

REPORT N. TC-018503-16-0002	Issued on 21/10/2016	Customer PROVEEDORA DE MATERIALES ANGER	Job n. / Com. n. 18503	Page n. / Pagina n. 2 of 10
Rapporto N. 0	Revised on EN 10204:2004 UNI EN 10204:2005	Client SA DE CV, AV ADOLFO LOPEZ MATEOS 150, COL LAGRANGE, SAN NICOLAS DE LOS GARZA, N.L. - 66490, MEXICO	Purchase order and project/Ordine e progetto 7763	
Revisione 0	According to In accordo a	Type 3.1	DESCRIPTION / DESCRIZIONE	

Test Prova	Item Pos.	Qty Q.tà	Customer code Codice cliente	Material Materiale	Heat Colata	Product Prodotto
JUAR	12	79		A/SA105-14	13/77967	TEE S. 3000 NPT A/SA105N 1
SLUD	12	421		A/SA105-14	14/71505	TEE S. 3000 NPT A/SA105N 1
JFUT	16	2500		A/SA105-14	14/71507	UNION S. 3000 NPT A/SA105N 1 male
JFUT	16	2500		A/SA105-14	14/71507	UNION S. 3000 NPT A/SA105N 1 female
JFUT	16	2500		A/SA105-14	14/71507	UNION S. 3000 NPT A/SA105N 1 nut

Test Prova	HEAT TREATMENT DATA AND REFERENCES TO OTHER CERTIFICATES / Dettagli di trattamento termico e riferimenti ad altri certificati						
JUAR	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 880 C COOLED IN STILL AIR.						
SLUD	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 880 C COOLED IN STILL AIR.						
JFUT	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.						
JFUT	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.						
JFUT	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.						

Test Prova	loc. Preso a	Orient. Direz.	TENSILE TEST AT ROOM TEMPERATURE / Trazione a temperatura ambiente										CVN (KV) / Prova di resilienza												
			Shape Forma	A [mm ²] Sezione	L [mm] Lungh.	Yield strength Snerv. [Mpa] Min:	Tensile strength Rottura [Mpa] Min:	Elongation Allung. [%] Min:	Red. Of Area Contraz. [%] Min:	Dimens. Dimens. [mm]	T Temp. [°C]	Abs. Energy Energia ass. [J]	Shear A Area d [%]	Lat Exp Esp. Lat. [mm]	Bend [B] Flatt. [F] Plega Schiacc.	Hardness Durezza									
JUAR	T/2	LONG	Round	30.500	25.000	284.100	496.300	30.400	66.500	10x10x55	-11	80-101-74	--	--	--	--	HBW 143-146								
SLUD	T/2	LONG	Round	61.000	35.000	303.400	496.700	31.900	66.000	10x10x55	0	83-100-112	--	--	--	--	HBW 149-152								
JFUT	T/2	LONG	Round	59.600	35.000	339.900	508.900	43.100	56.400	10x10x55	-1	65-100-114	--	--	--	--	HBW 141-144								
JFUT	T/2	LONG	Round	59.600	35.000	339.900	508.900	43.100	56.400	10x10x55	-1	65-100-114	--	--	--	--	HBW 141-144								
JFUT	T/2	LONG	Round	59.600	35.000	339.900	508.900	43.100	56.400	10x10x55	-1	65-100-114	--	--	--	--	HBW 141-144								
Test Prova	C [%]	Si [%]	Mn [%]	S [%]	P [%]	Cr [%]	Ni [%]	Mo [%]	Ti [%]	Cu [%]	V [%]	Al [%]	H [%]	Nb [%]	N [%]	Sn [%]	O [%]	B [%]	Fe [%]	Zr [%]	CE ^A [%]	PREN ^B [%]	X fact. ^C [%]	J fact. ^D [%]	
JUAR	0.1950	0.2500	1.0100	0.0030	0.0150	0.1500	0.0800	0.0100	0.0200	0.1900	0.0020	0.0280	0.00025	0.0010	0.0096	0.0090	0.0016				0.4137		0.4077		
SLUD	0.2000	0.2000	0.9800	0.0070	0.0150	0.1200	0.0800	0.0100	0.0190	0.1900	0.0020	0.0280	0.00022	0.0010	0.0092	0.0110	0.0019				0.4077		0.3879		
JFUT	0.1900	0.2000	0.9400	0.0040	0.0150	0.1100	0.0600	0.0100	0.0210	0.1900	0.0030	0.0270	0.00020	0.0010	0.0086	0.0120	0.0018				0.3879		0.3879		
JFUT	0.1900	0.2000	0.9400	0.0040	0.0150	0.1100	0.0600	0.0100	0.0210	0.1900	0.0030	0.0270	0.00020	0.0010	0.0086	0.0120	0.0018				0.3879		0.3879		
JFUT	0.1900	0.2000	0.9400	0.0040	0.0150	0.1100	0.0600	0.0100	0.0210	0.1900	0.0030	0.0270	0.00020	0.0010	0.0086	0.0120	0.0018				0.3879		0.3879		

