
		1.20	0.047	0.377	2653	0.253	8702	400
		1.50	0.059	0.449	2227	0.302	7307	400
16 X 16	0.630 X 0.630	0.90	0.035	0.410	2439	0.276	8002	300
		1.00	0.039	0.450	2222	0.302	7291	300
		1.20	0.047	0.528	1894	0.355	6214	300
		1.50	0.059	0.637	1570	0.428	5150	300
19 X 19	0.748 X 0.748	0.90	0.035	0.495	2020	0.333	6628	300
		1.00	0.039	0.545	1835	0.366	6020	300
		1.20	0.047	0.641	1560	0.431	5118	300
		1.50	0.059	0.778	1285	0.523	4217	300
25 X 25	0.984 X 0.984	1.20	0.047	0.867	1153	0.583	3784	144
		1.50	0.059	1.060	943	0.712	3095	144
		1.80	0.071	1.245	803	0.837	2635	144
		2.00	0.079	1.360	735	0.914	2412	144
30 X 30	1.18 X 1.18	1.20	0.047	1.056	947	0.710	3107	81
		1.50	0.059	1.297	771	0.872	2530	81
		1.80	0.071	1.528	654	1.027	2147	81
		2.00	0.079	1.678	596	1.128	1955	81
31 X 31	1.22 X 1.22	1.20	0.047	1.094	914	0.735	2999	81
		1.50	0.059	1.340	746	0.900	2448	81
		1.80	0.071	1.584	631	1.064	2071	81
		2.00	0.079	1.740	575	1.169	1886	81
		2.50	0.098	2.111	474	1.419	1554	81
		3.00	0.118	2.455	407	1.650	1336	81





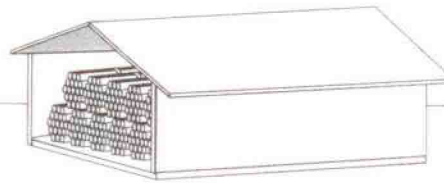
Weightment

SIZE		THICKNESS		SECTION WEIGHT DETAILS				NO OF
MM	INCHES	MM	INCHES	KG/MTR	MTR/TON	LB/FT	FT/TON	PCS PER
38 X 38	1.496 X 1.496	1.20	0.047	1.357	737	0.912	2418	64
		1.50	0.059	1.673	598	1.124	1961	64
		1.80	0.071	1.980	505	1.330	1657	64
		2.00	0.079	2.179	459	1.464	1506	64
		2.50	0.098	2.660	376	1.787	1233	64
		3.00	0.118	3.114	321	2.093	1054	64
		3.50	0.138	3.544	282	2.381	926	64
		4.00	0.157	3.946	253	2.652	831	64
50 X 50	1.968 X 1.968	1.50	0.059	2.239	447	1.505	1465	49
		1.80	0.071	2.659	376	1.787	1234	49
		2.00	0.079	2.934	341	1.972	1118	49
		2.50	0.098	3.602	278	2.420	911	49
		2.80	0.110	3.991	251	2.682	822	49
		3.00	0.118	4.246	236	2.853	773	49
		3.50	0.138	4.863	206	3.268	675	30
		4.00	0.157	5.454	183	3.665	602	30
		4.50	0.177	6.020	166	4.045	545	30
75 X 75	2.953 X 2.953	1.80	0.071	4.072	246	2.736	806	36
		2.00	0.079	4.504	222	3.027	728	36
		2.30	0.091	5.144	194	3.457	638	36
		2.50	0.098	5.565	180	3.740	590	36
		3.00	0.118	6.601	151	4.436	497	36
		3.50	0.138	7.610	131	5.114	431	20
		4.00	0.157	8.594	116	5.775	382	20
		4.50	0.177	9.552	105	6.419	343	20
		5.00	0.197	10.485	95	7.046	313	20
		6.00	0.236	12.273	81	8.247	267	20
80 X 80	3.149 X 3.149	1.80	0.071	4.354	230	2.926	754	36
		2.00	0.079	4.818	208	3.238	681	36
		2.30	0.091	5.505	182	3.699	596	36
		2.50	0.098	5.958	168	4.004	551	36
		3.00	0.118	7.072	141	4.752	464	36
		3.50	0.138	8.160	123	5.483	402	16
		4.00	0.157	9.223	108	6.198	356	16
		4.50	0.177	10.259	97	6.894	320	16
		5.00	0.197	11.270	89	7.573	291	16
		5.50	0.217	12.256	82	8.236	268	16
6.00	0.236	13.215	76	8.880	248	16		



