

INSPECTION CERTIFICATE

Certificato di ispezione



REPORT N. TC-020442-17-0005		Issued on 27/11/2017		Customer		Job n. / Com. n. 20442		Page n. / Pagina n. 2 of 3																	
Rapporto N.		Revised on		Client		Purchase order and project/Ordine e progetto		8086																	
Revision 0		According to EN 10204:2004		Type 3.1		SA DE CV, AV ADOLFO LOPEZ		MATEOS 150, COL LAGRANGE,																	
Revisiione		In accordo a UNI EN 10204:2005		Tipo		SAN NICOLAS DE LOS GARZA, N.L. - 66490, MEXICO																			
DESCRIPTION / DESCRIZIONE																									
Test Prova	Item Pos.	Qty Q.tà	Customer code Codice cliente	Material Materiale	Heat Colata	Product Prodotto																			
AAVC	55	5200		A/SA105-14	248659	90 DEG. ELBOW S. 3000 SW A/SA105N 3/4																			
ABRK	59	2496		A/SA105-14	17/30319	90 DEG. ELBOW S. 3000 SW A/SA105N 2																			
HEAT TREATMENT DATA																									
MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.																									
MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.																									
COUNTRY OF MELT																									
RAW AND FORGING MATERIAL CERTIFICATES																									
CERT.000164.EVASI*(VACUUM DEGASED STEEL)																									
CERT.2166.METALFAR(VACUUM DEGASED STEEL)CERT.422.SOUVERI																									
TENSILE TEST AT ROOM TEMPERATURE / Trazione a temperatura ambiente																									
Test Prova	Test loc. Preso a	Orient. Direz.	Specimen / Provino Shape Forma	A Gage length Ser. (mm)	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 [s] Flatt. [F] Piega Schiacc.	Hardness Durezza										
AAVC	T/2	TRANS	Round	31.500	25.000	323.600	507.900	38.700	73.600	10x10x55	-29	36-74-34	25-40-25	0.61-0.93-0.60	HBW 154-155										
ABRK	T/2	TRANS	Round	60.100	35.000	288.300	490.500	34.800	71.200	10x10x55	-29	65-32-31	40-20-20	0.87-0.60-0.58	HBW 144-145										
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.																									
Additional elements:																									
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. [%]	J fact. [%]	
AAVC	0.1640	0.2200	1.0360	0.0040	0.0080	0.1320	0.0920	0.0180	0.0100	0.1210	0.0030	0.0200	0.00016	0.0010	0.0117	0.0060	0.0015					0.3814		0.3814	
ABRK	0.1900	0.2400	0.9400	0.0040	0.0090	0.1300	0.0800	0.0100	0.0180	0.1300	0.0020	0.0290	0.00023	0.0010	0.0088	0.0080	0.0012					0.3890		0.3890	

This certificate is issued by a certified system and it is valid with electronic signature. On the original certificate the trademark M.E.G.A. is printed in Green color.

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Form OC-01-01 Rev. 0 2013-03-15

Quality inspector representative
 Riccardo Scorsetti
 Ispettore controllo qualità



REPORT N. Rapporto N.	TC-020442-17-0005	Issued on Revised on	27/11/2017	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.	20442	Page n. / Pagina n.	3 of 3
Revision Revisione	0 In accordo a	EN 10204:2004 UNI EN 10204:2005	Type Tipo	3.1		Purchase order and project/Ordine e progetto	8086		

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 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 Quassar 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 DVA serial No. P017 (ASTM EA15 and E1086) – Procedure QC-07 Rev. 0

Alloy N08020: Material from forgings according to ASTM B462; Material from bars according to ASTM B473; both grades ASTM B462 and ASTM B473 conform also ASTM B366
 Alloy N10276: Material from forgings according to ASTM B564; Material from bars according to ASTM B574; both grades ASTM B564 and ASTM B574 conform also ASTM B366
 Alloy N06625: material from forgings according to ASTM B564; material from bars according to ASTM B446; material from pipes according to ASTM B444; all grades ASTM B564, ASTM B446 and ASTM B444 conform also ASTM B366
 Alloy N08825: Material from forgings according to ASTM B564; Material from bars according to ASTM B425; both grades ASTM B564 and ASTM B425 conform also ASTM B366

The product are manufactured in Italy.

Quality inspector representative Ispettore controllo qualità	Ricardo Scorsetti
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