AUBERT & DUVAL 41, Rue de Villiers 92202 NEUILLY/SEINE FRANCE	PROCES-VERBAL DE RECEPTION TYPE 3.2 suivant NF EN 10204 INSPECTION REPORT TYPE 3.2 according to NF EN 10204	N° : A/607/7018-0/BV PAGE : 1/ 6

Livraison: LES ANCIZES le 02/07/1996 /BG Delivery N°:4940560101N/REF.494056 0101&0102	DESIGNATION-QUANTITE-DIMENSIONS-POIDS Description-Quantity-Dimensions-Weight
Nuance: SC 2104 W (Cr Ni 18.12 Mo N) Quality Etat de livraison: Hypertrempé Condition Laminage	35 barres dia. 75 ..... 2 338 kg Voir page 2/6
Commande et Spécifications Purchase Order & Specifications	C.E.R.N. - RECEPTION MEYRIN Site de Meyrin CH 1211 Genève 23 02039 SUISSE
Commande CS 5008023 du 01/02/96 Poste 1 Spécification 483 Révision 2	

ANALYSE/ANALYSIS Unité/Unit : %(m/m) sauf mention spécifique/except specific mention.

Coulée	C	Si	Mn	S	P	Ni	Cr	Mo	Fe
HY 2722 01 à 05	0.022 N2 0.143	0.58	1.73	<0.002	<0.025	12.99	17.57	2.70	Complt.

Réception sur Produit Livré Delivery Acceptance Test	Traction Tensile Test					Flexion par Choc Impact Test		Dureté Hardness
Etat Métallurgique Metallurgical Condition	Sens	Rm	Rp 0.2%	A% 5d	Z %	Sens		
		N/mm2	N/mm2					HB
Surlongueurs T.T. de livraison (1060°C/1h30mn/Eau)								
Lingot : HY 272203	L	647	310	48.5	85			167
Lingot : HY 272204	L	671	322	46.0	87			174

Résultats complémentaires Complementary Results — Observations / Remarks

HOMOGENEITE DU LOT : Vérifiée
ANNEXE DE REFERENCES : Page 3/6
MICROSTRUCTURE : Totalement austénitique
INCLUSIONS : Page 4/6
PERMEABILITE MAGNETIQUE : 1.0035
DEFAUTS OUVERTS : Ressuage page 5/6
DEFAUTS INTERNES : US page 6/6
DIMENSIONS : Conformes

Conforme à :
Spécification 483 Révision 2

Nota
certificati di materiali grezzi consegnati a mano dal CERN e impiegati per la fabbricazione di flange installate su CM M004
Ricevuto il 02/12/02

M. rifto = HY272204 - 05813

Nous certifions que, sauf exceptions ou dérogations énumérées ci-dessus, la fourniture citée a été fabriquée conformément aux spécifications techniques de la commande et que, toutes opérations de controle et essais effectués elle répond SOUS TOUS LES ASPECTS, aux spécifications particulières, aux plans, ainsi qu'aux normes en vigueur s'y rapportant.

Signatures et visas / signatures and visas

AUBERT & DUVAL
Pour le Directeur Général
et par délégation
Mr D. PICARD

BUREAU VERITAS J.C. CHAPUIS LYON

2/07/96

AD/CCC/01

A U B E R T & D U V A L 41, Rue de Villiers 92202 NEUILLY/SEINE FRANCE	CERTIFICAT DE CONTROLE TEST CERTIFICATE	N° : A/607/7018-0/BV PAGE : 2/ 6

Livraison: LES ANCIZES le 02/07/1996 /BG Delivery N°:4940560101N/REF.494056 0101&0102	**Commande et spécifications** Purchase order and Specifications
Nuance: SC 2104 W (Cr Ni 18.12 Mo N) Quality	Commande CS 5008023 du 01/02/96 Poste 1
Etat de livraison: Hypertrempé Condition Laminage	Spécification 483 Révision 2
	Lingot : HY 272203 & HY 272204

DESIGNATION - QUANTITE - DIMENSIONS - POIDS

14 barres dia. 75
Repères P2 - P3 -
A2 - A3 -
B2 - B3 -
C2 - C3 -
D2 - D3 -
E2 - E3 -
F2 - F3T.
926 kg
Lingot : HY 272203

21 barres dia. 75
Repères P1 - P2 - P3 -
A1 - A2 - A3 -
B1 - B2 - B3 -
C1 - C2 - C3 -
D1 - D2 - D3 -
E1 - E2 - E3 -
F1 - F2 - F3.T
1 412 kg
Lingot : HY 272204

Observations	Signatures et visas
	2/07/96 BUREAU VERITAS J.C. CHAPUIS LYON AUBERT & DUVAL Pour le Directeur Général et par délégation Mr D. PICARD

AD/CCD/01

AUBERT & DUVAL 41 rue de Villiers 92202 NEUILLY S/SEINE - FRANCE -	ANNEXE DE REFERENCES APPENDIX FOR REQUIREMENTS	N° A/607/7018-0/BV PAGE : 3/6

Usine : des ANCIZES Le 02/07/96 Livraison : N/REF. 494 056/01/01 & 01/02	Commande et Spécifications Purchase order and Specifications
Nuance : SC 2104 W (Cr Ni 18.12 Mo N) Quality	Commande CS 5008023 du 01/02/96 Poste 1 Spécification 483 Révision 2
Etat de livraison : Hypertrempé Condition Laminage	Coulée : Lingot HY 272203 Cast HY 272204

COMPOSITION CHIMIQUE SPECIFIEE

Composition chimique		Tolérances
Composants	Teneur en %	En dessus du maximum En dessous du minimum
Cr	16-18.5	0.20
Ni	12-14	0.15
C	0.030 max.	0.005
Si	1 max.	0.05
Mn	2 max.	0.04
Mo	2-3	0.10
N	0.14-0.20	0.01
P	0.045 max.	0.01
S	0.030 max.	0.005
Fe	Le reste	

CARACTERISTIQUES MECANIQUES SPECIFIEES

Rm N/mm2	≥ 600
Rp N/mm2	≥ 300
A %	≥ 35
HB	160/190

Observations Remarks	Signatures et Visas Signatures and Visas
Conforme à Spécification 483 Révision 2	4/7/96 BUREAU VERITAS J.C. CHAPUIS LYON AUBERT & DUVAL Pour le Directeur Général et par délégation Mr D. PICARD

AUBERT & DUVAL 41, Rue de Villiers 92202 NEUILLY/SEINE FRANCE	CERTIFICAT DE CONTROLE TEST CERTIFICATE	N° : A/607/7018-0/BV PAGE : 4/ 6

Livraison: LES ANCIZES le 02/07/1996 /BG Delivery N°:4940560101N/REF.494056 0101&0102	Commande et spécifications Purchase order and specifications
Nuance: SC 2104 W (Cr Ni 18.12 Mo N) Quality	Commande CS 5008023 du 01/02/96 Poste 1
Etat de livraison: Hypertrempé Condition Laminage	Spécification 483 Révision 2
	Lingot : HY 272203 & HY 272204

INCLUSIONS

Lingot : HY 272203

Type d'inclusions		Nombre de champs T m	T e	C m	C e	P m	P e
A	0.5						
	1						
	1.5						
	2						
	2.5						
B	0.5	3				1	
	1						
	1.5						
	2						
	2.5						
C	0.5						
	1						
	1.5						
	2						
	2.5						
D	0.5	15	1	16	1	18	2
	1	2		1		3	
	1.5						
	2						
	2.5						

Lingot : HY 272204

Type d'inclusions		Nombre de champs T m	T e	C m	C e	P m	P e
A	0.5						
	1						
	1.5						
	2						
	2.5						
B	0.5	3		2		1	
	1						
	1.5						
	2						
	2.5						
C	0.5						
	1						
	1.5						
	2						
	2.5						
D	0.5	16	2	15	2	17	2
	1	3		2		1	
	1.5						
	2						
	2.5						

Observations	Signatures et visas
	8/07/96 BUREAU VERITAS J.C. DUPUIS LYON AUBERT & DUVAL Pour le Directeur Général et par délégation Mr D. PICARD

AD/CCD/01

AUBERT & DUVAL 41 rue de Villiers 92202 NEUILLY S/SEINE - FRANCE -	CERTIFICAT DE CONTROLE PAR RESSUAGE LIQUID PENETRANT EXAMINATION	N° A/607/7018-0/BV PAGE : 5/6

Usine : des Ancizes **Le** 28/05/96 **Livraison :** N/REF. 494056 01/01 et 01/02	**DESIGNATION - QUANTITE - DIMENSIONS - POIDS** Designation - Quantity - Dimensions - Weight
Nuance : SC 2104W (Cr Ni 18.12 Mo N) Quality **Etat de livraison :** Hypertrempé Condition Laminage	35 barres dia. 75 ..... 2 338 kg Voir page 2/6
Commande : CS 5008023 du 01/02/96 Order Poste 1 **Coulée :** HY 272203 Cast HY 272204	**Documents applicables :** Applicable document ANC 181/n - Gamme RCE1

CONDITIONS D'EXAMEN / Examination conditions

Stade du contrôle : Final
Inspection stage

Etat de surface Usiné
Surface finish

Etendue du contrôle : Totalité de la surface
Examination coverage

Produits de nettoyage : Acétone
Cleaning agents

Pénétrant **Type :** COLORE **Marque :** BABB CO **Référence :** **N° de lot** VP30 - Lot N°3485
Penetrant Trade mark Reference Lot number

Produits d'élimination de l'excès de pénétrant : Eau
Agents for removal of excess penetrant

Révélateur : Humide **Référence :** **N° de lot** D70 - Lot N°3538
Developer Trade mark Reference Lot number

Température :, 20°C
Temperature

CONDITIONS OPERATOIRES / Inspection process

Nettoyage préalable Precleaning	**Méthode** Method	: DSC selon ANC 185/c
	Mode de séchage Drying method	: Chiffons
	Durée de séchage Drying time	: 5 mn
Application du pénétrant Penetrant application	**Méthode** Method	: Pulvérisation
	Durée de contact Dwell time	: 30 mn
Elimination de l'excès de pénétrant Removal of excess penetrant	**Méthode** Method	: Pulvérisation
	☐ lavage eau pulvérisée-pression : 1,7 Bar ☐ émulsification - durée : ☐ solvant	
Séchage : Drying	**Méthode** Method	: Chiffons
	Température Temperature	:
Application du révélateur Developer application	**Méthode** Method	: Pulvérisation
Examen Examination	**Conditions d'éclairement :** Lighting conditions	> 2150 Lux
	Durée d'appréciation des indications après révélation : Time for estimating indications	10 à 30 mn

9/1/96

BUREAU VERITAS J.C. CHAPUIS LYON

Observations
Remarks

Conforme à
Procédure ANC 181 n - Gamme RCE1
Spécification 483 Révision 2

Signatures et Visas
Signatures and Visas

AUBERT & DUVAL
P. BUENDIA

AUBERT & DUVAL
Pour le Directeur Général
et par délégation
Mr D. PICARD

Niveau 2 - COFREND

AUBERT & DUVAL
41 rue de Villiers
92202 NEUILLY S/SEINE - FRANCE.

