

44928



**INSPECTION CERTIFICATE
CERTIFICADO DE INSPECCION
CERTIFICAT DE RECEPCION
ABNAHMEPRÜFBEREIGNIS
EN 10204 3.1**

Number: 536283 Rev: 00
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Created on: 20.12.2011 Modified on: 20.12.2011

Heat	Seq	Sn	V	Ti	Nb	B	W	Ta	N	Pres
L 44928	1	0,003	0,067	0,001	0,017	0,0022	0,050	0,020	0,1710	36,5420

SURFACE FINISH/ACABADO SUPERFICIAL/FINITION DE SURFACE/OBERFLÄCHENESCHAFFENHEIT
ROUND MACHINED BARS
BARRAS REDONDAS MECANIZADAS
BARRES RONDES USINÉES
BEARBEITETER RUNDSTABSTAHL

INGOT REDUCTION/REDUCCION DE LAMINACION/Taux de CORROYAGE/VERFORMUNGSGRAD

Item	Reduction
10	10,10

HEAT TREATMENT/TRATAMIENTO TÉRMICO/TRAITEMENT THERMIQUE/WÄRMEBEHANDLUNG
HIPERTEMPLADOS 1070 °C 8 H ENFRIADOS AL AGUA
WATER FINISH TEMPERATURE 45°C
SOLUT. ANNEALED 1070 °C 8 H WATER COOLING
HYPERTREMPS 1070 °C 8 H REFOID A L' EAU
LOSSUNGSGLÜHT 1070 °C 8 H WASSERGEHÄRTET

TENSILE TEST/TEST DE TENSION/ESSAI TRACTION/ZUGVERSUCH

Lot No.	Sample T	Rp0.2	Rm	A2"	Z	Type	Sam Cond
	°C	N/mm2	N/mm2	%	%		
200058137	1 20	529	765	42	73	T	S
200058193	1 20	549	775	44	72	T	S

HARDNESS TEST/TEST DE DUREZA/DURKE/HÄRTEPRÜFUNG

Lot No.	Sample	HRC1	HRC2	Sam Cond
200058137	1	20,0	21,0	S
200058193	1	15,0	16,0	S

IMPACT TEST/TEST DE IMPACTO/RESILIENCIA/KERBSCHLAGVERSUCH

Lot No.	Sample T	Wspec	Ecv 1	Ecv 2	Ecv 3	Ecv AVGType	Le1	Le2	Le3sq.
	°C	J	J	J	J		mm	mm	mm
200058137	1 -50	10,0	293	293	293	L	2,70	2,50	2,60
	1 -50	10,0	222	284	287	T	1,70	1,90	1,80
	1 -60	10,0	293	293	293	L	2,60	2,60	2,60
200058193	1 -50	10,0	293	293	293	L	2,70	2,40	2,40
	1 -60	10,0	293	293	293	L	2,60	2,60	2,60
	1 -50	10,0	272	220	293	T	2,10	1,90	2,10

Lot No.	Sample	Shear 1	Shear 2	Shear 3	Sam Cond
		%	%	%	
200058137	1	90	90	90	S
	1	85	80	80	S
	1	90	90	90	S
200058193	1	90	90	90	S
	1	90	90	90	S

Tracer # 258660



We hereby certify that the material herein described has been manufactured, sampled, tested, and certified in accordance with above standards and specifications and conforms to the requirements. This certificate is issued by a computerized system and it is valid without original signature. In case the owner of the certificate would require an original of it, he must return its validity to the issuer, assuming the responsibility for any accident or VULNERABILITY, and returned such. Any forgery or falsification of this certificate.