SIZE		THICKNESS		SECTION WEIGHT DETAILS				NO OF PCS PER
MM	INCHES	MM	INCHES	KG/MTR	MTR/TON	LB/FT	FT/TON	
100 X 100	3.937 X 3.937	2.00	0.079	6.074	165	4.082	540	16
		2.50	0.098	7.527	133	5.058	436	16
		3.00	0.118	8.956	112	6.018	366	16
		3.50	0.138	10.358	97	6.960	317	16
		4.00	0.157	11.734	85	7.885	280	16
		4.50	0.177	13.085	76	8.793	251	16
		5.00	0.197	14.410	69	9.683	228	9
		5.50	0.217	15.709	64	10.556	209	9
		6.00	0.236	16.982	59	11.411	193	9
		6.50	0.256	18.231	55	12.251	180	9
		7.00	0.276	19.452	51	13.071	169	9
		7.50	0.295	20.648	48	13.875	159	9
		8.00	0.315	21.819	46	14.662	150	9
125 X 125	4.921 X 4.921	2.00	0.079	7.644	131	5.137	429	16
		2.50	0.098	9.490	105	6.377	346	16
		3.00	0.118	11.311	88	7.601	290	16
		3.50	0.138	13.105	76	8.806	250	16
		4.00	0.157	14.874	67	9.995	221	16
		4.50	0.177	16.617	60	11.166	197	9
		5.00	0.197	18.335	55	12.321	179	9
		5.50	0.217	20.026	50	13.457	164	9
		6.00	0.236	21.693	46	14.577	151	9
		6.50	0.256	23.333	43	15.679	141	9
		7.00	0.276	24.947	40	16.764	132	9
		7.50	0.295	26.536	38	17.831	124	9
		8.00	0.315	28.099	36	18.882	117	9
31 X 19	1.220 X 0.748	1.50	0.059	1.061	943	0.713	3092	81
		1.80	0.071	1.246	803	0.837	2633	81
		2.00	0.079	1.363	734	0.916	2407	81
		2.50	0.098	1.640	610	1.102	2001	81
		3.00	0.118	1.890	529	1.270	1736	81
40 X 20	1.575 X 0.787	1.50	0.059	1.297	771	0.872	2530	100
		1.80	0.071	1.528	654	1.027	2147	100
		2.00	0.079	1.678	596	1.128	1955	100
		2.50	0.098	2.032	492	1.365	1615	64
		3.00	0.118	2.362	423	1.587	1389	64





Storage

SIZE		THICKNESS		SECTION WEIGHT DETAILS				NO OF PCS PER BUNDLE
MM	INCHES	MM	INCHES	KG/MTR	MTR/TON	LB/FT	FT/TON	
40 X 25	1.575 X 0.984	1.50	0.059	1.415	707	0.951	2319	100
		1.80	0.071	1.670	599	1.122	1965	100
		2.00	0.079	1.835	545	1.233	1788	100
		2.50	0.098	2.229	449	1.498	1472	64
		3.00	0.118	2.597	385	1.745	1263	64
50 X 25	1.968 X 0.984	1.50	0.059	1.650	606	1.109	1988	81
		1.80	0.071	1.952	512	1.312	1681	81
		2.00	0.079	2.148	466	1.443	1527	81
		2.50	0.098	2.621	382	1.761	1252	64
		3.00	0.118	3.068	326	2.062	1069	64
60 X 30	2.362 X 1.181	1.50	0.059	2.000	500	1.344	1640	81
		1.80	0.071	2.376	421	1.597	1381	81
		2.00	0.079	2.619	382	1.760	1253	81
		2.50	0.098	3.210	312	2.157	1022	81
		3.00	0.118	3.774	265	2.536	869	81
60 X 40	2.362 X 1.575	1.50	0.059	2.239	447	1.505	1465	64
		1.80	0.071	2.659	376	1.787	1234	64
		2.00	0.079	2.934	341	1.972	1118	42
		2.50	0.098	3.603	278	2.421	911	42
		3.00	0.118	4.246	236	2.853	773	42
80 X 40	3.150 X 1.575	1.50	0.059	2.709	369	1.820	1211	42
		1.80	0.071	3.220	311	2.164	1019	42
		2.00	0.079	3.560	281	2.392	922	42
		2.50	0.098	4.390	228	2.950	747	42
		3.00	0.118	5.187	193	3.486	633	42
		3.50	0.138	5.962	168	4.006	550	25
		4.00	0.157	6.709	149	4.508	489	25
		4.80	0.189	7.853	127	5.277	418	25
		5.00	0.197	8.130	123	5.463	404	25