CERTIFICAT DE CONTROLE PAR ULTRA-SONS
ULTRASONIC TEST CERTIFICATE

N° A/607/7018-0/BV
PAGE : 6/6

Usine : des Ancizes Le 08/06/96
Livraison : N/REF. 494056 01/01 et 01/02

DESIGNATION - QUANTITE - DIMENSIONS - POIDS
Designation - Quantity - Dimensions - Weight

Nuance : SC 2104W (Cr Ni 18.12 Mo N)
Quality
Etat de livraison : Hypertrempé
Condition Laminage

35 barres dia. 75 ..... 2 338 kg

Voir page 2/6

Commande : CS 5008023 du 01/02/96
Order Poste 1

Coulée : HY 272203
Cast HY 272204

Documents applicables :
Applicable document
Procédure ANC 1521/C - Code U 30A

CONDITIONS D'EXAMEN / Examination conditions

Stade du contrôle : Après traitement
Inspection stage
Etendue du contrôle : 100% du volume
Examination coverage
Etat de surface : Usiné
Surface finish
Produit de couplage : Eau
Couplant

APPAREILLAGE UTILISE / Ultrasonic equipment

Appareil / Instrument
Marque : KRAUTKRAMER.
Trade mark
Type : USIP 12
Type
Référence : 29372.1061
Reference

Traducteur / Search unit

Onde* Wave	Marque Trade mark	Réf. / Type Ref. / Type	Angle (°) Angle	Fréquence MHz Frequency	Surface d'émission Input pulse area
L	A.D.	P5/K99	0°	5	78,5 mm2

Réglage de l'appareil / Instrument Adjustment

Sens de sondage :
Orientation

Onde* Wave Type	Onde* Wave Sens	Traducteur Type / Réf. Search unit Type /Ref.	Etalon Standard	Etalonnage Calibration	Puissance Energy	Amplification Magnification (dB)
L	R	P5/K99	N7	Etalon TFP Ø 1,2 à 80 mm : 80% HE (Avec DAC) Surveillance de l'écho de fond	-	48

* L : Longitudinale / Longitudinal
T : Transversale / Shear
A : Axial / Axial
C : Circonférentiel / Circumferential
O : Oblique / Angled
R : Radial / Radial

Observations
Remarks

Conforme à
Procédure ANC 1521 c - Code U 30 A
Spécification 483 Révision 2

BUREAU J.C. CHAPUIS 6/7/96

Signatures et Visas
Signatures and Visas

AUBERT & DUVAL
P. BUENDIA
Niveau 2 - COFREND

AUBERT & DUVAL
Pour le Directeur Général
et par délégation
Mr D. PICARD

R : Remise de document / Certificat

VERITAS

PLAN DE CONTROLE ET D'INSPECTION
CONTROL AND INSPECTION PLAN

483-0

RONDS DECAPES DE PRECISION H12/H15

Phases de fabrication - Manufacturing schedule

ESSAIS - TESTS	ID	Prelevement	CP Parag. 3.2. specif.	CP N	MP	PP H.B.	PP Structure	PP Inclusions *	PP Ferrite	PP Permeabilité	PP Permutation (spectr.)	Marquage	UT	PT Ressuage	Dim	V	Dossier
Ronds forgés hypertrempés	H	H	H	H	H	H	H	H		H	H	X		X	X		
	W2	H	C1	C1	W1	W2	W2	H		C1	C1	X		X	X		

Essais effectués
Modes d'intervention (Voir au dos)
Performed tests
Intervention methods (Turn please)

CQ Contrôle Qualité Fournisseur — *Supplier Quality Control*
BV Inspection BUREAU VERITAS — *BUREAU VERITAS Inspection*
CL Inspection client — *Customer Inspection*

NOTA
NOTE
* toujours sur le coté tête, milieu, pied
L.S.

Lieu d'exécution :
Manufacturing plant :

Client
Contrat no. 599.205 N/Fi
CERN/BV

BV
AT 329.231/B CN 132

Page 2 / 2

1651

RIAL VACUUM
ULTRA HIGH VACUUM AND CRYOGENICS

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Fax +39 0521 949300

sales@rialvacuum.com
www.rialvacuum.com

Tabella corrispondenza codici-grezzi

DISEGNO	MATERIALE	FORNITORE	CERTIFICATO
LHCMB__S0024	316LN	EDELSTAHL	191531/7072741
LHCMB__S0025	316LN	EDELSTAHL	191531/7072741
LHCMB__S0031	304L	FORONI	1480/2000
LHCMB__S0032	304L	FORONI	1480/2000
LHCMB__S0033	304L	FORONI	1480/2000
LHCMB__S0039	304L	SCAM	82350
LHCMB__S0042	304L	FORONI	1480/2000
LHCMB__S0043	304L	FORONI	1480/2000
LHCMB__S0121 pos 1	316L	EDELSTAHL	191531/7072741
LHCMB__S0121 pos 2	316L	EDELSTAHL	191531/7072741
LHCMB__S0123	304L	EDELSTAHL	403975/7143316
LHCMB__S0127	304L	EDELSTAHL	403975/7143316
LHCMB__S0130	316L	EDELSTAHL	191531/7072741
LHCMB__S0179 Assemblato			
pos 1 tubo	304L	MARCEGAGLIA	25348/22
pos 2 fondo	304L	OUTOKUMPU	884318/002
pos 3 flangia	304L	COGNE	2001019411
LHCMB__S0180 Assemblato			
pos 1 tubo	304L	MARCEGAGLIA	25348/22
pos 2 fondo	304L	OUTOKUMPU	884318/002
pos 3 flangia	304L	COGNE	2001019411
LHCMB__S0244	304L	COGNE	2001019411
LHCMB__S0245 Complessivo			
LHCMB__S0246	304L	EDELSTAHL	403975/7143316
LHCMB__S0247	304L	EDELSTAHL	403975/7143316
LHCMB__S0248	304L	COGNE	2001019411
tubo 70x2	316L	SIDERINOX	63528
tubo 48,3x2	304L	MARCEGAGLIA	22234/22
LHCMB__S0094 Complessivo			
LHCMB__S0113 Sub-complessivo			
LHCMB__S0214 Sub-complessivo			
POS 1 flangia (S0028/8/B5)+POS 2 colletto	304L	COGNE	2001019411
POS 3 tubo	304L	AVESTA	904689/002/A
LHCMB__S0030 pos 1	304L	COGNE	2001019411
LHCMB__S0030 pos 2	304L	EDELSTAHL	403975/7143316
LHCMB__S0030 pos 3	304L	EDELSTAHL	406671/7144220
LHCMB__S0030 pos 4	304L	EDELSTAHL	406671/7144220
LHCMB__S0029	304L	SCAM	82350
LHCMB__S0044	304L	FORONI	1480/2000
LHCMB__S0045	304L	FORONI	1480/2000
LHCDCCMA0040 Assemblato			
tubo flex / treccia	316L / 304L	ARINOX / TIM	39415 / 218
attacco tubo flex	316L	ROLDAN	2000/94.942
LHCMB__S0131	316L	VILLARES	O14020

RIAL VACUUM
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www.rialvacuum.com

Tabella corrispondenza codici-grezzi

DISEGNO	MATERIALE	FORNITORE	CERTIFICATO
LHCMB__S0100 Assemblato			
tubo	304L	AVESTA	904689/002/A
colletto	304L	SANDVIK	A/02-946620
LHCMB__S0101	304L	SIDERINOX	63528
LHCMB__S0183 Complessivo			
LHCMB__S0184 Sub-complessivo			
pos 1 flangia	304L	COGNE	2001019411
pos 2 tubo	304L	MARCEGAGLIA	25348/22
pos 3 fondo	304L	OUTOKUMPU	884318/002
pos 4 tubo	304L	ALCE	99/0294
pos 5 CF40	304L	ROLDAN	2000/94.942
LHCMB__S0236	304L\Cu	METALPARMA	2903

ALCE

ALCE S.r.l.
VIA PER CASTELLETTO, 15/17
20080 ALBAIRATE (MI) ITALY
TEL. (02) 9406739/94920079
FAX (02) 9406389
TEL./FAX LAB. PROD. (02) 9406722

CERTIFICATO DI COLLAUDO
TEST CERTIFICATE
ABNAHMEPRÜFZEUGNIS
CERTIFICAT D'EMPREUVES
DIN 50049 - 3 . 1B
EN 10204 - 3 . 1B

N. DI CERTIFICATO / *Certificate N.* 99/0294

PAG. N. / *Sheet N.* 1 DI / *of*

DATA / *Date* 07/06/99

CLIENTE / *Customer*
RIAL VACUUM -S.P.A.-
VIA TITO ED ETTORE MANZINI 7a
43040 LOC. SCARZARA PARMA

NS. COMMESSA N. / *Our job n.* 9V/000319 — DATA / *Date* 12/05/99

BOLLA DI CONSEGNA / *Delivery bill* B9000417 — Del 08.06.99

ORDINE / *Order n.* 90331 — DATA / *Date* 11/05/99

NORMA DI ESECUZIONE / *Test specification / Abnahmenorme / Specification* ASTM A312-95a/A530-98

POS. N. *Item N.*	ACCIAIO *Steel / Stahl Acier*	DESCRIZIONE *Description*	N. TUBI	Mt	Kg	COLATA *Heat*	N. DI PROVA *Test N.*
01	TP 316L ASTM	42.2X1.6X5/7000	16	108	175	048712	70

PROVA *Test N.*	DIM. PROVETTA *Dim. of specimen* LUNG. LARGH. Ø i SPESSORE *Thickness Ø* mm	PESO LARGH. Ø e *Width Ø e* mm	SEZIONE *Section*	PRELIEVO *Samping* Pos. Prov. *Pos. Specim.*	TEMP. PROVA *Test temperature* C	Lim. di snervamento *Yeld Point Proof stress* Reh Rp 0,2 N / mm 2	Rp 1,0 N / mm 2	Carico di rottura *Tensile strenght* Rm N / mm 2	Allungamento *Elongation* A 5 LO = %	Piega *Bend test*	DUREZZA *hardness hârtversuch dureté* tipo - *type* - *typ*	PROVA IDRAULICA *hydrostatic test epreuve hydraulique* Bar MPa	*EDDY CURRENT*
RICHIESTO		MIN			20	170		485	35		HR 15T		
REQUIRED		MAX									90		
70	1.63	12.50	20.4	1	20	322	340	629	50		84/84.2	17	

ALLARGAMENTO / *FLARING*

SCHIACCIAMENTO / *FLATTENING* SATISFACTORY

NO Material:SEAMLESS TUBE

RICHIESTO *(Required)*		C %	Mn %	Cr %	Ni %	Mo %	Si %	S %	P %	Ti %	
	MIN	0	0	16	10	2	0	0	0	0	0
POS.	COLATA / *HEAT* MAX	.035	2	18	15	3	.75	.03	.04	0	0
01	048712	.019	1.79	17.49	11.41	2.15	.26	.009	.025	0	0
01	check 048712	.022	1.77	17.53	11.4	2.1	.33	.007	.025	0	0

TRATTAMENTO TERMICO / *heat treatment*

BRIGHT ANNEALED AT 1060°C

CONTROLLO VISIVO E DIMENSIONALE / *visual and dimensional control*

SATISFACTORY — OK / OB [X]

Il materiale è conforme alle norme richieste nell'ordine.
The material as been furnished in accordance with the requirements.
Le material a ete trouve conforme aux exigences.
Die gestellten Anforderungen sind erfuellt.

