

REPORT N. Rapporto N.	TC-019212-16-0001	Issued on Revised on	31/01/2017	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.	19212	Page n. / Pagina n.	1 of 8
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 Q.tà	Customer code Codice cliente	Material Materiale	Heat Colata	Product Prodotto
SCTF	1	1000		A/SA105-14	228290	90 DEG. ELBOW S. 3000 NPT A/SA105N 1/4
JUAX	8	298		A/SA105-14	13/77967	45 DEG. ELBOW S. 3000 NPT A/SA105N 1
ZNAA	8	502		A/SA105-14	431807	45 DEG. ELBOW S. 3000 NPT A/SA105N 1
ZNAN	10	1020	*	A/SA105-14	244302	TEE S. 3000 NPT A/SA105N 1/2
YNNX	13	600		A/SA105-14	15/75888	TEE S. 3000 NPT A/SA105N 1.1/4

Test Prova	HEAT TREATMENT DATA AND REFERENCES TO OTHER CERTIFICATES / Dettagli di trattamento termico e riferimenti ad altri certificati										RAW AND FORGING MATERIAL CERTIFICATES / Certificati di acciaieria/forgia				
SCTF	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.										CERT.000453.EVASI*				
JUAX	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 880 C COOLED IN STILL AIR.										CERT.FC-004682-13-0021.MEGA/CERT.923.MEGA*				
ZNAA	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.										CERT.000500.EVASI*				
ZNAN	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.										CERT.000490.EVASI*				
YNNX	MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 880 C COOLED IN STILL AIR.										CERT.FC-005405-15-0002.MEGA/CERT.2256.MEGA*				

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	Tensile strength	Elongation	Red. Of Area	Dimens.	T	Abs. Energy	Shear A	Lat Exp			
			Shape Forma	A [mm ²] Sezione	L [mm] Lungh.	Snerv. [Mpa] Min:	Rottura [Mpa] Min:	Allung. [%] Min:	Contraz. [%] Min:	Dimens. [mm]	Temp. [°C]	Energia ass. [J]	Area d [%]	Esp. Lat. [mm]			
SCTF	T/2	LONG	Round	60.300	35.000	367.600	523.800	39.700	70.500	10x10x55	0	163-147-185	--	--	HBW 146-150		
JUAX	T/2	LONG	Round	30.500	25.000	276.400	522.500	38.500	65.300	10x10x55	0	79-97-77	--	--	HBW 148-152		
ZNAA	T/2	LONG	Round	30.800	25.000	319.000	518.000	33.900	65.900	10x10x55	-10	65-50-47	--	--	HBW 145-148		
ZNAN	T/2	LONG	Round	121.500	50.000	314.200	489.200	34.600	71.800	10x10x55	-10	177-194-181	85-90-85	1.83-1.95-1.84	HBW 148-149		
YNNX	T/2	LONG	Round	59.500	35.000	306.300	494.200	31.800	62.300	10x10x55	0	106-114-123	--	--	HBW 140-145		

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 [%]
SCTF	0.1600	0.1840	1.0230	0.0040	0.0070	0.0940	0.1440	0.0370		0.1600	0.0030	0.0310	0.00016	0.0010	0.0119	0.0100	0.0018					0.3775		
JUAX	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		
ZNAA	0.1550	0.2200	1.0000	0.0020	0.0090	0.2000	0.0800	0.0200	0.0020	0.1100	0.0030	0.0190	0.00009	0.0040	0.0051	0.0070	0.0014					0.3789		
ZNAN	0.1640	0.2000	1.0270	0.0030	0.0070	0.1190	0.0910	0.0160	0.0120	0.0830	0.0030	0.0230	0.00015	0.0010	0.0088	0.0050	0.0016					0.3743		
YNNX	0.1850	0.1700	1.0500	0.0010	0.0090	0.0900	0.0700	0.0100	0.0150	0.1400	0.0020	0.0250	0.00018	0.0030	0.0099	0.0100	0.0018	0.0003				0.3944		

REMARKS / Note																							
1: MATERIAL ACCORDING TO NACE MR0175/ISO 15156-1-2-3 Ed.2009												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 2015 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: 'ZNAA': Co 0,0070 Ca 0,0010 As 0,0050 Sb 0,0010												Quality inspector representative						Riccardo Scorsetti					
												Ispettore controllo qualità											