ACERALAVA
ACERIA DE ALAVA S.A.
 Director de Calidad

Antonio Jugo Carranza



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Lot No.	Sample	Shear 1	Shear 2	Shear 3	Sam Coud
	%	%	%		
	1	80	75	85	5

**CORROSION ACCORDING TO ASTM G48A
NO FITTING OBSERVED AT 25X MAG**

Lot No.	Sample	T	W.Loss	Time
		°C	g/m ²	h
200058137	1	30	0,0000	24,0
200058193	1	30	0,0000	24,0

FERRITE ACCORDING TO ASTM E 563

Lot No.	Sample	% Ferr	Dev. Ferr
		%	%
200058137	1	47,10	1,70
200058193	1	46,70	1,50

**ENSAYOS METALÚRGICOS/METALLURGICAL TESTS/ESSAIS
METALLURGIQUES/METALLURGISCHE PRÜFUNGEN**

**ENSAYO DE CORROSIÓN INTERGRANULAR DE ACUERDO A ISO 3651-2 NET.A:
SATISFACTORIO**

**INTERGRANULAR CORROSION TEST ACC.TO DIN EN ISO 3651-2 NET.A:
SATISFACTORY**

**ESSAI DE CORR. INTERGR. SELON ASTM ISO 3651-2 NET."A":SATISFAISANT
BESTÄNDIGKEIT GEGEN INTERKRISTALLINE KORROSION ENTSPRECHEND ISO 3651-2
NET."A": IN ORDNUNG**

**ENSAYOS NO DESTRUCTIVOS/NON-DESTRUCTIVE TESTS/ESSAIS NON
DESTRUCTIFS/ZERSTÖRUNGSFREIE PRÜFUNGEN**

**ENSAYO DE ULTRASONIDOS SEGÚN:
CLASE: QLI NORMA: ASTM A388/A745**

**ULTRASONIC TESTED ACCORDING TO: CLASS FBH-3; STANDARD ASTM
A-388/BA388/A-745 QLI SATISFACTORY**

**ESSAI D'ULTRASON D'ACCORD A:
CLASS: QLI NORME: ASTM A388/A745**

**ULTRASCHALL PRÜFUNG:
KLASS QLI NORM: ASTM A388/A745**

**GRADO DE ACERO VERIFICADO POR ESPECTROGRAFÍA: SATISFACTORIO
STEEL GRADE ASSESSMENT BY SPECTROSCOPIC: WITHOUT OBJECTIONS
NUANCE D'ACIER VERIFEE PAR SPECTROGRAPHIE: SATISFAISANT
WENESTOFFVERWECHSLUNGSPRÜFUNG SPECTROSKOPISCH: GRWE BEANSTANDUNG**



Tracer # 258662

**ACERALAVA
ACERIA DE ALAVA S.A.
Director de Calidad**

[Signature]
Antonio Jago Oyarzun

We hereby certify that the material herein described has been manufactured, sampled, tested, and inspected in accordance with above specifications and conditions and conforms thereto. This certificate is issued by a computerized system and it is non-transferable. In case the copy of the certificate would reduce on a copy of it, the user must be directly to the issuer, retaining the responsibility for any withdrawal or falsification, and allowed over. Any forgery or falsification of this certificate.



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REMARKS/OBSERVACIONES/REMARQUES/ANMERKUNG
 INSPECCION DIMENSIONAL AL 100% SATISFACTORIO
 100% DIMENSIONAL CHECKING: SATISFACTORY
 100% CONTROLE DIMENSIONNEL: OK
 100% MASSKONTROLLE: OHNE BEANSTANDUNG
 INSPECCION VISUAL AL 100% SATISFACTORIO
 100% VISUAL INSPECTION: SATISFACTORY
 100% EXAMEN VISUEL: OK
 100% BESICHTIGUNG KONTROLLE: OHNE BEANSTANDUNG

SELLO DE INSPECTOR DE FABRICA: ACI
 STAMP OF THE INSPECTION REPRESENTATIVE: ACI
 TIMBRE DU CONTROLLEUR: ACI
 STEINDEL DES ABNAHMEBEAUFTRAGTEN: ACI

