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Created on: 19.10.2017	Modified on: 31.10.2017

INSPECTION CERTIFICATE
CERTIFICADO DE INSPECCION
ABNAHMEPRUFZEUGNIS
EN 10204:2004 / 3.1



TTI - TUBACEX TUBOS INOXIDABLES  
Registro Mercantil de Alava, Tomo 587, Folio 189, Hoja VI 2885 - N.I.F. A-01140227  
Tres cruces, 8  
01400 Llodio (Alava)  
SPAIN

CUSTOMER DESCRIPTION/DESCRIPCION DEL CLIENTE/KUNDENBESCHREIBUNG/COMMETTANT

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CLIENT ORDER/PEPIDO CLIENTE/KUNDEN AUFTRAGSNUMMER/NO. DE COMMANDE:  
SALES ORDER/PEPIDO VENTAS/AUFTRAGSNUMMER/NO. DE COMMANDE:

MATERIAL: SEAM, STAINL. STEEL TUBES/PIPES/TUBOS INOXIDABLES SIN SOLDADURA/TUBES INOX SANS SOUDURE/NAHTLOSE EDELSTAHL/ROHRE
HEAT-TREATED, PICKLED / TRATADO, DECAPADO / HYPERTREMPE, DECAPE / WÄRMERBEHANDELT, GEBEIZT, PASSIVIERT / PASIVADO / PASSIVE
GRADE / ACERO / GRADE / WERKSTOFF: S31254, 1.4547,
STANDARD / NORMA / STANDARD / LIEFERUNG NACH: ASME SECT. II PART. A SA312/SA312M-2015 ED.
ASTM A312/A312M-16a
EN 10216-5:2013 TC2
EN 10297-2:2005
Materials System Specification 01-SAMSS-046 - 30 October 2013
Hydrotest for all tubes
CORROSION TESTED ACC. TO ASTM A262 PRACTICE E
CORROSION TESTED ACC. TO ASTM A923 TEST METHOD C
CORROSION TESTED ACC. TO ASTM G48 TEST METHOD A, 24 hours & 48 hours.
CORROSION TESTED ACC. TO EN ISO 3651-2 METHOD C
VICKERS HARDNESS TEST
HYDROTEST
MICROGRAPHIC EXAMINATION
NACE MR0103-2012
ANSI/NACE MR0175/ISO15156-3:2015
NORSOK M650 QTR NO.3
NORSOK M630 REV.6 MDS R11 REV.5
TOLERANCES / TOLERANCIAS / TOLERANZEN NACH: ASME SECT. II PART. A SA999/SA999M-2015 ED.
ASTM A999/A999M-16
EN ISO 1127/03.97 D3/D13
RANDOM LENGTHS / LARGOS VARIABLES / LONGUEUR COURANTE / EINGEENGT LÄNGE 6.096/7.315 MM
PLAIN ENDS / LISOS / EXTRÊMITE D'ÉQUERRE / GLATTE ENDEN,
DIMENSIONS/DIMENSIONS/DIMENSIONS: 21.34 X 2.77 MM - 1/2" SCH 40S
COLD FINISHED/LAMINADOS EN FRIO/KALTGEFORMT/LAMINES A FROID



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TUBACEX TUBOS INOXIDABLES S.A.U.  
INGENIERIA DE CALIDAD  
Inigo Kertola Alcobaz

Sales Item	Client Item	Pos Ped.	Pos Cnt	Auftrag Pos	Kunde Pos	Ustine Pos	Com. Pos		10
Delivery No	N° Entrega	N° lote	Los Nr.	Lot d inspection	P704255	53236	100	904 KG	681.68 M
Tot Lgth	Long, Ton	Gesamtlänge	Tollung	Long, Ton	6096-7315 MM				

RAW MATERIAL/DATOS MATERIAL/VORMATERIAL/MATIERE PREMIERE	Heat No:	33236
Method	Electric furnace+AOD	

[illegible]

HEAT TREATING/TREATAMIENTO TERMICO/VARMBEHANDLING/TRAITEMENT THERMIQUE

HIPERTERMIZADOS A 1150 °C , 18 min , Agua

SOLUTION ANNEALED AT 1150 °C , 18 min , WATER

HIPERTERMIZADOS 1150 °C , 18 min , L'EAU

LOESUNGSGEGLEUTHT 1150 °C , 18 min , Wasser

TENSILE TEST/TEST DE TENSION/ESSAI TRACTION/ZUGVERSUCH					
Lot No.	Sample	T	Rp0.2	Rpl.0	Rm
P1704255	1	MPa 20	MPa 379	MPa 433	MPa 762
	2			451	757
					A2"
					%
					L
					F
					mm
					Spec.Type
					Spec.Dim
					21.36