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Rapporto N.		Revised on		Cliente		Purchase order and project/Ordine e progetto			
Revision	0	According to	EN 10204:2004	Type	3.1				
Revisione		In accordo a	UNI EN 10204:2005	Tipo					

Test Prova	Item Pos.	Qty Q.tà	Customer code Codice cliente	Material Materiale	Heat Colata	Product Prodotto	DESCRIPTION / DESCRIZIONE																		
							HEAT TREATMENT DATA AND REFERENCES TO OTHER CERTIFICATES / Dettagli di trattamento termico e riferimenti ad altri certificati																		
ZNCB	15	500		A/SA105-14	238884	TEE S. 3000 NPT A/SA105N 2																			
YRUC	17	1000	*	A/SA105-14	15/75960	UNION S. 3000 NPT A/SA105N 1/2 male																			
YRUC	17	1000	*	A/SA105-14	15/75960	UNION S. 3000 NPT A/SA105N 1/2 female																			
YRUC	17	1000	*	A/SA105-14	15/75960	UNION S. 3000 NPT A/SA105N 1/2 nut																			
JBAX	20	2100		A/SA105-14	13/75629	COUPLING S. 3000 NPT A/SA105N 1/4																			
Test Prova	HEAT TREATMENT DATA AND REFERENCES TO OTHER CERTIFICATES / Dettagli di trattamento termico e riferimenti ad altri certificati														RAW AND FORGING MATERIAL CERTIFICATES										
ZNCB	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.														CERT.000575.EVASI*										
YRUC	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.														CERT.2016/0010191.FEAT*										
YRUC	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.														CERT.2016/0010192.FEAT*										
YRUC	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.														CERT.2016/0010206.FEAT*										
JBAX	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.														CERT.15875.RIVA*										
Test Prova	loc.	Orient. Direz.	TENSILE TEST AT ROOM TEMPERATURE / Trazione a temperatura ambiente		Yield strength Snerv. [Mpa]	Tensile strength Rottura [Mpa]	Elongation Allung. [%]	Red. Of Area Contraz. [%]	Dimens. Dimens. [mm]	T Temp. [°C]	Abs. Energy Energia ass. [J]	Shear A Area d [%]	Lat Exp Esp. Lat. [mm]	Bend [B] Flatt. [F] Piegia Schiacc.	Hardness Durezza										
ZNCB	T/2	LONG	Round	122.700	50.000	308.000	495.500	34.200	69.500	10x10x55	-10	85-100-63	40-50-35	1.02-1.15-0.85	HBW 146-147										
YRUC	T/2	LONG	Round	124.900	50.000	349.600	546.400	31.500	70.300	10x10x55	-1	160-183-165	75-90-80	1.74-1.88-1.79	HBW 160-162										
YRUC	T/2	LONG	Round	124.900	50.000	349.600	546.400	31.500	70.300	10x10x55	-1	160-183-165	75-90-80	1.74-1.88-1.79	HBW 160-162										
YRUC	T/2	LONG	Round	124.900	50.000	349.600	546.400	31.500	70.300	10x10x55	-1	160-183-165	75-90-80	1.74-1.88-1.79	HBW 160-162										
JBAX	T/2	LONG	Round	30.300	25.000	384.100	555.400	40.900	69.300	10x10x55	0	153-182-174	--	--	HBW 160-162										
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 [%]	
ZNCB	0.1650	0.2200	0.9500	0.0020	0.0120	0.2000	0.1100	0.0200	0.1500	0.0050	0.0170	0.00009	0.0020	0.0040	0.0080	0.0014						0.3856			
YRUC	0.1900	0.2300	1.0100	0.0030	0.0140	0.1700	0.0600	0.0100	0.1700	0.0010	0.0250	0.00018	0.0020	0.0095	0.0110	0.0017						0.4098			
YRUC	0.1900	0.2300	1.0100	0.0030	0.0140	0.1700	0.0600	0.0100	0.1700	0.0010	0.0250	0.00018	0.0020	0.0095	0.0110	0.0017						0.4098			
YRUC	0.1900	0.2300	1.0100	0.0030	0.0140	0.1700	0.0600	0.0100	0.1700	0.0010	0.0250	0.00018	0.0020	0.0095	0.0110	0.0017						0.4098			
JBAX	0.1900	0.2300	0.9400	0.0070	0.0150	0.1200	0.0500	0.0100	0.1400	0.0030	0.0260	0.0030	0.0030	0.0030	0.0080							0.3859			

REMARKS / Note

- MATERIAL ACCORDING TO NACE MR0175/ISO 15156-1-2-3 Ed.2009
- MATERIAL ACCORDING TO ASME Sect. II Part. A 2015 Edition.
- FULLY KILLED STEEL, FINE GRAIN TREATED.