SIZE		THICKNESS		SECTION WEIGHT DETAILS				NO OF PCS PER BUNDLE
MM	INCHES	MM	INCHES	KG/MTR	MTR/TON	LB/FT	FT/TON	
100 X 50	3.937 X 1.968	2.00	0.079	4.504	222	3.027	728	36
		2.30	0.091	5.144	194	3.457	638	36
		2.50	0.098	5.565	180	3.740	590	36
		3.00	0.118	6.601	151	4.436	497	36
		3.50	0.138	7.610	131	5.114	431	20
		4.00	0.157	8.595	116	5.776	382	20
		4.50	0.177	9.553	105	6.419	343	20
		5.00	0.197	10.485	95	7.046	313	20
		6.00	0.236	12.273	81	8.247	267	20
		7.00	0.276	13.957	72	9.379	235	20
		8.00	0.315	15.539	64	10.441	211	20
120 X 60	4.724 X 2.362	2.00	0.079	5.446	184	3.660	602	20
		2.30	0.091	6.227	161	4.184	527	20
		2.50	0.098	6.743	148	4.531	487	20
		3.00	0.118	8.014	125	5.385	409	20
		3.50	0.138	9.259	108	6.222	354	20
		4.00	0.157	10.479	95	7.042	313	20
		4.50	0.177	11.672	86	7.843	281	20
		5.00	0.197	12.840	78	8.628	256	20
		5.50	0.217	13.983	72	9.396	235	12
		6.00	0.236	15.099	66	10.146	217	12
		7.00	0.276	17.254	58	11.594	190	12
		8.00	0.315	19.307	52	12.973	170	12
120 X 100	4.724 X 3.937	2.00	0.079	6.702	149	4.503	490	16
		2.30	0.091	7.671	130	5.155	428	16
		2.50	0.098	8.313	120	5.586	395	16
		3.00	0.118	9.898	101	6.651	331	16
		3.50	0.138	11.457	87	7.699	286	16
		4.00	0.157	12.991	77	8.729	253	16
		4.50	0.177	14.498	69	9.742	226	16
		5.00	0.197	15.980	63	10.738	205	9
		5.50	0.217	17.437	57	11.717	188	9
		6.00	0.236	18.867	53	12.678	174	9
		7.00	0.276	21.650	46	14.548	152	9
		8.00	0.315	24.331	41	16.349	135	9