HARDNESS TEST/TEST DE DUREZ/HAERTEPRÜFUNG			
Lot No.	Sample	HRB1	HV1
P1704255	1	86	85
	2	87	85
	3	87	86
	165		
	169		

Corrosion test ASTM G48 practice "A"/LOCHERASSTEST ASTM G 48 PRA	Sample	T	Pits-20x	W. loss	g/m <sup>2</sup>	Horas
Lot No.	1	50	N	0.2877	48.0	
Corrosion test ASTM G48 practice "A"/LOCHERASSTEST ASTM G 48 PRA						

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**INOXIDABLES S.A.U.**  
INGENIERIA DE CALIDAD  
INTEC (9076)  
Teléfono 872014 Alcobar

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CORROSION ACCORDING TO ASTM A923 C/CORROSION DE ACUERDO A ASTM A923 C/CORROSION ACCORDING TO ASTM A923

Lot No. Sample T Pts-20x Wloss time

P1704255 1 50 C MDD 0.9746 24.0

Corrosion test ASTM G48 practice "A"/Corrosion ASTM G48 práctica "A"/LOCHFRASSTEST ASTM G 48 PRA

Lot No. Sample T Pts-20x Wloss time

P1704255 1 50 C g/m<sup>2</sup> 0.0975 24.0

METALLURGICAL TESTS/ENSAYOS METALÚRGICOS/METALLURGISCHE PRÜFUNGEN/ESSAIS

MACROETCHING ACCORDING TO ASTM E381: SATISFACTORY

MACROTAQUE DE ACUERDO A ASTM E381: SATISFACTORY

MAKROETCH PRUEFUNG ASTM E381: O.B

MACROETCHING ACCORDING TO ASTM E381: SATISFACTORY

INTERGRANULAR CORROSION TEST ACC. TO ASTM A262 PRACT. "E": SATISFACTORY

ENSAYO DE CORROSION INTERGRANULAR DE ACUERDO A ASTM A262 PRACT. "E": SATISFACTORY

SATISFACTORY

BESTÄNDIGKEIT GEGEN INTERKRISTALLINE KORROSION ENTSPRECHEND ASTM A262

PRACT. "E": IN ORDNUNG

ESSAI DE CORR. INTERGR. SELON ASTM A262 PRACT. "E": SATISFAISANT

INTERGRANULAR CORROSION TEST ACC. TO ISO 3651-2 MET. "C": SATISFACTORY

ENSAYO DE CORROSION INTERGRANULAR DE ACUERDO A ISO 3651-2 MET. "C": SATISFACTORY

SATISFACTORY

BESTÄNDIGKEIT GEGEN INTERKRISTALLINE KORROSION ENTSPRECHEND ISO 3651-2

MET. "C": IN ORDNUNG

ESSAI DE CORR. INTERGR. SELON ASTM ISO 3651-2 MET. "C": SATISFAISANT

NON-DESTRUCTIVE TESTS/ENSAYOS NO DESTRUCTIVOS/ZERSTÖRUNGSFREIE

PRÜFUNGEN/ESSAIS NON DESTRUCTIFS

POSITIVE MATERIAL IDENTIFICATION TEST ON EACH TUBE/PIPE BY

"X-RAY-FLUORESCENCE-ANALYZER": SATISFACTORY

VERIFICACION DEL GRADO DE ACERO EN CADA TUBO MEDIANTE "ANALIZADOR DE

FLUORESCENCIA DE RAYOS X": SATISFACTORY

VERWECHSLUNGSPRUEFUNG AN JEDEM ROHR MIT

"RÖNTGEN-FLUORESCENZ-ANALYSATOR": IN ORDNUNG

VERIFICATION DE LA NUANCE SUR CHAQUE TUBE PAR

"X-RAY-FLUORESCENCE-ANALYZER": SATISFAISANT

HYDROSTATIC PRESSURE TESTED AT 170 bar, 2500 PSI DURING 5 SEC ON EACH

TUBE/PIPE: SATISFACTORY

ENSAYO HIDROSTATICO A 170 bar, 2500 PSI DURANTE 5 SEC EN CADA TUBO:

SATISFACTORY

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Ing. Arzola Alondra

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WASSERDRUCKPRÜFUNG BEI 170 bar, 2500 PSI HALTEZEIT 5 SEC JE KOHR: IN  
ORDNUNG  
ESSAI DE PRESSION HYDROSTATIQUE À 170 bar, 2500 PSI PENDANT 5 SEC SUR  
CHAQUE TUBE: SATISFAISANT

CHLORIDE CONTENT LESS THAN 50 PPM  
CONTENIDO DE CLORURO INFERIOR A 50 PPM  
CHLORIDGEGHALT IM WASSERWENDETEIL: 50 PPM  
CHLORURE CONTENU DANS L'EAU UTILISEE: 50 PPM