ENTE COLLAUDATORE / *Inspector*

ALCE S.r.l.
QUALITY CONTROL DEPT.

ALCE S.r.l.
Trafilerie - Tubi Acciaio inox
RESP. GARANZIA QUALITÀ
Carrara Giovanni

ALCE QUALITY SYSTEM IS APPROVED IN ACCORDING TO ISO 9002 - EN 29002

metal parma S.a.S.
di CAVALLI ALBERTO & C.
Via R. Tagliani, 32/A - 43026 PARMA
Partita IVA 01658170343

SPETT.LE
. 'AL VACUUM SPA
VIA TITO ED ETTORE MANZINI, 7/A
43040 – LOC. SCARZARA-PARMA

DICHIARAZIONE DI CONFORMITA'

DATA	DOCUMENTO N.	RIF. VS. ORDINE	CODICE CLIENTE	
23/05/2002	2903 – 23/05/2002	02/00508 DEL 23/05/2002	00000912	
MATERIALE	RAME ETP TUBO TONDO COTTO 12X10			
COLATA				
LEGA	CU ETP – UNI 5649-65			

ANALISI CHIMICA

COMPOSIZIONE CHIMICA	SI	FE	CU	MN	MG	ZN	TI	CR	NI	ZR	PB	BI	AL
			99,9 99,99										
RISCONTRATO													
COMPOSIZIONE CHIMICA	SN	SB	CO	S	P	C	BE	TA	NB			IMPURITA'	
RISCONTRATO													

CARATTERISTICHE MECCANICHE

	CARICO DI ROTTURA KG / MM	CARICO DI SNERVAMENTO KG / MM	ALLUNGAMENTO		DUREZZA BRINNELL HB
			A5	A2'' Or4D	
PRESCRITTO	300 370		5		75 90
RISCONTRATO					

metal parma S.a.S.
di CAVALLI ALBERTO & C.

SANDVIK

CERTIFICATE

No. A/02-946620 Rev 00
Date 2002-03-06 Page 1/2

INSPECTION CERTIFICATE acc to
EN 10 204 3.1.B

INSPECTION STAMP
QA-TUBE

Customer References

FAX 730

Customer order 2001-10-16

250-00991 STEELCENTE

Sandvik References

Order No.	Subs No.	ABSS Dispatch note
145534	26311	34336/54
ABSS No.	**C.Code**	
300-51576	37	

Material description
STAINLESS HOT FINISHED HOLLOW BAR

Steel making process
Electric furnace

Steel/material Designations

Sandvik	AISI
SANMAC 304L	TP304L

Technical requirements
Analysis and mechanical tests
acc to ASTM A-511-96

EXTENT OF DELIVERY

It	Product designation	Heat	Lot	Pieces	Kg
51	THB-SANMAC304L-112-90 112.00 X 11.00	455112	24217	3	531.0
			Total	3	531.0

TEST RESULTS

Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	N
455112	0.011	0.39	1.23	0.029	0.025	18.38	9.27	0.068

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	N
455112	0.012	0.39	1.24	0.030	0.022	18.38	9.31	0.068

Tensile test at room temperature

	Yield strength N/mm2	Tensile strength N/mm2	Elongation %
Lot	Rp0.2	Rm	2"
24217	259	602	51

Following controls/tests have been satisfactorily performed:
- Material Identification

Quality assurance - Carl-Filip Lindahl/ QA-manager Tube & Pipe
MTC Service / Certificates

AvestaPolarit STAINLESS

ABNAHMEPRUEFZEUGNIS 3.1.B
DIN EN 10204 3.1B AD-W2

904689/002/A 1(01)
Date Datum Date
23.10.01

Address, Empfänger, Lieu de livraison	BESTELLER
VALINOX ITALIA S.R.L. VIA DEI FRASSINI, 63 36100 VICENZA VI ITALY	VALINOX ITALIA S.R.L. VIA DEI FRASSINI, 63 36100 VICENZA VI ITALY

Requirements, Anforderungen, Exigences: ASTM A240-00 ASME SA-240 2001 SEC 2 TRB 100 / AD-W2 DIN 17441 02.97

Our Order No., Unser Auftrag Nr., Notre commande n°: 90412

Your order, Ihre Bestellung, Votre commande: ORDER 002000240

Product, Erzeugnis, Produit: BAND , NICHTROSTEND

Mark of Manufacturer, Zeichen des Lieferwerkes, Signe de producteur

Process, Erschmelzungsart, Mode de fusion: AOD

Inspector's stamp, Zeichen d. Sachverst., Poinçon de l'expert

Grade, Werkstoff, Nuance: TYPE 304L 1.4301

Tolerances, Toleranzen, Tolérances: DIN 59382, EN 10259: 1997

Marking, Kennzeichnung, Marquage: 304L 2B

Marks, Versandzeichen, Marques: VALINOX ITALIA

Line / Reihe / Ligne	Item / Position / Poste	Charge/test No. / Schmelze-Probe Nr. / Coulée n°	Size, Abmessungen, Dimensions	Quantity / Stückzahl / Nombre	Weight, Gewicht, Poids	Finish / Ausführung / Fini
1	8	01733 5	3,0 X 1500 MM		9130 KG	2B

Chemical composition, Chemische Zusammensetzung, Composition chimique

Charge no. / Schmelze Nr. / Coulée n°	C %	Si %	Mn %	P %	S %	Cr %	Ni %	N %
01733	0,022	0.47	1,79	0,023	0,001	18,2	8,2	0,048

Mechanical properties, Mechanische Eigenschaften, Caractéristiques mécaniques

Line / Reihe / Ligne	Location / Ort / Lieu	Rp0.2 N/mm²	Rp1.0 N/mm²	Rm N/mm²	A5 %	A50 %	%	Hardness / Härte / Dureté HB30
1	E	312	347	626	56	52		174
	A	310	347	618	57	54		170

UEBERPRUEFT NACH AD-W0/TRD 100 DURCH TUEV NORD E.V. MIT VERZICHT AUF GEGENZEICHNUNG UND ZUSTIMMUNG ZUR AUS-STELLUNG VON UNTER-SCHRIFTSLOSEN ABNAHME-PRUEFZEUGNISSEN 3.1B (AZ.: 121W163320)

Identity test, Verwechslungsprüfung, Contrôle d'identification: O.B.
Size, Abmessungen, Dimensions: O.B.
Surface, Oberfläche, Surface: O.B.
Test of intergran. corros, Prüfung auf interkrist. Korros, Test d'essai corros. intercrist.
ASTM A262 PRACTICE E GENUEGEND

A = Beginning / Anfang / Début
E = End / Ende / Fin

VALINOX ITALIA s.r.l.
COPIA CONFORME ALL'ORIGINALE
Articolo: 1500x4000
Q.tà cons.:
Rif.ti: HS Belle 31551

X TUBISTEEL

We certify that the above mentioned products comply with the terms of the order contract.
Wir bestätigen, dass die Lieferung den Vereinbarungen der Bestellannahme entspricht.
Nous certifions que les produits énumérés ci-dessus sont conformes aux prescriptions de la commande.

This test certificate is made by controlled ADP-system and is valid without signature.
Dieses Zeugnis wurde von einem überprüften Datenverarbeitungssystem erstellt und ist ohne Unterschrift gültig.
Ce certificat a été établi par un système informatique contrôlé et est valable sans signature.

AvestaPolarit Stainless Oy

Authorised inspector, Werkssachverständiger, Inspecteur autorisé: TIMO KAUPPILA

FIN-95490 Tornio, Finland
Tel. +358 16 4521, Fax +358 16 452160
www.avestapolarit.com
Domicile: Tornio, Finland. Trade register number: 500.630

MARCEGAGLIA S.p.A.

MARCEGAGLIA - LOMBARDA TUBI - PROFILNASTRO - BROLLO - NUOVA FORSIDERA - RESCO - MORTEO NORD - MARCEGAGLIA IMPIANTI

...de legale e amministrativa: via Bresciani, 16 - 46040 Gazoldo degli Ippoliti - Mantova - Italy
...l. +39 . 0376 685 1 Fax +39 . 0376 685 600 www.gruppomarcegaglia.com
...tabilimento di Forlì: via E. Mattei, 20 - 47034 Forlimpopoli - Forlì - Italia
Tel. +39 . 0543 470 111 Fax +39 . 0543 470 105

CERTIFICATO DI COLLAUDO
Test certificate
Abnahmeprüfzeugnis
Certificat de contrôle
Nr.

IN ACCORDO CON
EN 10088-2 3.1B
EN 10204 3.1B

22234/22

Cliente / Customer	Ordine del cliente / Customer's order / Bestellung / Commande du client	Ordine Marcegaglia S.p.A. / Mill order / Unsere Auftragsbestätigung / Notre confirmation de commande	Data / Date / Datum / Date
LEINOX S.R.L.	3521	724355	22/07/02

Tipo di acciaio / Steel type / Werkstoff / Nuance acier	Norma di collaudo / Test specification / Prüfungsnormen / Spécification	Tolleranze / Tolerances / Toleranzen / Tolérances	Trattamento termico / Heat treatment / Wärmebehandlung / Traitement thermique
1.4404	DIN 17457 PK1	EN ISO 1127 D3/T3	Aria / Air / Luft

Tubi saldati longitudinalmente / Welded tubes / Längsnahtgeschweisste Rohre / Tubes soudé

Composizione chimica / Chemical Analysis / Chemische Analyse / Composition Chimique

Dimensioni / Dimensions / Abmessungen / Dimensions mm	Quantità / Quantity / Menge / Quantité m	Peso / Weight / Gewicht / Poids kg.	Pezzi N. / Pieces N. / Stückzahl N. / Pièces N.	Stato di fornitura / Condition supply / Lieferzustand / Etat de commande	Fabbricante colla / Steelmaker coils / Stahlhersteller / Producteur bobine	Colata N. / Heat N. / Schmelze N. / Coulée N.	%C	%Mn	%Si	%P	%S	%Cr	%Ni	%Mo	%Ti	%Co
												16.50	10.00	2.00		
							0.030	2.00	1.00	0.045	0.030	18.50	14.00	2.50		
40.3X2.0			61			557563	0.020	1.25	0.34	0.022	0.012	16.89	11.04	2.18		