Additional elements:	ZNCB: As 0,0070 Sb 0,0010
Quality inspector representative	Riccardo Scottetti

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REPORT N. Rapporto N.	TC-019212-16-0001	Issued on Revised on	31/01/2017	Customer Cliente	PROVEDORA 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.	19212	Page n./ Pagina n.	3 of 8
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		

Test Prova	Item Pos.	Qty Q.tà	Customer code Codice cliente	Material Materiale	Heat Colata	Product Prodotto	DESCRIPTION / DESCRIZIONE																		
							HEAT TREATMENT DATA AND REFERENCES TO OTHER CERTIFICATES / Dettagli di trattamento termico e riferimenti ad altri certificati																		
YABC	21	2000		A/SA105-14	14/79164	COUPLING S. 3000 NPT A/SA105N 3/8	RAW AND FORGING MATERIAL CERTIFICATES / Certificati di acciaieria/forgia																		
YTCD	27	300		A/SA105-14	15/75879	CAP S. 3000 NPT A/SA105N 1/2	CERT.28528, RIVA*(VACUUM DEGASSED STEEL)																		
YUSA	28	800	*	A/SA105-14	15/76767	CAP S. 3000 NPT A/SA105N 3/4	CERT.43431, RIVA*(VACUUM DEGASSED STEEL)																		
YTBS	29	500		A/SA105-14	15/75956	CAP S. 3000 NPT A/SA105N 1	CERT.48358, RIVA*(VACUUM DEGASSED STEEL)																		
YTCC	33	1000	*	A/SA105-14	BA5746	BUSHING M/F NPT A/SA105N 3/4x1/2	CERT.42267, RIVA*(VACUUM DEGASSED STEEL)																		
Test Prova	HEAT TREATMENT DATA AND REFERENCES TO OTHER CERTIFICATES / Dettagli di trattamento termico e riferimenti ad altri certificati																								
YABC	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.																								
YTCD	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.																								
YUSA	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.																								
YTBS	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.																								
YTCC	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																						
			Specimen / Provino	Yield strength Snerv. [Mpa]	Tensile strength Rottura [Mpa]	Elongation Allung. [%]	Red. Of Area Contraz. [%]	Dimens. Dimens. [mm]	T Temp. [°C]	Abs. Energy Energia ass. [J]	Shear A Area d [%]	Lat Exp Esp. Lat. [mm]	Bend [B] Flatt. [F] Piega Schiacc.	Hardness Durezza											
YABC	T/2	LONG	Round	122.700	50.000	403.200	546.200	35.000	69.500	10x10x55	0	174-169-173	--	--	--	HBW 158-163									
YTCD	T/2	LONG	Round	122.900	50.000	389.400	552.700	34.900	71.200	10x10x55	0	194-184-188	--	--	--	HBW 153-156									
YUSA	T/2	LONG	Round	123.700	50.000	336.300	516.400	37.900	68.100	10x10x55	0	200-199-208	--	--	--	HBW 153-155									
YTBS	T/2	LONG	Round	122.300	50.000	386.800	552.300	38.400	72.900	10x10x55	0	201-190-177	--	--	--	HBW 165-168									
YTCC	T/2	LONG	Round	122.600	50.000	348.800	552.200	40.200	66.400	10x10x55	-1	142-148-166	--	--	--	HBW 163-166									
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 [%]	
YABC	0.2000	0.1900	0.9500	0.0090	0.0150	0.1500	0.0800	0.0100	0.0190	0.2000	0.0030	0.0290	0.00022	0.0020	0.0087	0.0110	0.0020					0.4095			
YTCD	0.1850	0.2200	1.0400	0.0030	0.0140	0.1100	0.0600	0.0100	0.0180	0.2000	0.0020	0.0250	0.00018	0.0010	0.0094	0.0100	0.0013					0.4000			
YUSA	0.1850	0.2000	1.0500	0.0030	0.0100	0.0800	0.0500	0.0100	0.0180	0.1200	0.0020	0.0250	0.00016	0.0020	0.0097	0.0080	0.0016	0.0003				0.3897			
YTBS	0.1900	0.2400	1.0800	0.0060	0.0130	0.1200	0.0600	0.0100	0.0210	0.1500	0.0010	0.0280	0.00019	0.0010	0.0095	0.0090	0.0018					0.4102			
YTCC	0.1900	0.2000	0.9600	0.0210	0.0120	0.1100	0.0800	0.0200	0.1100	0.0020	0.0210											0.3890			