MATERIAL FABRICADO SEGÚN LOS REQUISITOS DE UN SISTEMA CERTIFICADO ISO 9001 (MANUAL DE CALIDAD REVISIÓN 10 DE FECHA ABRIL).
 MATERIAL MANUFACTURED TO AN ISO 9001 CERTIFIED QUALITY SYSTEM (QUALITY MANUAL REVISION 10, DATED ON APRIL 2009)
 MATERIEL PRODUIT PER LES REQUISITIONS D'UNE SYSTEME DE QUALITE CERTIFIESELON ISO 9001 (MANUEL DE QUALITE REVISION 10, AVRIL 2009)
 MATERIAL PRODUZERT ZUM QUALITÄT HANDBUCH, NEUNTE REVISION 10 VON APRIL 2009, LAUT QUALITÄT SYSTEM, ISO 9001 CERTIFIZIERT.

ESTE MATERIAL Y LOS COMPONENTES USADOS EN SU FABRICACIÓN ESTÁN EXENTOS DE MERCURIO
 THIS MATERIAL AND THE ELEMENTS USED ALONG MANUFACTURING ARE MERCURY FREE
 CE MATERIEL ET LES ELEMENTS EMPLOYÉS DANS L'ÉLABORATION NE CONTIENNENT PAS DE MERCURE
 DIESES MAT. UND DIE IN SEINER HERSTELLUNG GEBRAUCHTEN WERKSTOFFE ENTHALTEN KEIN QUECKSILBER
 NO SE HA REALIZADO SOLDADURA ALGUNA SOBRE ESTE MATERIAL
 NO WELDING WAS PERFORMED ON THE MATERIAL
 AUCUNE SOUDURE A ÉTÉ RÉALISÉE SUR LE MATÉRIEL
 ES IST KEIN SCHWEIßEN AUF DEM MATERIAL DURCHFÜHRT WORDEN.

FABRICANTE DE MATERIALES APROBADO CON CERTIFICADO N° 03/2001/MUC EMITIDO POR TÜV SÜDDEUTSCHLAND BAU UND BETRIEB GMBH (MUCHO ANTES NOTIFICADO 0036) PARA LA EMISIÓN DE CERTIFICADOS ESPECÍFICOS DE CONTROL DE PRODUCTO DE ACUERDO AL ANEXO I PUNTO 4.3 DE LA DIRECTIVA DE EQUIPOS A PRESION 97/23/EC.
 MATERIAL MANUFACTURER APPROVED WITH CERTIFICATE NR. 03/2001/MUC BY TÜV SÜDDEUTSCHLAND BAU UND BETRIEB GMBH (NOTIFIED BODY 0036) TO ISSUE CERTIFICATES OF SPECIFIC PRODUCT CONTROL IN ACCORDANCE WITH PRESSURE EQUIPMENT DIRECTIVE 97/23/EC ANNEX I POINT 4.3
 PRODUCTEUR DU MATÉRIEL APPROUVÉ SOUS CERTIFICATION N° 03/2001/MUC PAR TÜV SÜDDEUTSCHLAND BAU UND BETRIEB GMBH (N.B. 0036, POUR ÉMISSION DES CERTIFICATS SPÉCIFIQUES DE CONTRÔLE DE PRODUIT SELON LA DIRECTIVE DES ÉQUIPES A PRESION 97/23/EC ANNEXE I POINT 4.3
 WERKSTOFFHERSTELLER MIT BERECHTIGUNG ZUR AUSSTELLUNG VON BESCHIEDNUNGEN ÜBER SPEZIFISCHE PRÜFUNGEN AN DEN WERKSTOFFEN IM GELTUNGSBEREICH DER ZERTIFIZIERUNG UND IN ÜBEREINSTIMMUNG MIT DER DRUCKGERÄTERICHTLINIE 97/23/EG UND DEN ZUGRUNDE LIEGENDEN SPEZIFIKATIONEN ENTSPRECHEND ZERTIFIKAT NR. 03/2001/MUC DER BENANNTEN STELLE NR. 0036, TÜV SÜDDEUTSCHLAND