Collaudo N. / Test N. / Probe Nr. / Essais N.	Snervamento / Yield str. / Grenze / Limite élastique 0,2% N/mm²	Snervamento / Yield str. / Dehngrenze / Limite élastique 1% N/mm²	Rottura / Tensile strength / Zugfestigkeit / Résistance rupture N/mm²	Allungamento / Elongation / Dehnung / Allongement A5 %	Durezza / Hardness / Härte / Dureté Tipo - Type - Typ HRB	Svasatura / Flaring test / Aufweitversuch / Evasement	Schiacciamento / Flattening test / Ringfaltversuch / Aplatissement	Piega rovescio / Reverse bend test / Rückbiegeversuch / Retournement	Mandrinatura anello / Ring expanding test / Aufweitversuch / Mandrin. ann.	Prova idraulica / Hydrostatic test / Wasserdruckprüfung / Epreuve hydraulique	C.N.D. / Eddy current test / Zerstörungsfreie Prüfung / Contrôle non destructif	Antimiscuglio / Anti mixing test / Verwechslungsprüfung / Contrôle d'identification	Prova di bordatura / Flange test / Bördelversuch / Rabattement de collerette
Valori richiesti / Required values / Anforderungen / Caractéristiques demandées	>= 190	>= 225	490-760	>= 35									
	291	320	596	49					OK		OK	OK	

Prova di trazione / Tensile test / Zugversuch / Essai de traction: secondo / according to / gemäß / en accord avec

Prova di corrosione intercristallina secondo / Intergranular corrosion test according to / Prüfung auf Interkristalline Korrosion gemäß / Essai de corrosion intergranulaire en accord avec

Controllo visivo e dimensionale / Visual and dimensional control / Sicht- und Abmessungskontrolle / Contrôle visuel et dimensionnel: OK

OMOLOGAZIONE AQUAP
DA N° 2094 A N° 2101 DA N° 6010/E A N° 6011/6
DA N° 7443-00-TU A N°7440-00-TU
DA N° 7450-00-TU A N°7455-06-TU

Marcatura / Marking / Kennzeichnung / Marquage

13	5	6	7	8	10	12	13	14	2

COPIA CONFORME ALL'ORIGINALE LEINOX

Legenda
1 Sigla produttore / Manufacturer's mark / Zeichen des Lieferwerks / Timbre du producteur
2 Norma di collaudo / Test specification / Prüfungsnormen / Spécification
3 Tipo acciaio 1 / Grade 1 / Werkstoff 1 / Nuance 1
4 Tipo acciaio 2 / Grade 2 / Werkstoff 2 / Nuance 2
5 Colata / Heat / Schmelze / Coulée
6 Saldato / Welded / Geschweisst / Soudé
7 Stato di fornitura / Supply condition / Lieferzustand / Etat de commande
8 Laminato - Non laminato / Inside bead removed - not removed / Innennaht geglättet - nicht geglättet / Laminé - Pas Laminé
9 Tubo Crudo - Ricotto / Not annealed - Annealed Tube / Ungeglühtes - Geglühtes Rohr / Pas Recuit - Recuit
10 Tipo di classe / Class type / Prüfklasse / Serie
11 Tubo N° / Tube N. / Rohr Nr. / Tube N.
12 Prevede il certificato / With test mill / mit Werksabnahmezeugnis / Demande le certificat
13 Provato Eddy current / Eddy Current Tested / Wirbelstromgeprüft / Eprouvé courant de foucault
14 Diametro e spessore in mm / Diameter and thickness mm / Aussendurchmesser und Wanddicke mm / Diamètre et épaisseur en mm
15 Diametro e spessore schedula / Diameter and thickness schedule / Aussendurchmesser und Wandstärke schedule / Diamètre et épaisseur en schedule

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Osservazioni

CHEMICAL COMPOSITION REFERS TO THE RAW MATERIAL USED

QUALITY
GRUPPO MARCEGAGLIA

Avviso spedizione / Shipping notice / Versandanzeige / Avis d'expédition

Allegati Certificato CND / Enclosed: Certificate NDT / Anlagen ZfP Zeugnis / Annexés: Certificat CND

Noi certifichiamo che il prodotto fornito è conforme ai requisiti dell'ordinazione.
We certify that material supplied complies with the requirements agreed on order.
Es wird bestätigt, dass die Lieferung den Vereinbarungen bei der Bestellannahme entspricht.
Nous certifions que le produit fourni est conforme à la qualité de la commande.

MARCEGAGLIA S.p.A.

.Ott. 2002 15:40 TUBISTEEL SRL

MARCEGAGLIA S.p.A.

MARCEGAGLIA • LOMBARDA TUBI • PROFILNASTRO • BRELLO • NUOVA FORZIERA • RESCO • LIGURE NORD • MARSEGLIA IMPIANTI

Sede legale e amministrativa: via Bresciani, 16 • 46040 Gazoldo degli Ippoliti • Mantova - Italy
Tel. +39 . 0376 685 1 Fax +39 . 0376 685 600 www.gruppomarcegaglia.com
Stabilimento di Forlì: via E. Mattei, 20 - 47034 Forlimpopoli - Forlì - Italia
Tel. +39 . 0543 470 111 Fax +39 . 0543 470 105

CERTIFICATO DI COLLAUDO

Test certificate
Abnahmeprüfzeugnis
Certificat de contrôle
Nr. 25348/22

IN ACCORDO CON
EN 10088-2 3.1
EN 10204 3.1

Cliente / Customer / Kunde / Client	Ordine del cliente / Customer's order / Bestellung / Commande du client	Ordine Marcegaglia S.p.A. / Mill order / Unsere Auftragsbestätigung / Notre confirmation de commande	Data / Date / Datum / Date
LEINOX S.R.L.	4684	733905	12/09/0

Tipo di acciaio / Steel type / Werkstoff / Nuance acier	Norma di collaudo / Test specification / Prüfungsnormen / Spécification	Tolleranze / Tolerances / Toleranzen / Tolérances	Trattamento termico / Heat treatment / Wärmebehandlung / Traitement thermique
1.4404	DIN 17457 PK1	EN ISO 1127 D3/T3	

Tubi saldati longitudinalmente / Welded tubes / Längsnahtgeschweisste Rohre / Tubes soudé

Composizione chimica / Chemical Analysis / Chemische Analyse / Composition Chimique

Pos. N.	Dimensioni / Dimensions / Abmessungen / Dimensions mm	Quantità / Quantity / Menge / Quantité m	Peso / Weight / Gewicht / Poids kg.	Pezzi N. / Pieces N. / Stückzahl N. / Pièces N.	Stato di fornitura / Condition supply / Lieferzustand / Etat de commande	Fabbricante coils / Steel manufacturer / Coilhersteller / Producteur bobine	Colata N. / Heat N. / Schmelze N. / Coulée N.	%C	%Mn	%Si	%P	%S	%Cr	%Ni	%Mo	%Ti	%Co
													16.50	10.00	2.00		
								0.030	2.00	1.00	0.045	0.030	18.50	14.00	2.50		
1	84X2.0			19			558106	0.015	1.27	0.37	0.026	0.010	16.52	11.07	2.23		

Collaudo N. / Test N. / Probe Nr. / Essai N.	Snervamento / Yield str. / Grenze / Limite elastique 0,2% N/mm²	Snervamento / Yield str. / Dehngrenze / Limite elastique 1% N/mm²	Rottura / Tensile strength / Zugfestigkeit / Résistance rupture N/mm²	Allungamento / Elongation / Dehnung / Allongement %Lo= 500	Durezza / Hardness / Härte / Dureté Tipo - Type - Typ HRB	Svasatura / Flaring test / Ringaufdornversuch / Evasement	Schiacciamento / Flattening test / Ringfaltversuch / Aplatissement	Piega rovescio / Reverse bend test / Rückfaltversuch / Retournement	Mandrinatura anello / Ring expanding test / Aufweitversuch / Mandrin. ann.	Prova idraulica / Hydrostatic test / Wasserdruckprüfung / Epreuve hidraulique	C.N.D. / Eddy current test / Wirbelstromprüfung / Controle non destructif	Antinvecchiamento / Anti ageing test / Alterungsprüfung / Controle vieillissement	Prova di bordatura / Flange test / Bördelprüfung / Rabattement du bord
Valori richiesti / Required values / Anforderungen / Caractéristiques demandées	>= 190	>= 225	490-760	>= 35									
Pos. N. 1	286	316	593	50					OK		OK	OK	

Prova di trazione / Tensile test / Zugversuch / Essai de traction secondo ☐ / according to ☐ / gemäß ☐ / en accord avec ☐

Prova di corrosione intercristallina secondo / Intergranular corrosion test according to / Prüfung auf Interkristalline Korrosion gemäß / Essai de corrosion intergranulaire en accord avec ☐

Controllo visivo e dimensionale / Visual and dimensional control / Sicht-und Abmessungskontrolle / Contrôle visuel et dimensionel: OK

OMOLOGAZIONE ADUAF
DA N° 2064 A N° 2101 DA N° 6010/8 A N° 6011/8
DA N° 7442-08-TU A N°7443-08-TU
DA N° 7450-08-TU A N°7453-08-TU

Marcatura / Marking / Kennzeichnung / Marquage

1	3	5	6	7	8 10	12	13	14	2

CONFORME ALL'ORIGINALE
LEINOX

Legenda

1. Sigla produttore / Manufacturer's trade mark / Zeichen des Lieferwerks / Tampon du producteur
2. Norma di collaudo / Test specification / Prüfungsnormen / Spécification
3. Tipo acciaio 1 / Grade 1 / Werkstoff 1 / Nuance 1
4. Tipo acciaio 2 / Grade 2 / Werkstoff 2 / Nuance 2
5. Colata / Heat / Schmelze / Coulée
6. Saldato / Welded / Geschweisst / Soudé
7. Stato di fornitura / Supply condition / Lieferzustand / Etat de commande
8. Laminato - Non laminato / Incise bead removed - not removed / Innennaht geglättet - nicht geglättet / Laminé - Pas Laminé
9. Tubo Crudo - Ricotto / Not annealed - Annealed Tube / Ungeglühtes - Geglühtes Rohr / Pas Recuit - Recuit
10. Tipo di classe / Class type / Prüfklasse / Serie
11. Tubo N° / Tube N. / Rohr Nr. / Tube N.
12. Prevede il certificato / With test mill / Mit Werkszeugnis / Demande le certificat
13. Provato Eddy current / Eddy Current Tested / Wirbelstromgeprüft / Epreuve courant de foucault
14. Diametro e spessore in mm / Diameter and thickness mm / Aussendurchmesser und Wanddicke mm / Diamèter et epaisseur en mm
15. Diametro e spessore schedula / Diameter and thickness schedule / Aussendurchmesser und Wanddicke schedule / Diamèter et epaisseur en schedule

RINA · QUACER · ISO 9002 · CISQ

Osservazioni

THE CHEMICAL COMPOSITION REFERS TO THE RAW MATERIAL USED

Avviso spedizione / Shipping notice / Versandanzeige / Avis d'expédition: 254659

Allegati Certificato CND / Enclosed: Certificate NDT / Anlagen ZfP Zeugnis / Annexés Certificat CND

Noi certifichiamo che il prodotto fornito è conforme ai requisiti dell'ordinazione.
We certify that material supplied complies with the requirements agreed on order.
Es wird bestätigt, dass die Lieferung den Vereinbarungen bei der Bestellannahme entspricht.
Nous certifions que le produit fourni est conforme à la qualité de la commande.

