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CONSTANCIA DE INSPECCION

INSPECTION CONSTANCY

No. CONSTANCIA (constancy No.): **101497**

CLIENTE(customer): PLESA ANAHUAC Y CIAS., S.A. DE C.V.

DIRECCION(address): AV. VALLE DE LAS ALAMEDAS # 66 - O COL. SAN FCO. CHILPAN TULTITLAN, EDO. DE MEXICO C.P.54940

O.T. (order no.)	DIAMETRO (outside diam.)	ESPESOR (thickness)	GRADO (grade)	ESPECIFICACION (specification)	PROCESO (process)	PEDIDO (contract)	O. PREPARACION (preparation order)	PROVEEDOR (supplier)	FECHA (date)
33442	10.750"	0.225"	X42/5LB PSL1/A53B	API 5L 43 ED./A.S.T.M.	ERW	9495	B-165-2010	TERNIUM	13/12/2010

TUBO (pipe) O SERIE (SERIAL)	COLADA (heat)	TYPE	LOC	PRUEBA DE TENSION(tensile test) UNIDADES (units) PSI (Y.S.)	ORIENTACION. (orientation) 1 (T.S.)	TAMAÑO (size) 3 % EL.	Y.S/T.S.	BEND	HARDNESS	PRUEBA DE IMPACTO (impact test) °C °F ORIENTACION (orientation) ENERGY (lbs/ft) 1	2	3	AVG	TAMAÑO (size) SHEAR AREA 1	2	3	AVG	DWTT SHEAR AREA 1	2	AVG	GRAIN SIZE
23	273035	H	6		80900																
			7	46700	63700	37	0.73														
69	471206	H	6		69900																
			7	52500	67700	40	0.77														
179	273038	H	6		60900																
			7	55000	70000	37	0.78														
267	462348	H	6		76000																
			7	52700	68100	35	0.77														
291	172968	H	6		75100																
			7	54400	70100	38	0.77														
397	273039	H	6		68800																
			7	55000	71100	35	0.77														

(%)ANALISIS QUIMICO / chemical analysis (%)

TUBO	TYPE	LOC	C	Mn	P	S	Si	Al	Cu	Cr	Ni	Mo	Ti	Nb	B	V	N	Als	Ca	PCM	CE
23	H	7	0.15	0.60	0.014	0.006	0.095	0.032	0.010	0.020	0.020	0.003	-	-	-	-	-	-	-	-	0.26
	P	7	0.22	0.60	0.018	0.009	0.111	0.040	0.008	0.018	0.024	0.001	0.001	0.002	0.0004	0.001	-	-	0.002	0.26	0.33
	P	7	0.22	0.60	0.019	0.008	0.109	0.038	0.011	0.018	0.024	0.001	0.001	0.002	0.0003	0.001	-	-	0.001	0.25	0.32
69	H	7	0.15	0.61	0.018	0.010	0.090	0.035	0.020	0.030	0.030	0.004	-	-	-	-	-	-	-	-	0.26
	P	7	0.19	0.60	0.022	0.012	0.105	0.041	0.017	0.030	0.029	0.001	0.001	0.002	0.0004	0.001	-	-	0.002	0.23	0.30
	P	7	0.19	0.60	0.020	0.013	0.104	0.039	0.018	0.029	0.027	0.001	0.001	0.002	0.0003	0.001	-	-	0.002	0.23	0.30
179	H	7	0.16	0.58	0.018	0.010	0.122	0.042	0.020	0.040	0.030	0.006	-	-	-	-	-	-	-	-	0.27
	P	7	0.22	0.57	0.020	0.013	0.130	0.051	0.020	0.036	0.026	0.001	0.002	0.002	0.0004	0.001	-	-	0.002	0.26	0.33
	P	7	0.22	0.57	0.019	0.015	0.127	0.044	0.018	0.036	0.026	0.001	0.002	0.003	0.0003	0.001	-	-	0.002	0.26	0.33
267	H	7	0.15	0.60	0.010	0.015	0.102	0.040	0.020	0.020	0.030	0.005	-	-	-	-	-	-	-	-	0.26
	P	7	0.19	0.58	0.018	0.018	0.118	0.046	0.016	0.023	0.028	0.001	0.001	0.002	0.0003	0.001	-	-	0.001	0.23	0.29
	P	7	0.19	0.58	0.013	0.014	0.120	0.051	0.019	0.024	0.030	0.001	0.001	0.002	0.0003	0.001	-	-	0.001	0.23	0.30
291	H	7	0.16	0.60	0.021	0.007	0.104	0.041	0.010	0.020	0.020	0.003	-	-	-	-	-	-	-	-	0.27
	P	7	0.21	0.60	0.025	0.007	0.120	0.046	0.005	0.019	0.022	0.001	0.001	0.002	0.0004	0.001	-	-	0.001	0.25	0.32
	P	7	0.21	0.60	0.023	0.009	0.120	0.045	0.008	0.020	0.022	0.001	0.001	0.003	0.0003	0.001	-	-	0.002	0.25	0.32
397	H	7	0.15	0.57	0.016	0.009	0.099	0.030	0.030	0.030	0.030	0.005	-	-	-	-	-	-	-	-	0.26
	P	7	0.21	0.57	0.018	0.010	0.127	0.045	0.025	0.034	0.028	0.001	0.002	0.002	0.0004	0.001	-	-	0.003	0.24	0.31
	P	7	0.22	0.57	0.018	0.011	0.121	0.042	0.023	0.033	0.026	0.001	0.002	0.002	0.0004	0.001	-	-	0.002	0.26	0.32

