

REPORT N. Rapporto N.		TC-022103-18-0001		Issued on 24/07/2018		Customer PROVEEDORA DE MATERIALES ANCKER		Job n. / Com. n. 22103		Page n./ Pagina n. 2 of 4															
Revision Revisione		0		According to In accordo a		EN 10204:2004 UNI EN 10204:2005		Type Tipo		3.1															
						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 8414															
DESCRIPTION / DESCRIZIONE																									
Test Prova	Item Pos.	Qty Q.tà	Customer code Codice cliente			Material Materiale			Heat Colata	Product Prodotto															
AGCX	4	30				ASTM A105/14			48339	HALF COUPLING S. 3000 NPT A/SA105N 3															
AEHE	5	400				ASTM A105/14			247534	90 DEG. ELBOW S. 3000 SW A/SA105N 3/8															
AEMM	6	292				ASTM A105/14			17/76006	90 DEG. ELBOW S. 3000 SW A/SA105N 1/2															
ZNCD	6	2467				ASTM A105/14			238459	90 DEG. ELBOW S. 3000 SW A/SA105N 1/2															
ZNFF	6	2266				ASTM A105/14			245949	90 DEG. ELBOW S. 3000 SW A/SA105N 1/2															
Test Prova	HEAT TREATMENT DATA Dettagli di trattamento termico								COUNTRY OF MELT Provenienza		RAW AND FORGING MATERIAL CERTIFICATES Certificati di acciaieria/forgia														
AGCX	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 860°C min COOLED IN STILL AIR.										CERT. E1785 ART ROM														
AEHE	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.										CERT.123.EVASI (VACUUM DEGASED STEEL)														
AEMM	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.								IT		CERT.2.FORG MAES (VACUUM DEGASED STEEL)CERT.4379 MEGA														
ZNCD	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.										CERT.000615.EVASI*(VACUUM DEGASED STEEL)														
ZNFF	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.										CERT.101.EVASI (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]	Hardness Durezza	Grain Size								
			Specimen / Provino		Yield strength	Tensile strength	Elongation	Red. Of Area	Dimens.	T	Abs. Energy	Shear A	Lat Exp	Flatt. [F]	Hardness	Grain									
			Shape	A	Gage Length	nerv. [Mpa]	[Mpa]	atura [Mpa]	[Mp	Allung. [%]	Contraz. [%]	Dimens.	Temp.	Energia ass.	Area d	Exp. Lat.	Piega	[HBW_{2,5/187,5}]	Dimens.						
			Forma	Sez.[mm²]	Lungh.[mm]	Min:	Min:	Min:	Min:	Min:	Min:	[mm]	[°C]	[J]	[%]	[mm]	Schiacc.	[mm]	grano						
AGCX	T/2	TRANS	Round	29.900	25.000	339.600	528.400	37.200	72.800	10X10X55	-29	147-170-230	80-90-100	1.56-1.77-2.18		148-151									
AEHE	T/2	LONG	Round	30.800	25.000	311.400	492.500	37.200	69.600	10x10x55	-29	110-90-88	60-50-50	1.45-1.30-1.29		146-149									
AEMM	T/2	TRANS	Round	12.700	16.000	332.200	522.600	33.200	69.800	10X10X55	-29	47-44-43	30-30-30	0.66-0.53-0.60		143-149									
ZNCD	T/2	LONG	Round	30.800	25.000	312.500	503.400	39.000	76.300	10X10X55	-10	119-163-135	60-80-65	1.40-1.72-1.51		148-151									
ZNFF	T/2	TRANS	Round	58.900	35.000	338.100	531.700	35.700	69.200	10X10X55	-29	37-34-43	20-20-20	0.64-0.72-0.80		142-143									
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 [%]	
AGCX	0.1800	0.2500	1.0700	0.0030	0.0150	0.1000	0.0600	0.0100		0.1700	0.0030	0.0320		0.0020	0.0090			0.0004					0.3962		
AEHE	0.1590	0.2100	1.0460	0.0050	0.0090	0.1280	0.1360	0.0230	0.0120	0.1830	0.0040	0.0250	0.0001	0.0020	0.0094	0.0090	0.0016						0.3855		
AEMM	0.1850	0.1900	1.0200	0.0100	0.0110	0.1200	0.0700	0.0100	0.0160	0.1700	0.0020	0.0250		0.0010	0.0096	0.0070	0.0017						0.3974		
ZNCD	0.1610	0.1700	0.9600	0.0020	0.0080	0.2000	0.1000	0.0200	0.0030	0.1400	0.0050	0.0210	0.0001	0.0010	0.0047	0.0090	0.0013						0.3820		
ZNFF	0.1710	0.1820	1.0500	0.0020	0.0120	0.1280	0.1340	0.0190	0.0140	0.2130	0.0050	0.0330	0.0001	0.0010	0.0074	0.0070	0.0019						0.3995		
REMARKS / Note																									
1: MATERIAL ACCORDING TO NACE MR0175/ISO 15156-1-2-3 Ed.2015												A: CE = C + Mn/6 + (Cr+Mo+V)/5 + (Cu+Ni)/15 B: PREN = Cr + 3.3Mo + 16N													
2: MATERIAL ACCORDING TO ASME Sect. II Part A 2017 Edition.												C: X factor = (10P + 5Sb+4Sn+As)/100 - elements expressed in ppm													
3: FULLY KILLED STEEL, FINE GRAIN TREATED.												D: J factor = ((Mn + Si) (P + Sn)) x 10E4													
Additional elements: 'ZNCD': As 0,0050 Sb 0,0010												Quality inspector representative						Emmanuel Centemeri							
												Ispettore controllo qualità													

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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 8414	

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 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

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

Emmanuel Centemeri