100% EDDY CURRENT TEST AT DIN EN 10246-2: SATISFACTORY  
100% ENSAYO DE CORRIENTES INDUCIDAS DE ACUERDO A DIN EN 10246-2:  
100% WIRBELSTROM PRÜFUNG NACH DIN EN 10246-2: O.B.  
100% CONTRÔLE COURANTS FOUCAULT D'APRÈS DIN EN 10246-2: BIEN

DIMENSIONAL CHECKING ON EACH TUBE: SATISFACTORY  
INSPECCION DIMENSIONAL AL 100% DE LOS TUBOS SATISFACTORIA  
100% MASSKONTROLLE: O.B.  
VERIFICATION DIMENTIONNELLE AU 100% DES TUBES, SATISFAISANTE

VISUAL INSPECTION ON EACH TUBE: SATISFACTORY  
INSPECCION VISUAL AL 100% DE LOS TUBOS, SATISFACTORIA  
100% BESICHTIGUNG: O.B.  
EXAMEN VISUEL AU 100% DES TUBES, SATISFAISANT

TECHNOLOGICAL TESTS/ENSAYOS TECNOLÓGICOS/TECHNOLOGISCHE  
PRÜFUNGEN/TECHNOLOGICAL TESTS

FLARING TEST: SATISFACTORY  
ABOCARDADO S. NORMA: SATISFACTORIO  
AUFWEITVERSUCH: IN ORDNUNG  
ESSAI D'ÉVASEMENT: SATISFAISANT  
PLATTENING TEST: SATISFACTORY  
APLASTADO S. NORMA: SATISFACTORIO  
RINGFALTVERSUCH: IN ORDNUNG  
ESSAI D'APLATTISSEMENT: SATISFAISANT

MARKING/ETIQUETADO/KENNZEICHNUNG/MARKSTEXT

TX2 TX1 TUBACEX 21,34 X 2,77 MM - 1/2" SCH 40S ASME SA312 ASTM A312 EN 10216-5 TC2 EN 10297-2 SA312SA 1.4547  
CFD CD SMLS ET HEAT/ PMI-AV LOTNO/ MADE IN SPAIN

REMARKS/OBSERVACIONES/ANMERKUNGEN/REMARKQUES



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Inigo Arriola Alcidar

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INOXIDABLES S.A.U.  
INGENIERIA DE CALIDAD

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REMARKS/OBSERVACIONES/ANMERKUNG/REMARKQUES

NO MERCURY, MERCURY COMPOUNDS OR MERCURY BEARING INSTRUMENTS AND/OR EQUIPMENT HAVE BEEN USED ALONG  
MANUFACTURING AND INSPECTION PROCESS.  
DURANTE LOS PROCESOS DE FABRICACIÓN E INSPECCIÓN NO SE HA USADO MERCURIO NI INSTRUMENTOS Y/O EQUIPOS  
CONTENIDO MERCURIO O CON COMPONENTES DE MERCURIO.  
KEINE QUECKSILBER, BZW. QUECKSILBERENTHALTENDE KOMPONENTEN ODER KUGELLAGERINSTRUMENTE UND/ODER GERÄTE SIND  
BENUTZT WORDEN PRODUKTION UND BESICHTIGUNGSPROZESS.  
IL N'A PAS ÉTÉ FAIT USAGE DE MERCURE, DE COMPOSÉS CONTENANT DU MERCURE OU DE MATÉRIAUX ET/OU D'INSTRUMENT  
CONTENANT DU MERCURE TOUT AU LONG DES ÉTAPES DE FABRICATION ET DU PROCESSUS D'INSPECTION ET DE CONTRÔLE.

NO WELDING OR WELD REPAIRS WERE MADE  
SIN REPARACION POR SOLDADURA  
KEINE SCHWEISSREPARATUR WURDE VORGENOMMEN  
SANS RÉPARATION AVEC SOUDURE

MATERIAL MANUFACTURER APPROVED BY TÜV SÜD Industrie Service GmbH

(NOTIFIED BODY 036) TO ISSUE CERTIFICATES OF SPECIFIC PRODUCT CONTROL IN

ACCORDING TO PRESSURE EQUIPMENT DIRECTIVE 2014/68/EU ANNEX I POINT 4.3.

FABRICANTE DE MATERIALES APROBADO POR TÜV SÜD Industrie Service GmbH (ORGANISMO NOTIFICADO 0036) PARA LA

EMISION DE CERTIFICADOS ESPECIFICOS DE CONTROL DE PRODUCTO DE ACUERDO AL ANEXO I, PUNTO 4.3 DE LA DIRECTIVA DE

EQUIPOS A PRESION 2014/68/EU.