ENSAYO DE CONTROL DE LA CONTAMINACIÓN POR RADIACIÓN: CORRECTO
 RADIATION CONTAMINATION TEST: OK
 ESSAI DE CONTAMINATION PAR RADIATION: OK
 STRAHLUNGVERSCHMUTZUNG - TEST: OK

Tracer # 258660



We hereby certify that the above described has been manufactured, supplied, tested, and checked and conforms to the specifications and quality under our responsibility. This certificate is valid only if it is used without signed alteration. In case the user does not agree with the conditions of this document, he should return it to the issuer. The issuer is not liable for any damage caused by the use of the product. The issuer is not liable for any damage caused by the use of the product.

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 ACERIA DE ALAVA,S.A.
 Director de Calidad

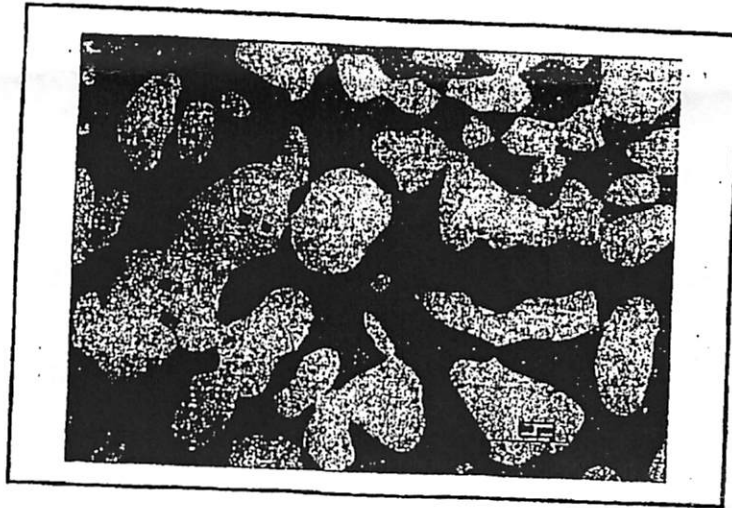
AS
 Andrea Jugo Orzantia



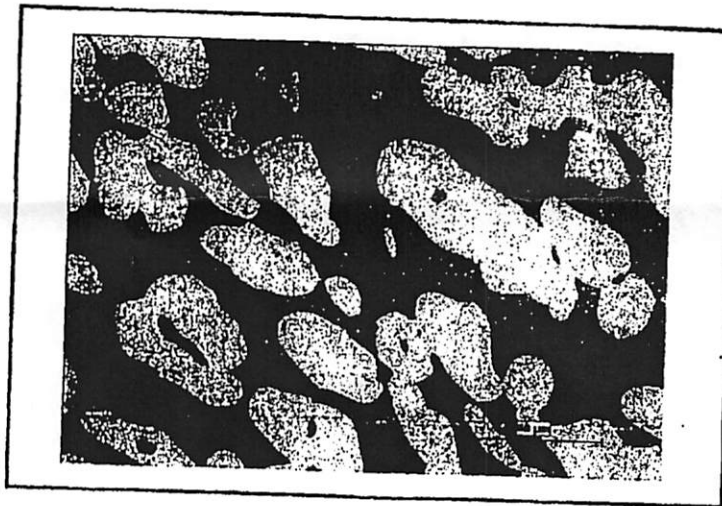
Microstructure

Sales Order/Item:

