M.E.G.A.

INSPECTION CERTIFICATE

Certificato d'ispezione

REPORT N. Rapporto N.	TC-022703-18-0002	**Issued on** 29/10/2018 **Revised on**		**Customer** Cliente	PROVEEDORA DE MATERIALES ANCER SA DE CV, AV ADOLFO LOPEZ MATEOS 150, COL LAGRANGE, SAN NICOLAS DE LOS GARZA, N.L. - 66490, MEXICO	**Job n. /** Com. n. 22703	**Page n.**/ Pagina n. 3 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 8966	

DESCRIPTION / DESCRIZIONE

Test Prova	Item Pos.	Qty Q.tà	Customer code Codice cliente	Material Materiale	Heat Colata	Product Prodotto
YXSU	9	1002		ASTM A105/18	18/78222	UNION S. 3000 NPT A/SA105N 2 male
YXSU	9	1002		ASTM A105/18	18/78222	UNION S. 3000 NPT A/SA105N 2 female
YXSX	9	1002		ASTM A105/18	18/78223	UNION S. 3000 NPT A/SA105N 2 nut
AEWT	11	3000		ASTM A105/18	255320	COUPLING S. 3000 NPT A/SA105N 1/2
ZUTT	12	3000		ASTM A105/18	16/71407	COUPLING S. 3000 NPT A/SA105N 3/4

Test Prova	HEAT TREATMENT DATA Dettagli di trattamento termico	COUNTRY OF MELT Provenienza	RAW AND FORGING MATERIAL CERTIFICATES Certificati di acciaieria/forgia
YXSU	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 910 C COOLED IN STILL AIR.	IT	CERT.2018/0040086+2018/0040087 FEAT*H2:0,00019
YXSU	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 910 C COOLED IN STILL AIR.	IT	CERT.2018/0040086+2018/0040087 FEAT*H2:0,00019
YXSX	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 910 C COOLED IN STILL AIR.	IT	CERT.2018/0040090+2018/0040091 FEAT*H2=0,00017
AEWT	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.	IT	CERT.338168 ACC.VENETE*H2=0,00014(VACUUM DEGASED STEEL)
ZUTT	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 880 C COOLED IN STILL AIR.	IT	CERT.47386.RIVA*H2=0,00020(VACUUM DEGASED STEEL)

Test Prova	Test loc. Preso a	Orient. Direz.	TENSILE TEST AT ROOM TEMPERATURE / Trazione a temperatura ambiente						CVN (KV) / Prova di resilienza					Bend [B] Flatt. [F] Piega Schiacc.	Hardness Durezza	Grain Size Dimens. grano
			Specimen / Provino			Yield strength	Tensile strength	Elongation	Red. Of Area	Dimens.	T	Abs. Energy	Shear A	Lat Exp			
			Shape Forma	A Sez.[mm²]	Gage Length Lungh.[mm]	Snerv. [Mpa] Min:	Rottura [Mpa] Min:	Allung. [%] Min:	Contraz. [%] Min:	Dimens. [mm]	Temp. [°C]	Energia ass. [J]	Area d [%]	Esp. Lat. [mm]		[HBW 2,5/187,5]	
YXSU	T/2	LONG	Round	122.600	50.000	280.000	508.000	27.800	51.000	10X10X55	-29	76-82-84	--	--		148-152	
YXSU	T/2	LONG	Round	122.600	50.000	280.000	508.000	27.800	51.000	10X10X55	-29	76-82-84	--	--		148-152	
YXSX	T/2	LONG	Round	122.600	50.000	345.000	501.000	35.830	64.440	10X10X55	-29	88-96-122	--	--		147-149	
AEWT	T/2	LONG	Round	122.300	50.000	346.400	502.400	35.900	72.700	10X10X55	-29	149-166-145	80-80-80	1.71-1.65-1.60		140-142	
ZUTT	T/2	LONG	Round	122.900	50.000	364.300	528.000	35.200	70.700	10X10X55	-11	160-168-155	80-85-75	1.75-1.80-1.71		157-158	