WERKSTOFFHERSTELLER MIT BEZUG AUF DIE LIEGENDE ZERTIFIZIERUNG UND IN ÜBEREINSTIMMUNG MIT DER DRUCKGERÄTE-RICHTLINIE

2014/68/EU UND DEN ZUGRÜNDE LIEGENDEN SPEZIFIKATIONEN ENTSPR. DER BENANNTE STELLE NR.0036, TÜV SÜD Industrie

Service GmbH

PRODUCTEUR DU MATÉRIEL APPRUVÉ PAR TÜV SÜD Industrie Service GmbH (N.B. 0036) POUR ÉMISSION DES CERTIFICATS

SPECIFIQUE DE CONTRÔLE DE PRODUIT SELON LA DIRECTIVE DES ÉQUIPES A PRESION 2014/68/EU ANNEXE I POINT 4.3.

MATERIAL CHARACTERISTICS COMPLY WITH POINT 7.5 OF ANNEX I TO PED BY HAVING AN ELONGATION AFTER RUPTURE AT

TENSILE TEST NO LESS THAN 14% AND A BENDING RUPTURE ENERGY AT IMPACT TEST NO LESS THAN 27J AT 20°C.

LAS CARACTERÍSTICAS DEL MATERIAL CUMPLEN CON LOS REQUISITOS DEL PUNTO 7.5 DE LA DIRECTIVA PED POR TENER UN

ALARGAMIENTO TRAS ROTA EN EL ENSAYO DE TRACCION NO INFERIOR AL 14% Y PO DE TRACCION NO INFERIOR AL 14% Y POR

TENER UNA RESISTENCIA AL IMPACTO NO INFERIOR A 27 J A 20°C.

DIE WERKSTOFFE-WERTE ENTSPRECHEN PUNKT 7.5 DER DGRL ANHANG I, MIT EINERBRUCHDEHNUNG = 14% IM NORMGEWÄSS

DURCHGEFÜHRTEN ZUGVERSUCH UND DER KERBSCHLAGARBEIT = 27J AN EINER ISO - V PRO PROBE BEI EINER TEMPERATUR VON

HÖCHSTENS 20°C

LES CARACTÉRISTIQUES DU MATÉRIEL, AYANT UN ALLONGEMENT APRES RUPTURE A L'ESSAI DE TRACTION NON INFERIEUR DU

14% ET UNE RESISTENCE A LA FLEXION PAR CHOC A 20°C NON INFERIEUR A 27J, SONT CONFORMES AUX PRESCRIPTIONS DU

PONT 7.5 DE L'ANNEXE I DE PED.

MATERIAL IS FREE OF RADIATION CONTAMINATION

EL MATERIAL ESTA LIBRE DE CONTAMINACION POR RADIACIONES

MATERIAL IS FREI VON RADIOAKTIVITÄT

MATÉRIEL LIBRE DE POLLUTION RADIOACTIVE

OBSERVATIONS:

Radiation levels on pipes are less than 100 Becquerels/gram



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Algo Azetola Alcedar

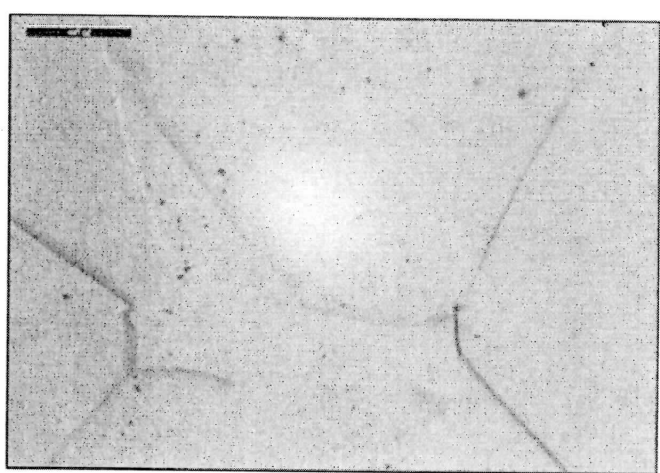
TUBACEX TUBOS  
INGENIERIA DE CALIDAD



The holder hereby certifies that the material has been designed and manufactured according to the requirements specified in the certificate. The certificate is issued by a competent authority and is valid without further requirements. The certificate is issued by a competent authority and is valid without further requirements. The certificate is issued by a competent authority and is valid without further requirements.

TUBACEX TUBOS  
INOXIDABLES  
INGENIERIA DE CALIDAD  
Instituto Arizola Alcobax

P1704255 1002395-10 C-53236 LONG. X500.jpg



MATERIAL FREE FROM INTERMETALLIC PHASES  
AND PRECIPITATES. UNIFORM STRUCTURE  
ACROSS FULL WALL THICKNESS

Microstructure:

Sales Order : 1002395  
Sales Item : 10  
Standard : ASTM A312  
Grade : UNS S31254  
Dimensions : 21.34 X 2.77 MM - 1/2" SCH 40S

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Annex 1  
Microphotographs

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