REMARKS / Note

- MATERIAL ACCORDING TO NACE MR0175/ISO 15156-1-2-3 Ed.2009
- MATERIAL ACCORDING TO ASME Sect. II Part. A 2015 Edition.
- FULLY KILLED STEEL, FINE GRAIN TREATED.

Additional elements:	YTBS: Ca 0.0007
Quality inspector representative	Riccardo Scottetti
Inspector control quality	

REPORT N. TC-019212-16-0001	Issued on 31/01/2017	Customer 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. 19212	Page n. / Pagina n. 4 of 8
Revision 0	Revised on EN 10204:2004 UNI EN 10204:2005	Client	Purchase order and project/Ordine e progetto 7902	
Revisione 0	Accordo a In accordo a	Cliente	DESCRIPTION / DESCRIZIONE	

Test Prova	Item Pos.	Qty Qtà	Customer code Codice cliente	Material Materiale	Heat Colata	Product Prodotto
SDDN	38	1000		A/SA105-14	237375	BUSHING M/F NPT A/SA105N 1.1/2x1
SRAX	43	60		A/SA105-14	13/78397	BUSHING M/F NPT A/SA105N 2.1/2x1.1/2
JLNL	49	3000		A/SA105-14	10/73677	HEX. HEAD PLUG NPT A/SA105N 3/4
JLNN	50	3000		A/SA105-14	12/72374	HEX. HEAD PLUG NPT A/SA105N 1
CGM	51	1000		A/SA105-14	021832	HEX. HEAD PLUG NPT A/SA105N 1.1/4

HEAT TREATMENT DATA AND REFERENCES TO OTHER CERTIFICATES / Dettagli di trattamento termico e riferimenti ad altri certificati

Test Prova	Material Materiale	Product Prodotto
SDDN	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.	RAW AND FORGING MATERIAL CERTIFICATES / Certificati di acciaieria/forgia CERT.000615.EVASI*
SRAX	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 880 C COOLED IN STILL AIR.	CERT.FC-004978-14-0013.MEGA/CERT.1383.MEGA*
JLNL	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.	CERT.34823.RIVA*
JLNN	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.	CERT.18932.RIVA*
CGM	MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR.	CERT.1946.87.BABCOCK-WILCOX*

Test Prova	Loc. Preso a	Orient. Direz.	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]	Bend [B] Flatt. [F] Plega Schiacc.	Hardness Durezza									
			A [mm ²] Sezione	L [mm] Lungh.																				
SDDN	T/2	LONG	Round	59.700	333.800	515.900	38.600	74.700	10x10x55	0	202-155-177	--	--	--	HBW 151-152									
SRAX	T/2	LONG	Round	30.400	25.000	496.300	33.400	72.500	10x10x55	-1	120-118-109	--	--	--	HBW 142-144									
JLNL	T/2	LONG	Round	122.300	50.000	390.200	32.100	66.100	10x10x55	-1	116-118-121	--	--	--	HBW 152-156									
JLNN	T/2	LONG	Round	122.300	50.000	298.400	34.700	64.500	10x10x55	-1	120-100-98	--	--	--	HBW 143-146									
CGM	T/2	LONG	Round	60.100	50.000	347.000	30.500	58.900	10x10x55	0	50-52-52	--	--	--	HBW 159-161									
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 [%]
SDDN	0.1610	0.2110	1.0110	0.0060	0.0060	0.1080	0.1580	0.0310		0.1570	0.0050	0.0260	0.00014	0.0050	0.0112	0.0070	0.0018				0.3793			
SRAX	0.1900	0.2100	1.0000	0.0080	0.0140	0.0800	0.0800	0.0100	0.0190	0.1900	0.0030	0.0290	0.00024	0.0020	0.0090	0.0100	0.0018				0.3932			
JLNL	0.1800	0.2100	0.8700	0.0090	0.0080	0.1000	0.0700	0.0200	0.0150	0.2100	0.0200	0.0240		0.0020		0.0110					0.3716			
JLNN	0.2000	0.2000	0.9000	0.0090	0.0120	0.0900	0.0400	0.0100	0.0200	0.1700	0.0200	0.0250		0.0020		0.0080					0.3880			
CGM	0.2000	0.2750	0.9400	0.0140	0.0290	0.0800	0.0800	0.0200		0.1000	0.0010			0.0080		0.0080					0.3888			