SIZE		THICKNESS		SECTION WEIGHT DETAILS				NO OF PCS PER BUNDLE
MM	INCHES	MM	INCHES	KG/MTR	MTR/TON	LB/FT	FT/TON	
125 X 50	4.921 X 1.968	2.00	0.079	5.289	189	3.554	620	20
		2.50	0.098	6.546	153	4.399	501	20
		3.00	0.118	7.778	129	5.227	422	20
		3.50	0.138	8.984	111	6.037	365	20
		4.00	0.157	10.165	98	6.830	323	20
		4.50	0.177	11.319	88	7.606	290	20
		5.00	0.197	12.448	80	8.365	264	20
		5.50	0.217	13.551	74	9.106	242	12
		6.00	0.236	14.628	68	9.830	224	12
		7.00	0.276	16.705	60	11.225	196	12
125 X 75	4.921 X 2.953	2.00	0.079	6.074	165	4.081	540	20
		2.50	0.098	7.528	133	5.058	436	20
		3.00	0.118	8.956	112	6.018	366	20
		3.50	0.138	10.358	97	6.960	317	12
		4.00	0.157	11.735	85	7.885	280	12
		4.50	0.177	13.085	76	8.793	251	12
		5.00	0.197	14.410	69	9.683	228	12
		5.50	0.217	15.710	64	10.556	209	12
		6.00	0.236	16.983	59	11.412	193	12
		7.00	0.276	19.452	51	13.071	169	12
150 X 75	5.906 X 2.953	2.00	0.079	6.859	146	4.609	478	20
		2.50	0.098	8.509	118	5.718	386	20
		3.00	0.118	10.133	99	6.809	324	20
		3.50	0.138	11.732	85	7.883	280	12
		4.00	0.157	13.305	75	8.940	247	12
		4.50	0.177	14.852	67	9.980	221	12
		5.00	0.197	16.373	61	11.002	200	12
		5.50	0.217	17.868	56	12.007	184	12
		6.00	0.236	19.338	52	12.994	170	12
		7.00	0.276	22.200	45	14.918	148	12
150 X 100	5.906 X 3.937	2.00	0.079	7.644	131	5.136	429	12
		2.30	0.091	8.755	114	5.883	375	12
		2.50	0.098	9.490	105	6.377	346	12
		3.00	0.118	11.311	88	7.600	290	9
		3.50	0.138	13.106	76	8.807	250	9
		4.00	0.157	14.875	67	9.995	221	9
		4.50	0.177	16.618	60	11.167	197	9
		5.00	0.197	18.335	55	12.321	179	9
		5.50	0.217	20.027	50	13.458	164	9
		6.00	0.236	21.693	46	14.577	151	9
7.00	0.276	24.947	40	16.764	132	9		
8.00	0.315	28.099	36	18.881	117	9		



## SPECIFICATION DETAILS

### TOLERANCES

### OUTER DIMENSIONS

Specified Outside Large Flat Dimension Inch [mm]	Permissible Variations Over and Under Specified Outside Flat Dimensions Inch [mm]
2.1/2"[63.5] or under	0.020 [0.51]
Over 2.1/2 to 3.1/2 [63.5 to 88.9], incl	0.025 [0.64]
Over 3.1/2 to 5.1/2 [88.9 to 139.7], incl	0.030 [0.76]
Over 5.1/2 [139.7]	0.01 times large flat dimension

THICKNESS	: + / - 10% of Wall Thickness
SQUARENESS OF SIDES	: 90° + / - 2°
CORNER RADIUS	: 3 times to Wall Thickness (Maximum)
STRAIGHTNESS	: 1 in 500 mm
TWIST	: 2 mm plus 0.5mm per mtr length (Maximum)

### MECHANICAL PROPERTIES

YIELD STRENGTH	: 269 N/MM2 (Min )
TENSILE STRENGTH	: 310 N/MM2 (Min.)
ELONGATION	: 25 % Minimum on 2.0" Gauge Length

### CHEMICAL PROPERTIES

CARBON	: 0.26 % MAX
PHOSPHORUS	: 0.035 % MAX
SULPHUR	: 0.035 % MAX

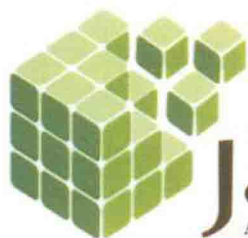
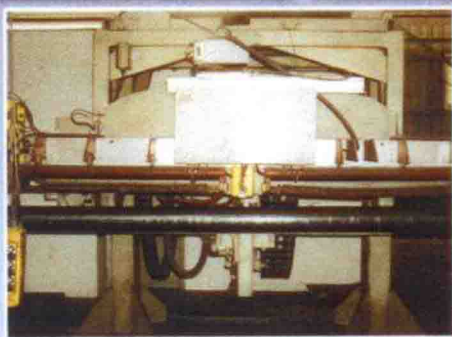
### END FINISH

Sections shall be supplied with Mill Finish

### SURFACE PROTECTION

All sections shall be supplied with rust protective oil coating.





# Jazeera Steel

ALJAZEERA STEEL PRODUCTS CO. SAOG

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