MARCEGAGLIA S.p.A.

Via Gramsci, 41/A
16037 Sestri Levante (Ge) Italia
Tel. +39 0185 3661
Fax +39 0185 366320
E-mail: arinox@tin.it

Cap. Soc. 32.500.000.000 I.V.
Reg. Imp. di Chiavari n. 6437
R.E.A. di Genova n. 316714
Cod. Mecc. GE 006278
Cod. Fisc. 03086810102
Part. IVA IT 00203820998

Arinox s.r.l.

394_5-

ABNAHMEPRÜFZEUGNIS - CERTIFICATO DI COLLAUDO - TEST CERTIFICATE

(NACH DIN 50049 / 3. 1B - EN 10204 / 3. 1B) Mod. 10.4 REV. 1
(SECONDO DIN 50049 / 3. 1B - EN 10204 / 3. 1B)
(IN ACCORDANCE WITH DIN 50049 / 3. 1B - EN 10204 / 3. 1B)

PRÜF Nr.:
N. COLLAUDO:
TEST Nr.:

BESTELLER: Tubiflex SpA
CLIENTE:
CUSTOMER: Via Valeggio 41 Torino TO

FINITURA: BA

PRÜFGENSTAND: BÄNDER AUS NICHTROSTENDEM STAHL
PRODOTTO: ROTOLI DI ACCIAIO INOSSIDABILE
PRODUCT: COILS

ALTRE SPECIFICHE: ASTM A 240

ANFORDERUNGEN: EN 10088/2 - DIN 17441
SPECIFICA: SECONDO EN 10088/2 - DIN 17441
SPECIFICATION: IN ACCORDANCE WITH EN 10088/2 - DIN 17441

ERSCHMELZUNGSART:
PROCESSO DI FUSIONE: E
MELTING PROCESS:

WERKSTOFF: 1.4404
UNIFICAZ. TEDESCA:
GERMAN UNIFICATION:

MARKENBEZEICHNUNG:
TIPO D'ACCIAIO S31603
STEEL TYPE:

BESTELL Nr.:
ORD. CLIENTE N.: N. A0.938 DEL 5.4.02
CUST. ORD. Nr.:

UNSERE BESTÄTIGUNG:
Ns. CONFERMA ORDINE N.: 50-25819 Pos. 0001
OUR CONFIRMATION Nr.:

ANALYSE / ANALISI / ANALYSIS

BAND Nr. / N. ROTOLO / COIL Nr.	SCHMELZE Nr. / N. COLATA / HEAT Nr.	% C	% Mn	% Si	% P	% S	% Cr	% Ni	% Mo	% Ti	% Nb	ZUSÄTZLICHE ELEMENTE % / ELEMENTI AGGIUNTIVI / ADJOINT ELEMENTS	
												N	
148119	821339	0,020	1,130	0,550	0,027	0,001	17,400	11,100	2,050			0,048	

DIE OBENGENANNTE SCHMELZE IST BESTÄNDING GEGEN INTERKRISTALLINE KORROSION GEMÄß DIN 50914
IL MATERIALE È RESISTENTE ALLA CORROSIONE INTERGRANULARE SECONDO DIN 50914
THE MATERIAL IS RESISTENT TO INTERCRYSTALLINE CORROSION IN ACCORDANCE WITH DIN 50914

WÄRMEBEHANDLUNG - LÖSUNGSGLÜHEN UND ABSCHRECKEN 1110 (°C)/H_2/H_2O
TRATT. TERMICO - RICOTTURA DI SOLUBILIZZ.
HEAT TREATMENT - SOLUTION ANNEALING

EINE PRÜFUNG AUF WERKSTOFFVERWECHSLUNG WURDE DURCHGEFÜHRT: OHNE BEANSTANDUNG
ESITO DELL'ESAME DI CORRISPONDENZA TRA I TIPI DI ACCIAIO: FAVOREVOLE
THE CORRESPONDENCE BETWEEN THE STEEL TYPES IS ASSURED

ERGEBNIS DER PRÜFUNGEN / RISULTATI DELLE PROVE / TEST RESULTS

ZURGVERSUCH: (S. TAFEL) NACH DIN 50145-50114/50125 / PROVA DI TRAZIONE / TENSILE TEST — PROBENLAGE QUER / PROVETTA TRASVERSALE / TRANSVERSAL SPECIMEN

BAND Nr. / N. ROTOLO / COIL Nr.	STÜCKZAHL / PEZZI / PIECES	GEGENSTAND (MM) / PRODOTTO (mm) / PRODUCT (mm)	(*)	DEHNGRENZE SNERVAMENTO YIELD STR. Rp 0,2 % N/mm²	DEHNGRENZE SNERVAMENTO YIELD STR. Rp 1 % N/mm²	ZUGFESTIGKEIT ROTTURA ULT. STRENGHT Rm N/mm²	DEHNUNG ALLUNG.TO ELONG. % A 80 mm (#)	GEWICHT PESO WEIGHT Kg.	HÄRTE DUREZZA HARDNESS	FALTVERSUCH PROVA DI PIEGA BEND TEST
ANFORDERUNGEN / CARATTERISTICHE RICHIESTE / REQUIRED CHARACTERISTICS				⩾	⩾		⩾			
148119	2	0,250 163,00	TR	304	337	623	51	1170	HV 159	OK

(*) T: TESTA/START/ANFANG; C: CODA/END/ENDE — TR = TRASVERSALE/TRANSVERSAL/QUER LO = LONGITUDINALE/LONGITUDINAL/LANGS
(#) A 50 mm. PER SPESSORE < 0,20 mm. O PRODOTTO INCRUDITO – (#) A 50 mm. FOR THICKNESS < 0,20 mm. OR HARD FINISH – (#) A 50 mm. FÜR DICKE < 0,20 mm. ODER HARTGEWALZTE AUSFÜHRUNG

BESICHTIGUNG UND AUSMESSUNG. OHNE BEANSTANDUNG
RISULTATI DELL'ISPEZIONE E CONTROLLO DIMENSIONALI: FAVOREVOLI
INSPECTION AND DIMENSIONAL CONTROL RESULTS ARE SATISFACTORY.

ERGEBNIS DER PRÜFUNG: DIE GESTELLTEN ANFORDERUNGEN SIND ERFÜLLT
ESITO DEL COLLAUDO: LE RICHIESTE SONO SODDISFATTE
TEST RESULT: THE MATERIAL IS SATISFACTORY AND IN ACCORDANCE WITH SPECIFICATION REQUIRED

COPIA CONFORME
ALL'ORIGINALE
Tubiflex
ASS. QUALITA'

07/05/02
Sestri Levante,

Arvedi

Arinox s.r.l.
Sestri Levante (GE) Italia
Der Werkssachverständige
MILLS INSPECTOR
L'ISPETTORE AUTORIZZATO

LOTTO : 02.3080 Colata : 821339

TIM GRUPO USINOR

TREFILADOS INOXIDABLES DE MÉXICO, S.A. DE C.V.
AVE. OTOMIES S/N
CD IND. XICOHTENCATL II C.P. 90500
HUAMANTLA, TLAX., MÉXICO
TELS. (012) 47 23157; (012) 47 23159; FAX (012) 47 23160

CERTIFICATE OF CONFORMANCE
No.: 818

SOLD TO	TEVI Srl VIA GENOVA 14 PONTE DELL'OLIO (PIACENZA). 29098 ITALY	SHIP TO	TEVI Srl C/O TUBIFLEX SPA CONTO DEPOSITO NO. 03/2001 STRADA TORINO, 25 ORBASSANO (TO), 10043 ITALY

Customer		Reference Numbers		Date
Number	P.O.	Work Order	Lot	
C037	CD.33	OP0000604	L0000753	4/04/02

ITEM DESCRIPTION

	Qty Ship	Heat Number	Ø	Tolerances
Stainless steel wire 0.40mm AISI 304, Annealed, Bright, DIN200 black spool TUBIFLEX ITEM No:M162	6,295 Kgs	146057	0.400	± 0.010

CHEMICAL ANALYSIS

C %	.050	Si %	.410	Mn %	.790	Ni %	8.890	Cr %	18.220
Mo%	.340	N %	.049	S %	.0049	P %	.0260	Cu %	.430

MECHANICAL PROPERTIES

No.	Ø mm	Tol mm	Rm Mpa	Rpo.2 Mpa.	A L100 %	
0001	0.396	0.004	793		44%	
0002	0.394	0.006	781		46%	
0003	0.396	0.004	765		45%	
0004	0.399	0.001	752		44%	

Average Diameter mm	Rm Min Mpa.	Rm Max Mpa.				
0.396	703	793				

NOTES

COPIA CONFORME ALL'ORIGINALE TUBIFLEX spa ASS. QUALITA'

Packing List No. 366

Box No.1 weight	1,046 Kgs
Box No.2 weight	1,051 Kgs
Box No.3 weight	1,047 Kgs
Box No.4 weight	1,042 Kgs
Box No.5 weight	1,053 Kgs
Box No.6 weight	1,056 Kgs

Authorized signature

LOTTO : 02.5441 Colata : 146057

SIDERINOX S.p.A.
Frazione Caselle 20081 - MORIMONDO (Milano) Italia
Ufficio Commerciale Tel. 029498151 Fax 02949815250 - 251
Ufficio Amministrativo Tel. 029498181 Fax 02949816350
Ufficio Spedizioni Tel. 0294981622 Fax 02949816350 E-Mail sx@siderinox.it http://www.siderinox.it

Certificato di collaudo N° 63528 del 12/03/2002

Cliente: LEINOX S.R.L.

Numero Bolla: 20505 del 12/03/2002

Conferma d'ordine Siderinox N° 2001/ORC/ 4393 | Ordine Cliente N° 4393

DESCRIZIONE DEL MATERIALE

Descrizione prodotto: Tubo tondo saldato in acciaio inossidabile laminato a freddo spazzolato

Dimensioni: 70 x 2 mm	Quantità MT: 144	Colata: 51A7	Fattore di saldatura: V = 1

Tipo acciaio - norma di prodotto: AISI 316L/Z2 CND 17-12 sec. NF A 49147

Tipo tolleranza dimensionale: Tolleranza UNI EN ISO 1127-D3/T3

COMPOSIZIONE CHIMICA DELLA COLATA

I valori chimici si riferiscono al certificato rilasciato dalla Acciaieria

N° Colata	% C	% Mn	% P	% S	% Si	% Cr	% Ni	% Mo	% Ti	% Cu
Valore minimo Valore massimo	0,03	2,04	0,045	0,035	1,05	16 16,2	10,5 13,15	1,9 2,5	0	1
51A7	0,019	1,281	0,026	0,001	0,374	16,952	11,313	2,171	0	0

RISULTATI DELLE PROVE

N° Prova	Classe di prova	PROVA DI TRAZIONE in N/mm²=MPA								DUREZZA	
		Snervamento				Carico rottura		Allungamento			
		Rp 0,2%		Rp 1%		Rm		A%		HRB	
		Minimo 195	Massimo	Minimo	Massimo	Minimo 490	Massimo 690	Minimo 35	Massimo	Minimo	Massimo 80
23451	N.P.	313		0		621		45,6		85,3	

Prova di schiacciamento secondo NF EN 10233
OK

Prova di svasatura secondo NF EN 10234
OK

Prova antimiscuglio:
N.P.