REMARKS / Note

- 1: MATERIAL ACCORDING TO NACE MR0175/SO 15156-1-2-3 Ed.2009
- 2: MATERIAL ACCORDING TO ASME Sect. II Part. A 2015 Edition.
- 3: FULLY KILLED STEEL, FINE GRAIN TREATED.

Additional elements:	Quality inspector representative Ispezzore controllo qualità	Signature Riccardo Scottetti
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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

REPORT N.	TC-019212-16-0001	Issued on	31/01/2017	Customer	PROVEEDORA DE MATERIALES ANGER	Job n. / Com. n.	19212	Page n. / Pagina n.	7 of 8
Rapporto N.		Revised on		Cliente	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	7902		
Revision	0	According to	EN 10204:2004	Type	3.1				
Revisione		In accordo a	UNI EN 10204:2005	DESCRIPION / DESCRIZIONE					

Test Prova	Item Pos.	Qty Qtà	Customer code Codice cliente	Material Materiale	Heat Colata	Product Prodotto	TENSILE TEST AT ROOM TEMPERATURE / Trazione a temperatura ambiente	
							Yield strength Snerv. [Mpa]	Tensile strength Rottura [Mpa]
ZAXD	75	2000		A/SA105-14	16/78536	COUPLING S. 3000 SW A/SA105N 1	381.100	546.600
JAUD	76	585	*	A/SA105-14	111788	COUPLING S. 3000 SW A/SA105N 1.1/4	319.400	517.300
JCCX	76	415	*	A/SA105-14	113004	COUPLING S. 3000 SW A/SA105N 1.1/4	298.000	510.900

HEAT TREATMENT DATA AND REFERENCES TO OTHER CERTIFICATES / Dettagli di trattamento termico e riferimenti ad altri certificati

ZAXD MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR. CERT. 19749.RIVA*(VACUUM DEGASED STEEL)

JAUD MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 920 C COOLED IN STILL AIR. CERT. 313970/1.TUBOS REUNIDOS*

JCCX MATERIAL PRODUCED BY ELECT. FURNACE-NORMALIZED AT 920 C COOLED IN STILL AIR. CERT. 317926/2.TUBOS REUNIDOS*

Test Prova	Test loc.	Orient. Direz.	Specimen / Provino		Yield strength Snerv. [Mpa]	Tensile strength Rottura [Mpa]	Elongation Allung. [%]	Red. Of Area Contraz. [%]	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
			Shape Forma	A [mm ²] Sezione											
ZAXD	T/2	LONG	Round	124.900	50.000	381.100	546.600	32.400	67.700	10x10x55	-1	150-169-172	75-85-85	1.66-1.80-1.81	HBW 164-167
JAUD	T/2	LONG	Round	30.500	25.000	319.400	517.300	38.800	71.300	10x10x55	0	189-139-125	--	--	HBW 170-172
JCCX	T/2	LONG	Round	30.300	25.000	298.000	510.900	38.900	72.300	10x10x55	0	158-208-162	--	--	HBW 146-148

REMARKS / Note

- MATERIAL ACCORDING TO NACE MR0175/ISO 15156-1-2-3 Ed.2009
- MATERIAL ACCORDING TO ASME Sect. II Part. A 2015 Edition.
- FULLY KILLED STEEL, FINE GRAIN TREATED.

Additional elements:	Quality inspector representative
	Riccardo Scotsetti

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INSPECTION CERTIFICATE

Certificato di ispezione



REPORT N. Rapporto N.	TC-019212-16-0001	Issued on Revised on	31/01/2017	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.	19212	Page n./ Pagina n.	8 of 8
Revision Revisione	0	According to In accordo a	EN 10204:2004 UNI EN 10204:2005	Type Tipo		Purchase order and project/ Ordine e progetto	7902		

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.16.11; 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	