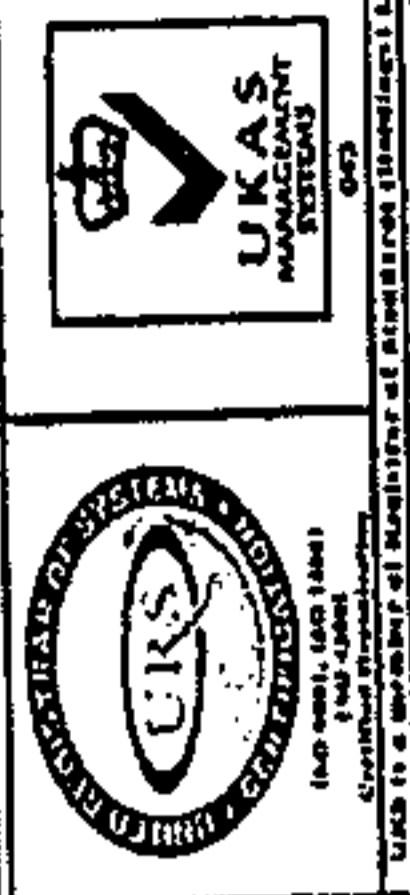


ORIGINAL

TSI METAL INDUSTRIES LLC
 P.O. BOX: 31165, ICAD-II, ABU DHABI, U.A.E.
 MANUFACTURER TEST CERTIFICATE



DATE : 10-FEB-2022
 MTC NO. : TSI/EXP/22-0073
 EXP NO. : 21-317
 INV NO. : TSI/EX/22/000003

HOUSTON, TEXAS 77056
 50

P.O. NO : 25.182

WE CERTIFY THAT THE MATERIAL DESCRIBED BELOW FULLY CONFORMS TO ASTM A53. THE CHEMICAL COMPOSITION & MECHANICAL TESTING CONFORMS TO ASTM A751 & ASTM A370 RESPECTIVELY. PLEASE REFER TO ASTM A53 FOR DETAILS OF SPECIFICATION REQUIREMENTS.

MATERIAL DESCRIPTION - PRIME NEWLY PRODUCED ERW STEEL PIPE CONFORMING TO ASTM A53-20 GRADE-B

S.No.	Item	Outside Diameter	Thickness	Length	Weight	Quantity		Surface Finish	Ends	Batch No	Heat No	Heat Treatment - 540°C Min	Eddy Current Test	Flattening/Bend Test (At 0° and 90°) 33%/66%/Full/8°D	Hydro Test Pressure	Avg. Zinc Coating
						Feet	Pcs									
1	2" X SCH-40	2.375	0.154	21	3.66	650	650	Black	Bevel End	2067/211127	810385	OK	OK	OK	2500	N/A
2	2" X SCH-40	2.375	0.154	21	3.66	494	494	Black	Bevel End	2071/211223	2136253	OK	OK	OK	2500	N/A
3	2 1/2" X SCH-40	2.875	0.203	21	5.80	756	756	Black	Bevel End	2069/211207	A147523	OK	OK	OK	2500	N/A
4	3" X SCH-40	3.500	0.216	21	7.58	588	588	Black	Bevel End	3074/211215	2142218	OK	OK	OK	2500	N/A
5	3 1/2" X SCH-40	4.000	0.226	21	9.12	324	324	Black	Bevel End	2065/211118	A147562	OK	OK	OK	2370	N/A
6	4" X SCH-40	4.500	0.237	21	10.80	620	620	Black	Bevel End	3064/211108	A245827	OK	OK	OK	2210	N/A
7	5" X SCH-40	5.563	0.258	21	14.63	140	140	Black	Bevel End	3071/211205	A147557	OK	OK	OK	1950	N/A
8	6" X SCH-40	6.625	0.280	21	18.99	161	161	Black	Bevel End	3068/211122	A147519	OK	OK	OK	1780	N/A
9	6" X SCH-40	6.625	0.280	21	18.99	287	287	Black	Bevel End	3075/211219	2140213	OK	OK	OK	1780	N/A

Chemical Composition / Analysis (MAX)

Heat No	C%	Mn%	P%	S%	Cr%	Cu%	Mo%	Ni%	V%	(Cu+Ni+Cr+Mo+V)%	Specimen	YS-MPa	UTS-MPa	% EL
Spec. Requirement	0.300	1.200	0.0500	0.0450	0.4000	0.4000	0.1500	0.4000	0.0800	1.0000	-	240	415	Table X4.1
810385	0.159	0.890	0.0150	0.0034	0.0110	0.0040	0.0000	0.0050	0.0020	0.0220	L/B	358	471	30
2136253	0.095	0.534	0.0050	0.0040	0.0110	0.0390	0.0010	0.0220	0.0030	0.0760	L/B	358	433	34
A147523	0.139	0.808	0.0230	0.0060	0.0190	0.0080	0.0010	0.0210	0.0010	0.0500	L/B	354	467	35
2142218	0.090	0.529	0.0045	0.0029	0.0130	0.0090	0.0000	0.0110	0.0010	0.0340	L/B	363	447	32
A147562	0.137	0.850	0.0180	0.0040	0.0220	0.0090	0.0010	0.0220	0.0010	0.0550	L/B	303	468	31
A245827	0.141	0.860	0.0220	0.0020	0.0260	0.0080	0.0010	0.0270	0.0010	0.0630	L/B	327	473	30
A147557	0.138	0.840	0.0110	0.0080	0.0150	0.0090	0.0010	0.0230	0.0010	0.0490	L/B	317	452	31
A147519	0.139	0.840	0.0180	0.0020	0.0160	0.0090	0.0010	0.0230	0.0010	0.0500	L/B	306	453	37
2140213	0.101	0.561	0.0051	0.0051	0.0190	0.0340	0.0060	0.0300	0.0030	0.0320	L/B	333	436	35

IT IS FURTHER CERTIFIED THAT THE ABOVE MATERIAL CONFORMS TO THE DIMENSIONAL AND WEIGHT TOLERANCE OF THE SPECIFICATION ASTM A53.

TOLERANCE : FOR ≤ 48.3 OD ± 0.40 MM & ≥ 48.3 MM OD $\pm 1\%$, THICK. -12.5% , WEIGHT $\pm 10\%$. WORKMANSHIP : CONFORMS TO ASTM A53 & P.O., BEVEL ANGLE: 30°- 35° WHEREVER APPLICABLE

ALL THE PIPES WERE CONTINUOUSLY STENCILED WITH MARKING AS UNDER:

(UL) LISTED EX26998 TIGER/MADE IN UAE ASTM A53 NPS - INCH SCH-40 GR. B TYPE E NDE LENGTH - FEET HEAT NO. RWP 300PSI HTP - PSI <FM>

ABBREVIATION: YS: Yield Strength; UTS: Ultimate Tensile Strength; EL: Elongation; GL: Gauge Length; L: Longitudinal; T: Transverse; B: Body Tensile; W: Weld Tensile



NARENDRA KUMAR
 MANAGER (QUALITY)