CRITERIOS DE ACEPTACION (Acceptance criteria)		Y.S.	T.S.	% EL.	Y.S/T.S.	BEND	HARDNESS	ENERGY 1	2	3	AVG	SHEAR AREA 1	2	3	AVG	SHEAR AREA 1	2	AVG	GRAIN SIZE	C	Mn	P	S	Si	Al	Cu	Cr	Ni	Mo	Ti	Nb	B	V	N	Als	Ca	PCM	CE
	MIN:	42000	60000	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	MAX:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.26	1.20	0.030	0.030	-	-	0.500	0.400	0.400	0.150	0.040	-	-	0.080	-	-	-	-	0.43
	PROMEDIO (AVG.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

PRUEBA HIDROSTATICA: (hidrostatic test) PRESION: (pressure) 1500 Psi TIEMPO: (time) 10 sec

ULTRASONIDO(U.T.): (ultrasonic) STANDARD DE REFERENCIA: J REFERENCE STANDARD

PRUEBA DE APLASTAMIENTO: (flattening test) 0° OK 90° OK

NORMALIZADO DE SOLDADURA: (heat treatment weld) TEMPERATURA (temperature): 1600° F MIN (NO UNTEMPERED MARTENSITE REMAINS)

ESTANDAR DE REFERENCIA (REFERENCE STANDARD) F: U.T. DRILLED HOLE 1/16", G: U.T. DRILLED HOLE 1/8", I: U.T. NOTCH N-5, J: U.T. NOTCH N-10 L: RT HOLE 1/16", N: RT HOLE 2-2T O: RT HOLE 2-4T Barreno (Drilled Hole)=H Muesca (Notch)=N

ORIENTACION(orientation):
1. TRANSVERSAL (transverse)
2. LONGITUDINAL (longitudinal)

TAMAÑO (size)
3.RECTANGULAR(rectangular)
4.CILINDRICA(round bar) 0.500"
5.CILINDRICA(round bar) 0.350"

LOCALIZACION (location)
6. SOLDADURA (weld)
7. METAL BASE (base metal)
8. ZONA AFECTADA (h.a.z.)
9. LINEA DE FUSION (fusion line)

TIPO DE PRUEBA (type)
H: COLADA (heat)
P: PRODUCTO (product)
R: REMUESTREO (recheck)
T: UNIDAD DE PRUEBA (Test unit)

HACEMOS CONSTAR QUE EL MATERIAL DESCRITO HA SIDO FABRICADO, MUESTREADO, PROBADO E INSPECCIONADO DE ACUERDO CON LA ESPECIFICACION MENCIONADA, Y QUE LOS RESULTADOS SON COMO APARECEN EN LOS REGISTROS DE LA COMPAÑIA.
(WE HEREBY VERIFY THAT MATERIAL DESCRIBED HEREIN HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE SPECIFICATION MENTIONED AND THAT THE TEST RESULT ARE AS THEY APPEAR IN RECORDS OF THE COMPANY)

TUBACERO, S.A. DE C.V.

Control de Calidad (Quality Control)

Ing. Samuel Montoya Laguna.

04

REV. 5 Jun.-10

F-TUME-013