Prova di tenuta secondo Contrôle Courent de Foucault 100%
OK

Prova corrosione intercristallina secondo NFA 05-159
OK

Controllo non distruttivo Eddy Current secondo N.P.
/

Controllo dimensionale: OK

Esame visivo: OK

COPIA CONFORME ALL'ORIGINALE LEINOX

Si dichiara che il materiale fornito è conforme a quanto concordato all'ordinazione

Nota

Morimondo, 12/03/2002

Documento rilasciato dal Responsabile di Laboratorio
A. Scarioni
A. Scarioni

Documento convalidato dal Rappresentante aziendale autorizzato
M. Bertani

Mod. 10A

ROLDAN, S.A.
aceros inoxidables

FABRICA
SANTO TOMAS DE LAS OLLAS, S/N
APDO DE CORREOS 11
PONFERRADA (LEON)
TELEFONO: (987) 44 61 00
FAX: (987) 44 61 01
E-MAIL: roldansa@mx3.redestb.es

OFICINA CENTRAL
SANTIAGO DE COMPOSTELA, 100-3.°
28035 MADRID (ESPAÑA)
TELEF.: (91) 398 52 57
FAX: (91) 398 51 93
E-MAIL: roldan@acxgroup.com

CERTIFICADO DE INSPECCION
INSPECCTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS
CERTIFICAT DES PRODUIT
EN 10.204.3.1.B

2.000/92.942	FECHA/DATE: 29/11/2000
N.° ALBARAN: 2.000/ 7.860	Hoja num. 1
MATERIAL / GRADE / WERKSTOFF / NUANCE: ROLDAMAX-264 AISI (316L)	

TÜV CERT DIN ISO 9002

CLIENTE / CUSTOMER / BESTELLER / CLIENT
METALSTEEL DIVISIONE DI SO.GE.PAR. SPA

TOLERANCIA / TOLERANCE / TOLERANZ / TOLERANCE
ISO h11

PRODUCTO / PRODUCT / PRUFGEGENSTAND / PRODUIT
Barra pelata.

REQUERIMIENTOS / REQUIREMENTS / ANFORDERUNGEN / EXIGENCES
AISI

DIMENSIONES / DIMENSIONS / ABMESSUNGEN / DIMENSIONS
80,00mm.

LONGITUD / LENGHT / LÄNGE / LONGEUR
6.100 mm.

N.° CONTRATO / ORDER N.° / BESTELL N.° / N.° CONTRACT	MARCA/CAJA / MARKS/BOX / MARKE/BOX / MARQUE/CAISSE	N.° COLADA / CAST N.° / SCHMELZEN N.° / N.° COULEE	PESO / WEIGHT / GEWICHT / POIDS
LE40745	45055/RB45506	C31058	738
"	45056/RB45507	C31058	737
"	45057/RB45508	C31058	738
"	45058/RB45509	C31058	738

CARACTERISTICAS MECANICAS / MECHANICAL PROPERTIES / MECHANISCHE EIGENSCHAFTEN / CARACTERISTIQUES MECANIQUES

N.° COLADA / CAST N.° / SCHMELZEN N.° / N.° COULEE	RT Nw/mm2	E 0.2% Nw/mm2	E 1% Nw/mm2	RA	A% %L 5 d	DUREZA / HARDNESS / HÄRTE / HB	RESILIENCIA J
C31058	608	321	367	67	46	153	
CONDICIONES IMPUESTAS / REQUIRED VALUES / SOLLWERTE / EXIGENCES							

COPY CONFORMING TO THE ORIGINAL
METALSTEEL
Divisione di So.Ge.Par. S.p.A.
LUCA [illegible]
SIGNATURE

COMPOSICION QUIMICA % / CHEMICAL COMPOSITION % / CHEMISCHE ZUSAMMENSETZUNG % / COMPOSITION CHIMIQUE %

N.° COLADA / CAST N.° / SCHMELZEN N.° / N.° COULEE	C	P	S	Si	Mn	Cr	Ni	Mo	Ti	Cu
C31058	0,0260	0,0300	0,0280	0,3210	1,5970	17,1250	10,6680	2,1100	0,0040	0,4950
CONDICIONES IMPUESTAS / REQUIRED VALUES / SOLLWERTE / EXIGENCES	0,0300	0,0450	0,0300	0,7500	2,0000	16,0000 / 18,0000	10,0000 / 14,0000	2,0000 / 3,0000		

Vs. Ord. TEL
Ns. Bolla 23281A
del 12/04/00

OBSERVACIONES / OBSERVATIONS / BEMERKUNGEN / OBSERVATIONS

INSPECCION DIMENSIONAL Y VISUAL
SURFACE AND DIMENSIONS CONTROL
BESICHTIGUNG UND MASSKONTROLLE WURDEN DURCHGEFÜHRT
INSPECTION DIMENSIONELLE VISUELLE
WITHOUT OBJECTIONS

CORROSION INTERGRANULAR
INTERGRANULAR CORROSION
INTERKRISTALLINE KORROSION
CORROSION INTERGRANULAIRE
ASTM-A-262-98 PRACTICE "E" SATISFACTORY

OTROS ENSAYOS
OTHER TEST RESULTS
SONSTIGE PROFUGEN
AUTRES ESSAIS

CONTRASEÑA DEL SUMINISTRADOR
TRADE MARK
HERSTELLERZEICHEN
SIGLE DU PRODUCTEUR

SELLO DEL RECEPCIONADOR
INSPECTOR STAMP
VERSTANDINGEN
SIGLE DE L'AGENT RECEPTIONNAIRE
R3

SISTEMA DE FABRICACION
STEELMAKING PROCESS
ERSCHMELZUNGSART
ELABORATION
EAF+AOD+CC

POR CONTROL DE CALIDAD
QUALITY INSPECTOR
DER ABNAHMEBEAMTE
L'AGENT RECEPTIONNAIRE
JOAQUIN DIEGUEZ GONZALEZ

QUALITY CONTROL REPRESENTATIVE
No necesaria firma según EN 10.204

CL_ROL_30

COGNE ACCIAI SPECIALI S.R.L.
11100 AOSTA - VIA PARAVERA, 16
TEL +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 40.020.000.000 INT. VERS.
VAT: IT00571320076
P.I. 00571320076 C.F. 02187360967
REG. IMP. AO003 - 7234 REA 50474

(A02) CERTIFICATO DI COLLAUDO SECONDO DIN 50049/EN 10204 - 3.1.B
(A03) NUMERO DEL DOCUMENTO 2001019411

(A06) COMMITTENTE .: COGNE DISTRIBUZIONE ITALIA SRL
(A07) ORDINAZIONE DEL COMMITTENTE .: OdA: IT72 4500025211
(A01) STABILIMENTO PRODUTTORE .: AOSTA, VIA PARAVERA 16
(A05) REDATTORE DEL DOCUMENTO .: SERVIZIO QUALITA'
(A08) CONFERMA D'ORDINE DEL PRODUTTORE : D7100754 /10 (A04) SIGLA STABILIMENTO PRODUTTORE .: COGNE

SPECIFICA : CAS-E REGOLA TECNICA :
(B01) PRODOTTO .: 3132 SPE Sgrossati di pelatura Tondi HSTD
(B04) STATO DI FORNITURA .: RS Ricotto Solubilizzato
(B11) DIMENSIONI DEL PRODOTTO (MM): 110,000 (B12) LUNGH. DEL PRODOTTO (MM): 04000 /06000
(B02) QUALITA' ACCIAIO .: WN.1.4301-4307 MARCA INTERNA : F304L1
(B08) NUMERO DI COLATA .: 170025 (B07) NUMERO DI SCHEDA .: 417710
(B06) MARCATURA DEL PRODOTTO .: SIGLA SOST. N. COLATA : 771

CONFORMITA' ALLA NORMA EN 10088/3 WN.1.4301
CONFORMITA' ALLA NORMA DIN 17440, W.1.4307
CONFORMITA' ALLE SPECIFICHE: ASTM A276-96, A182/A182M-96, A193/A193M -1996 B8, A320/A320M-94A B8, A479/A479M-96
CONFORMITA' NORMA SS2332 - NFA 35 574 Z7 CN 18-09
CONFORMITA' ALLA NORMA SIS 2333
CONFORMITA' ALLA SPECIFICA NF A35-574/90, NUANCE Z3 CN 19-09
FABBRICAZIONE AL FORNO ELETTRICO + AOD + COLATA CONTINUA

(C71) COMPOSIZIONE CHIMICA - ANALISI DI COLATA

Ref.	020000030921									
ELEMENTI -	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OTTENUTO	0,017	0,420	1,840	0,027	0,025	0,088	18,100	0,420	8,500	0,480
ELEMENTI	Co									
OTTENUTO	0,100									

PROVA DI DUREZZA ALLO STATO DI FORNITURA

Ref.	020000031310		
NORMA	EN 10003	PROVA DI DUREZZA	HB
OTTENUTO	182,0		

PROVA DI TRAZIONE ALLO STATO DI FORNITURA

Ref. 020000031310
NORMA EN 10002 (C02) ORIENTAMENTO DELLE PROVETTE: L

UNITA' DI MISURA	RM NMM	RP02 NMM	A % 5.0 D	Z %	RP1 NMM
OTTENUTO	611,00	306,00	56,00	75,00	350,00
	605,00	299,00	56,40	76,00	342,00
	605,00	297,00	56,60	76,00	339,00
	599,00	293,00	57,20	77,00	338,00

IL MATERIALE E' STATO CONTROLLATO AL 100% X ANTIMISCUGLIO
CONTROLLO VISIVO SUPERFICI E DIMENSIONI: CONFORME.

COGNE ACCIAI SPECIALI S.R.L.
11100 AOSTA - VIA PARAVERA, 16
TEL +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 40.020.000.000 INT. VERS.
VAT: IT00571320076
P.I. 00571320076 C.F. 02187360967
REG. IMP. AO003 - 7234 REA 50474

NON E' STATA ESEGUITA ALCUNA RIPARAZ. DEL MATERIALE MEDIANTE SALDATURA
IL MATERIALE NON E' STATO CONTAMINATO DA MERCURIO
PROVA DI CORROSIONE (SEC. DIN50914-EN114-ASTM A262): CONFORME
LA FORNITURA E' CONFORME ALLE PRESCRIZIONI CONTRATTUALI
MATERIALE PRODOTTO IN UN SISTEMA DI G.D.Q. IN ACCORDO CON LE NORME
UNI EN ISO9002.94 E QS-9000 ED.3 MAR.98 (QUEST'ULTIMA SOLO PER BARRE IN
ACCIAO LAMINATE-PELATE-RETTIFICATE), CERTIFICATO DA I.G.Q.