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] [%]	CEs[E] [%]	J fact.[D] [%]
YXSU	0.1850	0.2200	1.0000	0.0100	0.0150	0.1800	0.0700	0.0100	0.0180	0.1800	0.0020	0.0250		0.0010		0.0090	0.0018				0.4067		0.3516	
YXSU	0.1850	0.2200	1.0000	0.0100	0.0150	0.1800	0.0700	0.0100	0.0180	0.1800	0.0020	0.0250		0.0010		0.0090	0.0018				0.4067		0.3516	
YXSX	0.1900	0.2000	1.0100	0.0100	0.0120	0.1500	0.0700	0.0100	0.0150	0.1400	0.0010	0.0230		0.0010	0.0094	0.0080	0.0015				0.4045		0.3583	
AEWT	0.1640	0.1890	1.0250	0.0050	0.0090	0.1270	0.0890	0.0130	0.0140	0.1250	0.0050	0.0250		0.0020	0.0096	0.0060	0.0016	0.0002			0.3780		0.3348	
ZUTT	0.1750	0.2400	1.0300	0.0100	0.0100	0.1200	0.0800	0.0100	0.0150	0.2000	0.0020	0.0250		0.0010	0.0098	0.0100	0.0018				0.3917		0.3466	

REMARKS / Note

1: MATERIAL ACCORDING TO NACE MR0175/ISO 15156-1-2-3 Ed.2015
2: MATERIAL ACCORDING TO ASME Sect. II Part A 2017 Edition.
3: FULLY KILLED STEEL, FINE GRAIN TREATED.

A: CE = C + Mn/6 + (Cr+Mo+V)/5 + (Cu+Ni)/15 | B: PREN = Cr + 3.3Mo + 16N
C: X factor = (10P + 5Sb+4Sn+As)/100 - elements expressed in ppm
D: J factor = ((Mn + Si)(P + Sn)) x 10E4 | E: CEs = C + Mn/6

Additional elements: 'AEWT': As 0.0050 |

Quality inspector representative
Ispettore controllo qualità

Emmanuel Centemeri

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

M.E.G.A.

INSPECTION CERTIFICATE

Certificato d'ispezione

REPORT N. Rapporto N.	TC-022703-18-0002	**Issued on** 29/10/2018 **Revised on**		**Customer** Cliente	PROVEEDORA DE MATERIALES ANCER SA DE CV, AV ADOLFO LOPEZ MATEOS 150, COL LAGRANGE, SAN NICOLAS DE LOS GARZA, N.L. - 66490, MEXICO	**Job n.** / Com. n. **22703**	**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 **8966**	

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 Ed. 2008.

Manufacturing standards:
- 45° and 90° elbows, tees, crosses, full and half couplings, caps, square, hexagonal and round plugs, hexagonal and flush bushings, welding bosses are manufactured in accordance with ASMEB.16.11 Ed. 2016; threads in accordance with ANSI/ASME B1.20.1 Ed. 2013
- Outlet branches are manufactured in accordance with: ASME B.31.1 Ed. 2016, B.31.3 Ed. 2016 and MSS-SP-97 Ed. 2012
- Seamless swage nipples are manufactured in accordance with: BS3799-74 or MSS SP95 Ed. 2014
- Seamless pipe nipples are manufactured in accordance with: B36.10 Ed. 2015 or B36.19 Ed. 2004
- Flanged outlet branches are manufactured in accordance with: ASME B.31.1 Ed. 2016, B.31.3 Ed. 2016 and B.16.5 Ed. 2013
- Unions are manufactured in accordance with: BS 3799-74 or MSS SP-83 Ed. 2014

When the length of flanged nipolet 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 2014/68/EU (PED) Annex 1, Section 4.3.

Testing: Test results are relevant only to the specimens belonging to the indicated heat, batch and material.
- Tensile test machine Galdabini Quasar 250 serial No. VAOG – Procedure MAC-03 Rev. 3 – ASTM A370 paragraph 6. Elongation determined after fracture, Yield strength determined using the offset method
- Impact test machine Cermac JB-W500 serial No. 04031 – Procedure MAC-04 Rev. 3 – ASTM A370 Paragraph 20 / ASTM E23
- Brinell and Vickers Hardness test machine Wolpert Dia Testor 2RC serial No. 8900298/0001 – Procedure MAC-05 Rev. 3 – ASTM E10 (HBW); MAC-09 Rev.0 – ASTM E92 (HV10)
- Rockwell Hardness test machine EMCO Test DJ10 Serial No. 255 - Procedure MAC-06 Rev. 3 – ASTM E18
- Chemical analysis spectrometer Baird DV4 serial No. P017 (ASTM E415 and E1086) – Procedure QC-07 Rev. 0
- Grain size determined according to ASTM E112

The product are manufactured in Italy.

Quality inspector representative Ispettore controllo qualità	Emmanuel Centemeri

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