REMARKS / Note

1: MATERIAL ACCORDING TO NACE MR0175/ISO 15156-1-2-3 Ed.2009. MATERIAL ACCORDING TO NACE MR0103 Ed.2012

2: MATERIAL ACCORDING TO ASME Sect. II Part. A 2015 Edition.

3: FULLY KILLED STEEL, FINE GRAIN TREATED, PRODUCED BY ELECTRIC FURNACE

Additional elements:	SLUD: Ca 0,0009 JFUT: Ca 0,0009
Quality inspector representative	Ispectore controllo qualità

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trademark M.E.G.A. is printed in green color. Form QC-01-01 Rev. 0 2013-03-15

Riccardo Scorsetti

REPORT N. Rapporto N.	TC-018503-16-0002	Issued on Revised on	21/10/2016	Customer Cliente	PROVEEDORA DE MATERIALES ANGER SA DE CV, AV ADOLFO LOPEZ MATEOS 150, COL LAGRANGE, SAN NICOLAS DE LOS GARZA, N.L. - 66490, MEXICO	Job n. / Com. n.	18503	Page n. / Pagina n.	10 of 10
Revision Revisione	0	According to In accordo a	EN 10204:2004 UNI EN 10204:2005	Type Tipo	3.1	Purchase order and project/Ordine e progetto	7763		

We hereby certify that all items supplied for the above purchase orders meet all the requirements of the applicable specification of manufacture, the purchase item descriptions, purchase specifications and purchase order requirements. Visual, dimensional and marking check of items supplied has been carried out by our internal inspectors with satisfactory results.

The chemical and mechanical values shown on the EN 10204 certificate are true copy of the mill test certificate issued by the steel mill, or by the laboratory that determined it. All material is certified to be mercury free and free from radioactivity contamination. No weld repair was performed. Marking was performed by low stress stamps in accordance with MSS SP25.

Manufacturing standards:

- 45° and 90° elbows, tees, crosses, full and half couplings, caps, square, hexagonal and round plugs, hexagonal and flush bushings are manufactured in accordance with ASME B.16.1.1; threads in accordance with ANSI/ASME B1.20.1.
- Outlet branches are manufactured in accordance with: ASME B.31.1, B.31.3 and MSS-SP-97
- Seamless swage nipples are manufactured in accordance with: BS3799-74 or MSS SP95-86
- Seamless pipe nipples are manufactured in accordance with: B36.10-95 or B36.19-85
- Flanged outlet branches are manufactured in accordance with: ASME B.31.1, B.31.3 and B.16.5
- Unions are manufactured in accordance with: BS 3799 or MSS SP-83

When the length of flanged nipple is not specified in the description, it is 150 mm.

The material is according to ASTM and ASME Boiler and Pressure Vessel Code Section II.

When the Edition/Revision of the listed standards is not mentioned, it is assumed to be the latest.

Yield strength detected by 0.2% off-set method

Austenitic and duplex stainless steels have been pickled and passivated. Machined surfaces do not require pickling and passivation.

M.E.G.A. is approved with certificate 75/2002/MUC by T.U.V. (certification Body N.0036) to issue certificate of specific product control in accordance with the Pressure Equipment Directive 97/23/EC (PED) Annex 1, Paragraph 4.3.

Testing equipment used:

- Tensile test machine Galdabini Quasar 250 serial No. VAOG – Procedure MAC-03 Rev. 1
 - Impact test Cermac JB-W500 serial No. 04031 – Procedure MAC-04 Rev. 1
 - Brinell Hardness test Wolpert Dia Testor 2RC serial No. 8900298/0001 – Procedure MAC-05 Rev. 1
 - Rockwell Hardness test EMCO Test DJ10 Serial No. 255 - Procedure MAC-06 Rev. 1
 - Chemical analysis spectrometer Baird DV4 serial No. P017 (ASTM E415 and E1086) – Procedure QC-07 Rev. 0
- The product are manufactured in Italy.

Quality inspector representative	Riccardo Scorsetti
Ispettore controllo qualità	