(Z01) DATA 03.07.2001

FIRMA AUTORIZZATA DALLA A.Q. Cogne Acciai Speciali S.r.l.

VILLARES METALS SA
SUMARÉ PLANT / HEAD OFFICE
R. Alfredo Dumont Villares, 155
13177-900 - Sumaré - SP
BRAZIL
Phone: 55 19 864-8000 - Fax: 55 19 864-8164
http://www.villares.com.br
e-mail: metals@villares.com.br

INSPECTION CERTIFICATE

CERT. Nr. 014020

ACC. TO DIN 50049 3.1.B / EN10204 3.1.B

CUSTOMER *VILLARES STEEL INTERNATIONAL B. V.* INVOICE *309*

PURCHASE ORDER Nr./ITEM *52324*

VILLARES METALS REFERENCES

JOB ORDER Nr. (OS) *3859 (40069170101)* LOT Nr. *3859* PACKAGE Nr. *3859/01*

VILLARES GRADE	SIMILAR GRADE
V316XLUF	*WNR14404VIMAC/316L*

ATTENDED SPECIFICATIONS
DIN 17440 / SET/96

MELTING PROCESS	PRODUCT LINE	HEAT TREATMENT CONDITION	FINISHING
Electric Arc Furnace	*Forged*	*Solution Treated*	*Peeled*

NET WEIGHT	QUANTITY	PRODUCT	DIMENSIONS (mm)	LENGTH RANGE (mm)
3.0 kg	*3*	*Round Bar*	*170.00 Tol (-)0.000 (+)1.000*	*2500 / 5700*

CHEMICAL COMPOSITION (% in weight) HEAT Nr. *0777263*

C	*0.023*	*Si*	*0.41*	*Mn*	*1.94*	*P*	*0.037*	*S*	*0.02*	*Co*	*0.09*	*Cr*	*17.30*	*Mo*	*2.15*	*Ni*	*10.50*		
Cu	*0.27*	*N*	*0.076*																

HARDNESS ACC. TO SPECIFICATION ASTM A370
156 HB

VISUAL & DIMENSIONAL INSPECTIONS
RESULT: APPROVED

ULTRA SONIC TEST ACC. TO SPECIFICATION ASTM A388
RESULT: APPROVED

ANTI-MIXTURE TESTING
RESULT: APPROVED

TENSILE TEST
SPECIMEN #: 5506 DIMENSION (mm): 12.0 UNIT: MPA T. STRENGTH TRANSVERSE: 555 Y. STRENGTH 0,2% TRANSVERSE: 264 Y. STRENGTH 1,0% TRANSVERSE: 310 RED. OF AREA TRANSVERSE (%): 63.0 ELONG. TRANSVERSE (%): 55.7

IMPACT TEST
SPECIMEN #: 5506 TYPE: ISO NOTCH: V TEMPERATURE (ºC): ROOM DIRECTION 2: TRANSVERSE INDIVIDUAL RESULT 2A: 140.0 INDIVIDUAL RESULT 2B: 138.0 INDIVIDUAL RESULT 2C: 146.0 AVERAGE RESULT 2: 141.3 UNIT 2: J

GRAIN SIZE ACC. TO SPECIFICATION ASTM E112
RESULT: APPROVED
GRAIN SIZE RESULT: 3/5 ASTM

CORROSION RESISTANCE ACC. TO SPECIFICATION DIN 50914
RESULT: APPROVED

HEAT TREATMENT CYCLE
CYCLE 1: SOLUTION ANNEALED TEMPERATURE 1 (ºC): 1040 TIME 1 (h): 5.00 COOLING MEDIA 1: WATER

REMARKS
MATERIAL ALSO ATTENDS DIN EN10088/95 (1.4401/1.4404) , AISI316/316L , ASTM A182/96 (F316/F316L) , ASTM A276/A479-96 (316/316L) AND WNR1.4401

COPY CONFORMING TO THE ORIGINAL
METALSTEEL
Divisione di S.G.Ge.Par S.p.A.
SIGNATURE

METALSTEEL
Divisione di S.G.Ge.Par S.p.A.
RESPONSABILE CONTROLLO QUALITÀ

SUPPLIER MARK

OUR QUALITY MANAGEMENT SYSTEM IS CERTIFIED TO ISO 9002

ISO 9002

10/09/1999

DIONÍSIO Q. ABREU

FORONI S.p.A. *21055 Gorla Minore (VA)* *ITALIA*	Marchio -		CERTIFIED MATERIAL TEST REPORT Certificato di collaudo EN 10204-3.1 B	Data 31/05/2000	Cert. N° 1480/2000 Rev. 0

Cliente	METALSTEEL di So.Ge.Par. S.p.A.	Ordine	452	Materiale	1.4307/1.4301 - F304L/F304 - T.304L/T.304 Materiale classe: FORMAC

Specifiche EN 10088-3 (04/95); ASTM A182-99*, A276-98b, A479-99a; Documento FORONI S.p.A. 21/01/2000.
(* Solo analisi chimica e proprietà meccaniche).

Posiz.	Descrizione	Dimensione - mm	Rapp. rid.	N° Pezzi	Peso Kg	Condizioni di fornitura	Elaborazione	Colata n°
11	Barra tonda D.	165	12.3	2	1880	FORGIATO, SOLUBILIZZATO E PELATO	E.F. / A.O.D.	00211 V.A.R. -

% Analisi chimica -

	C	Mn	Si	Cr	Ni	S	P	N											
Heat analysis	0.021	1.66	0.33	18.10	8.26	0.022	0.028	0.075											

Caratteristiche meccaniche -

Prova n°	Orient.	Temp. °C		Y.S. 0.2 % MPa	Y.S. 1% MPa	U.T.S. MPa	EL. % 5D	R of A. %	Durezza HB	Durezza HRC	Resilienza - Orient.	Resilienza - Temp. °C	Resilienza - KV J			Espansione laterale mm			Area duttile %		
9402/1	TRV		R.T.	262	299	577	55	59.1	146		TRV	R.T.	150	142	152						

Dim. grano
ASTM E112-96 4-5

Note -
- Solubilizzazione a 1060°C x ½ h / pollice - Acqua.
- Materiale fabbricato e collaudato secondo norma EN 10088-3, con analisi atta a garantire la conformità alle norme e gradi indicati.
- Materiale classe FORMAC ad alta lavorabilità.

Pz. 141
Vs. Ord. FAX
Ns. Bolla 2466/a
del 22/04/00

Il materiale è in accordo alle specifiche citate. Il materiale è stato fabbricato in conformità al programma di garanzia della qualità della FORONI S.p.A.

Q. A. Manual -
Data 10/01/2000

Rep. Ass. Qualità
SCQ - P.MONTI

Ispettore
SGQ - L.GALLAZZI

-Material made in Italy. **- No welds, no mercury and radioactive contamination.**

TÜV CERT DIN EN ISO 9001 QS-9000/VDA 6.1

EDELSTAHL WITTEN-KREFELD GMBH

Auestraße 4
D-58452 Witten
Telefon: (02302)29-0
Telefax: (02302)29-40 00
Postanschrift: D-58449 Witten

Datum/Date : 31.01.02

Zertifiziert nach:	ISO 9001 VDA 6, Teil 1	ADW 0 TRD 100	wk BRL-A 45.1 RW-TÜV

Abnahmeprüfzeugnis nach

Inspection Certificate acc.to / Certificat de réception selon DIN EN 10204 3.1B

Zeugnis-Nr. / Certificate No. / No.de Certificat 403975 / 7143316 / bit

Edelstahl Witten - Krefeld GmbH, D-58449 Witten
Metalsteel
Divisione SO.GE.PAR. SpA
Via Santa Sofia, 27
IT-20122 Milano

Herstellerzeichen / Supplier's Mark / Marque d'usine	wk
Prüfstempel / Inspector's stamp / Poincon de l'expert	QA

Warenempfänger
METALSTEEL
Divisione SO.GE.PAR SpA
Via per Montodine
IT-26012 Castelleone CR

Ihre Auftr.-Nr. Your order No. / No.de votre commande	**Bestelldatum** Date of order / Date du commande
700599 / 100	28.01.02
Unsere Auftr.-Nr. Our order No. / No.de notre Commande	**Unsere Material-Nr.** Our material No. / No.de notre matériel
123326 / 8	2117573
Unsere Abteilung / Our department / Notre département	**Telefon** / Telephone / Téléphone
VR2	02302 / 294837

Produkt / Product / Produit

STAEBE AUS NICHTROSTENDEM STAHL
REMANIT 4301/4307, TYPE 304/304L
GEWALZT, ABGESCHRECKT, GERICHTET,
GESCHAELT, SUPER IM
DIN 17440, AD-W2, AD-W10, EN 10088-3,
ASTM A 182/276/479, ASME SA 182/479,
QQS 763D, SIS 14 23 33-47, NFA 35-574,
NACE MR 01-75, AMS 5639, AMS 5647

Fertigungsauftr.-Nr. / Production lot-No. / Lot de fabrication No.	:
Lieferschein-Nr. / Delivery note / No. de l'avis de livraison	:
Schmelzen-Nr. / Heat No. / No.de coulée	: 403160
Stückzahl / Piece No. / Nombre des pièces	: 7
Gewicht / Weight / Masse	: 1990 [kg]
Zeichnungs-Nr. / Drawing No. / No.du dessin	:
Format / Shape / Profil	: rund / round / rond
Durchm./Breite / Diameter/width / Diamètre/largeur	: 90 [mm] + 0.540 / - 0.000 [mm]
Dicke / Thickness / Epaisseur	:
Länge / Length / Longueur	: 4000 - 6000 [mm]

Stückzahl und Gewicht siehe Rechnung.
Quantity and weight see delivery bill/invoice. / Nombre des piéces et masse voir facture.

Lieferzustand / Condition as supplied / Etat de livraison : 1050 °C Luft (beschleunigt)

Die Prüfergebnisse zu Ihrer Lieferung finden Sie auf der Rückseite bzw. den nächsten Seiten
As for test results of your delivery see overleaf. / Vouz trouverez les resultats d'essais de votre livraison aux pages suivantes.

EDELSTAHL WITTEN-KREFELD GMBH
Abnahmetechnik / Inspection department / Département de Réception

Krause
Der Werkssachverständige
Works' inspector / L'Agent Réceptionnaire de l'usine

Dieses Zeugnis wurde maschinell erstellt und ist gemäß DIN EN 10204 auch ohne Unterschrift gültig.
This certificate has been generated by computer and need not to be signed for validity according to DIN EN 10204.
Le certificat a été etabli sur systéme informatique et est aussi valable selon DIN EN 10204 sans signature.

