

REPORT N. Rapporto N.	TC-019212-16-0006	Issued on Revised on	13/06/2017	Customer Cliente	PROVEEDORA DE MATERIALES ANKER SA DE CV, AV ADOLFO LOPEZ MATEOS 150, COL LAGRANGE, SAN NICOLAS DE LOS GARZA, N.L. - 66490, MEXICO	Job n. / Com. n.	19212	Page n./ Pagina n.	1 of 2
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 7902			

DESCRIPTION / DESCRIZIONE

Test Prova	Item Pos.	Qty Qtà	Customer code Codice cliente	Material Materiale	Heat Colata	Product Prodotto
ZJNU	3	688		A/SA105-14	16/78658	90 DEG. ELBOW S. 3000 NPT A/SA105N 1.1/2
AAXI	11	1500		A/SA105-14	240963	TEE S. 3000 NPT A/SA105N 3/4
ZXLX	12	1500		A/SA105-14	16/71331	TEE S. 3000 NPT A/SA105N 1
ZNBT	41	400		A/SA105-14	237102	BUSHING M/F NPT A/SA105N 2x1.1/4

Test Prova	HEAT TREATMENT DATA Dettagli di trattamento termico	COUNTRY OF MELT Provenienza	RAW AND FORGING MATERIAL CERTIFICATES Certificati di acciaieria/forgia
ZJNU	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 880 C COOLED IN STILL AIR.		CERT.FC-005509-15-0015.MEGA/CERT.244.MEGA*
AAXI	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.		CERT.000164.EVASI*
ZXLX	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 880 C COOLED IN STILL AIR.		CERT.FC-005528-15-0018.MEGA/CERT.3415.MEGA*
ZNBT	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.		CERT.000592.EVASI*

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
			Specimen / Provino			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]		
			Shape Forma	A Sez. [mm <sup>2</sup> ]	Gage Length Lung. [mm]											
ZJNU	T/2	TRANS	Round	60.700	35.000	336.100	514.300	33.100	68.500	10x10x55	-29	53-46-50	30-30-30	0.80-0.75-0.78	HBW 151-152	
AAXI	T/2	TRANS	Round	31.200	25.000	302.500	507.500	37.100	70.700	10x10x55	-29	96-90-82	50-45-40	1.14-1.09-1.04	HBW 150-151	
ZXLX	T/2	TRANS	Round	60.000	35.000	299.200	500.700	31.600	60.600	10x10x55	-10	44-44-47	25-25-30	0.69-0.71-0.76	HBW 146-148	
ZNBT	T/2	LONG	Round	122.300	50.000	314.800	500.800	35.800	73.900	10x10x55	-10	65-106-110	35-50-55	0.85-1.18-1.26	HBW 149-154	

Test Prova	C [%]	Si [%]	Mn [%]	S [%]	P [%]	Cr [%]	Ni [%]	Mo [%]	Ti [%]	Cu [%]	V [%]	Al [%]	H [%]	Nb [%]	N [%]	Sn [%]	O [%]	B [%]	Fe [%]	Zr [%]	CE <sup>A</sup> [%]	PREN <sup>B</sup> [%]	X fact. <sup>C</sup> [%]	J fact. <sup>D</sup> [%]
ZJNU	0.1900	0.2400	1.0500	0.0090	0.0140	0.1200	0.0500	0.0100	0.0180	0.1900	0.0020	0.0250	0.00020	0.0020	0.0099	0.0100	0.0019				0.4074			
AAXI	0.1900	0.2000	1.0300	0.0020	0.0090	0.0900	0.0300	0.0100	0.0020	0.0500	0.0040	0.0230	0.00010	0.0020	0.0068	0.0030	0.0013				0.3877			
ZXLX	0.1900	0.2100	1.0000	0.0100	0.0150	0.0900	0.0600	0.0100	0.0150	0.1800	0.0020	0.0250	0.00017	0.0010	0.0094	0.0080	0.0017				0.3930			
ZNBT	0.1630	0.2200	0.9400	0.0020	0.0120	0.2100	0.0800	0.0200	0.0020	0.1500	0.0040	0.0200	0.00012	0.0010	0.0060	0.0080	0.0013				0.3817			

REMARKS / Note

1: MATERIAL ACCORDING TO NACE MR0175/ISO 15156-1-2-3 Ed.2015  
2: MATERIAL ACCORDING TO ASME Sect. II Part. A 2015 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

Quality inspector representative

Riccardo Scorsetti

Ispettore controllo qualità

Additional elements: 'AAXI': Co 0,0050 As 0,0020 Sb 0,0010 | 'ZNBT': Ca 0,0010 As 0,0040 Sb 0,0010 |

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<b>Revision</b> Revisione	<b>0</b>	<b>According to</b> In accordo a	<b>EN 10204:2004</b> <b>UNI EN 10204:2005</b>	<b>Type</b> Tipo	<b>3.1</b>	<b>Purchase order and project/Ordine e progetto</b> <b>7902</b>	

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 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 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. 3
- Impact test Cermac JB-W500 serial No. 04031 – Procedure MAC-04 Rev. 3
- Brinell and Vickers Hardness test Wolpert Dia Testor 2RC serial No. 8900298/0001 – Procedure MAC-05 Rev. 3 (HBW); MAC-09 Rev.0 (HV10)
- Rockwell Hardness test EMCO Test DJ10 Serial No. 255 - Procedure MAC-06 Rev. 3
- 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

Ispettore controllo qualità

Riccardo Scorsetti