103920/10



103920 - 10 44928 1111HX 400 x

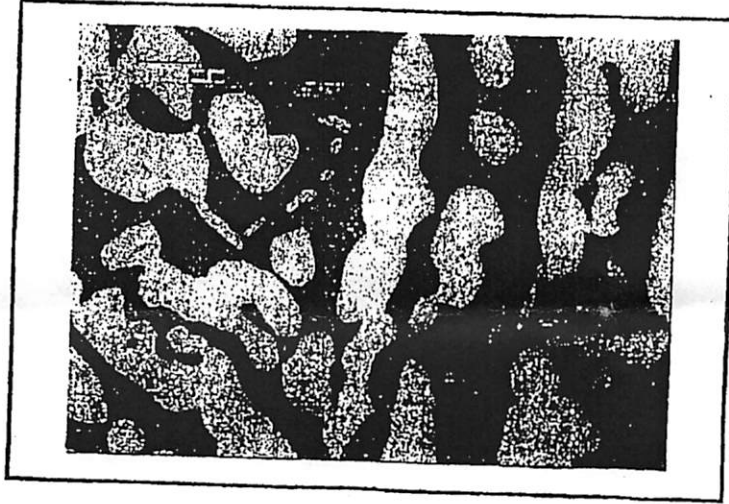


103920 - 10 44928 1111HX (2) 400 x

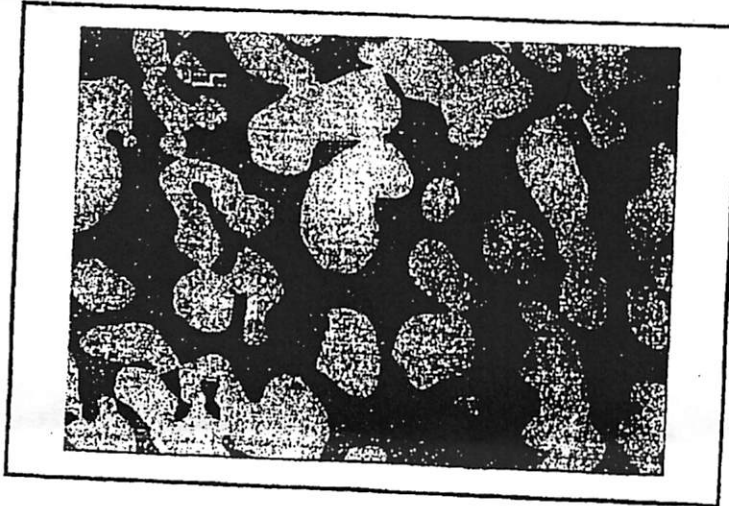
Tracer # 258 660

Tracer # 258600

103920-10 y 103921-10 44928 1111HZ (2) 400 x



103920-10 y 103921-10 44928 1111HZ 400 x

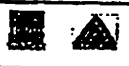


103920/10

Sales Order/Item:

Microstructure





FITTING CORROSION TEST G48A - TX-M-05A

LIQUNO/AMCUREO
LABORATORIES

MATERIAL IDENTIFICATION

Date of receipt of sample	Test date	Center	Order/Item	Specimen code	Specimen	Grade	Heat
	13/12/2011	2000	10422010	FK	111101	801803	44828

Dimensions from: Pipe		Bar	Manufacturing route	Heat treatment		
Outer Diameter (mm)	Thickness (mm)	Dimension		T (°C)	Travel speed (mm/s)	Coating method
		R166	FORGED or ROLLED			

TEST SPECIMEN/TEST SOLUTION

TYPE	Specimen dimensions					Test solution	
	Outer Diameter (mm)	Thickness (mm)	Length (mm)	Width (mm)	Exposed area (mm ²)	Solution	Volume (ml)
Flat specimen		0,32	80,63	25,2	3302,4782	10% Cl ₂ /Fe	800

TEST RESULTS

Starting date (ddmm/yyyy):	13/12/2011
Starting time (zz:zz):	10:00
Test temperature (°C):	30
Initial weight (g):	82,3415
Final weight (g):	82,3415
Weight loss (g):	
Time of exposure (h):	24
Attack depth (g/m ²):	
Attack depth (g/m ² /day):	
Attack depth (mdd):	
Microstructure at 20X:	OK

COMMENTS:

SPECIAL COMMENTS:

Laboratory Head: J.M. Tabares

Tracer # 258660