5
33361A
03/06/02

TÜV CERT DIN EN ISO 9001 QS-9000/VDA 6.1

EDELSTAHL WITTEN-KREFELD GMBH

Auestraße 4
D-58452 Witten
Telefon: (02302)29-0
Telefax: (02302)29-40 00
Postanschrift: D-58449 Witten

Datum/Date : 31.01.02

Zeugnis-Nr. Certificate No. / No.de Certificat	Unsere Auftr.-Nr. Our order No. / No.de notre Commande	Ihre Auftr.-Nr. Your order No. / No.de votre commande	Fertigungsauftr.-Nr. Production lot-No. / Lot de fabrication No.
403975 / 7143316 / bit	123326 / 8	700599 / 100	

Schmelzen-Nr. / Heat No. / No.de coulée	Erschmelzungsart / Steelmaking process / Procédé d'élaboration	Sekundärmetallurgie / Secondary metallurgy / Metallurgie seconduire
403160	E	VOD

Chemische Zusammensetzung / Chemical Composition / Composition chimique

	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V	W	Co	Al	
Ist / Actual / Actuel	0.012	0.28	1.70	0.030	0.028	18.10	0.33	8.22	0.36	0.04	0.06	0.096	< 0.003	[%]
	N	**B**	**Ti**	**Nb**	**Ca**									
Ist / Actual / Actuel	0.076	0.0041	< 0.003	< 0.005	< 0.001									[%]

Härte / Hardness / Dureté

Lieferzustand / Condition as supplied / Etat de livraison

Proben-Nr. / Specimen-No. / No.d'eprouvette	69888	
Ist / Actual / Actuel	168	[HB]

HRC MAX 22

Zugversuch / Tensile test / Essai de traction

Lieferzustand / Condition as supplied / Etat de livraison

Probenabm. / Specimen dimension / Dimension d'éprouvette	**Probenrichtung** / Specimen direction / Sens de Prélèvement	**Prüftemp.** / Test temperature / Température d'essai
Zugprobe; 12,5 mm rd	längs / longitudinal / longueur	23 [°C]

Proben-Nr. / Specimen-No. / No.d'eprouvette	**Rpo.2** [MPa (N/mm²)]	**Rp1.o** [MPa (N/mm²)]	**Rm** [MPa (N/mm²)]	**A5** [%]	**A2''** [%]	**Z** [%]
69892	264	311	604	53.8	55.5	74
69891	260	320	615	52.0	54.0	74
69890	265	300	608	50.3	52.1	76
69889	266	309	607	54.8	56.6	75

Schlagbiegeversuch / Impact test / Essai de résilience

Lieferzustand / Condition as supplied / Etat de livraison

Probenform / Type of specimen / Type d'éprouvette	**Probenrichtung** / Specimen direction / Sens de Prélèvement	**Prüftemp.** / Test temperature / Température d'essai
[CHARPY V]	längs / longitudinal / longueur	23 [°C]

Proben-Nr. / Specimen-No. / No.d'eprouvette	**1. Prfl.** / Spec. / Eprouvette	**2. Prfl.** / Spec. / Eprouvette	**3. Prfl.** / Spec. / Eprouvette
69892	291 [J]	275 [J]	280 [J]
69891	279 [J]	278 [J]	273 [J]
69890	293 [J]	288 [J]	280 [J]
69889	288 [J]	284 [J]	289 [J]

TÜV CERT DIN EN ISO 9001 QS-9000/VDA 6.1

EDELSTAHL WITTEN-KREFELD GMBH

Auestraße 4
D-58452 Witten
Telefon: (02302)29-0
Telefax: (02302)29-40 00
Postanschrift: D-58449 Witten

Datum/Date : 31.01.02

Zeugnis-Nr. Certificate No. / No.de Certificat	Unsere Auftr.-Nr. Our order No. / No.de notre Commande	Ihre Auftr.-Nr. Your order No. / No.de votre commande	Fertigungsauftr.-Nr. Production lot-No. / Lot de fabrication No.
403975 / 7143316 / bit	123326 / 8	700599 / 100	

Interkristalline Korrosion / Intergranular corrosion / Corrosion intercristalline

ASTM A 262 PRACTICE E / DIN 50914

Die Lieferung wurde US geprüft

Die Lieferung wurde auf Identität geprüft (Spectro.)
Rißkontrolle wurde durchgeführt
Die Lieferung wurde besichtigt und auf Maß kontrolliert

Erläuterung/ Explanations/ Explications

¤ **Erschmelzungsart** / Steelmaking process / Procédé d'élaboration : **E** = Elektrostahl / Electric-arc-furnace steel / Acier électrique
¤ **Sekundärmetallurgie** / Secondary metallurgy / Metallurgie secondaire : **VOD** = Vakuum-Sauerstoff-Entkohlungs-Verfahren / Vacuum-Oxygen-Decarburization / Vacuum-Oxygène-Décarburation

Die Lieferung wurde aus einem bevorrateten, geprüften Abnahmelos entnommen.
Material against this delivery has been taken from a stored and tested inspection lot.
La livraison a été pris d'un lot de réception stocké et éprouvé.

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellungsannahme enspricht.
We hereby certify that the material described above has been tested and complies with the terms of the order.
Nous certifions que la livraison été vérifiée et est conforme aux stipulations de l´acception de la commande.

EDELSTAHL WITTEN-KREFELD GMBH

Auestraße 4
D-58452 Witten
Telefon: (02302)29-0
Telefax: (02302)29-40 00
Postanschrift: D-58449 Witten

Datum/Date : 06.02.02

Zertifiziert nach:	ISO 9001 VDA 6, Teil 1	ADW 0 TRD 100	wk BRL-A 4.5.1 RW-TÜV

Abnahmeprüfzeugnis nach DIN EN 10204 3.1B
Inspection Certificate acc.to / Certificat de réception selon

Zeugnis-Nr. / Certificate No. / No.de Certificat 406671 / 7144220 / bit

Edelstahl Witten - Krefeld GmbH, D-58449 Witten
Metalsteel
Divisione SO.GE.PAR. SpA
Via Santa Sofia, 27
IT-20122 Milano

Herstellerzeichen / Supplier's Mark / Marque d'usine	wk
Prüfstempel / Inspector's stamp / Poincon de l'expert	QA

Warenempfänger
METALSTEEL
Divisione SO.GE.PAR SpA
Via per Montodine
IT-26012 Castelleone CR

Ihre Auftr.-Nr. Your order No. / No.de votre commande	**Bestelldatum** Date of order / Date du commande
700599 / 100	28.01.02
Unsere Auftr.-Nr. Our order No. / No.de notre Commande	**Unsere Material-Nr.** Our material No. / No.de notre matériel
123326 / 9	2117575
Unsere Abteilung / Our department / Notre département	**Telefon** / Telephone / Téléphone
VR2	02302 / 294837

Produkt / Product / Produit

STAEBE AUS NICHTROSTENDEM STAHL
REMANIT 4301/4307, TYPE 304/304L
GEWALZT, ABGESCHRECKT, GERICHTET,
GESCHAELT, SUPER IM
DIN 17440, AD-W2, AD-W10, EN 10088-3,
ASTM A 182/276/479, ASME SA 182/479,
QQS 763D, SIS 14 23 33-47, NFA 35-574,
NACE MR 01-75, AMS 5639, AMS 5647

Fertigungsauftr.-Nr. / Production lot-No. / Lot de fabrication No.	:
Lieferschein-Nr. / Delivery note / No. de l'avis de livraison	:
Schmelzen-Nr. / Heat No. / No.de coulée	: 385140
Stückzahl / Piece No. / Nombre des pièces	: 6
Gewicht / Weight / Masse	: 2149 [kg]
Zeichnungs-Nr. / Drawing No. / No.du dessin	:
Format / Shape / Profil	: rund / round / rond
Durchm./Breite / Diameter/width / Diamètre/largeur	: 100 [mm] + 0.540 / - 0.000 [mm]
Dicke / Thickness / Epaisseur	:
Länge / Length / Longueur	: 4000 - 6000 [mm]

Stückzahl und Gewicht siehe Rechnung.
Quantity and weight see delivery bill/invoice. / Nombre des piéces et masse voir facture.

Lieferzustand / Condition as supplied / Etat de livraison : 1050 °C Luft (beschleunigt)

Die Prüfergebnisse zu Ihrer Lieferung finden Sie auf der Rückseite bzw. den nächsten Seiten
As for test results of your delivery see overleaf. / Vouz trouverez les resultats d'essais de votre livraison aux pages suivantes.

EDELSTAHL WITTEN-KREFELD GMBH
Abnahmetechnik / Inspection department / Département de Réception

Krause
Der Werkssachverständige
Works' inspector / L'Agent Réceptionnaire de l'usine

Dieses Zeugnis wurde maschinell erstellt und ist gemäß DIN EN 10204 auch ohne Unterschrift gültig.
This certificate has been generated by computer and need not to be signed for validity according to DIN EN 10204.
Le certificat a été etabli sur systéme informatique et est aussi valable selon DIN EN 10204 sans signature.

15
3336/9
03/06/02

METALSTEEL
Divisione di So.Ge.Par. S.p.A.
RESPONSABILE
CONTROLLO QUALITÀ

TÜV CERT DIN EN ISO 9001 QS-9000/VDA 6.1

EDELSTAHL WITTEN-KREFELD GMBH

Auestraße 4
D-58452 Witten
Telefon: (02302)29-0
Telefax: (02302)29-40 00
Postanschrift: D-58449 Witten

Datum/Date : 06.02.02

Zeugnis-Nr. Certificate No. / No.de Certificat	**Unsere Auftr.-Nr.** Our order No. / No.de notre Commande	**Ihre Auftr.-Nr.** Your order No. / No.de votre commande	**Fertigungsauftr.-Nr.** Production lot-No. / Lot de fabrication No.
406671 / 7144220 / bit	123326 / 9	700599 / 100	

Schmelzen-Nr. / Heat No. / No.de coulée	**Erschmelzungsart** / Steelmaking process / Procédé d'élaboration	**Sekundärmetallurgie** / Secondary metallurgy / Metallurgie secondaire
385140	E	VOD

Chemische Zusammensetzung / Chemical Composition / Composition chimique

	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V	W	Co	Al	
Ist / Actual / Actuel	0.015	0.22	1.59	0.032	0.028	18.21	0.32	8.39	0.34	0.04	0.06	0.092	< 0.003	[%]
	N	B	Ti	Nb	Ca									
Ist / Actual / Actuel	0.072	0.0043	< 0.003	< 0.005	< 0.001									[%]

Härte / Hardness / Dureté

Lieferzustand / Condition as supplied / Etat de livraison

Proben-Nr. / Specimen-No. / No.d'eprouvette	58219	
Ist / Actual / Actuel	178	[HB]

HRC MAX 22

Zugversuch / Tensile test / Essai de traction

Lieferzustand / Condition as supplied / Etat de livraison

Probenabm. / Specimen dimension / Dimension d'éprouvette	**Probenrichtung** / Specimen direction / Sens de Prélèvement	**Prüftemp.** / Test temperature / Température d'essai
Zugprobe; 12.5 mm rd	längs / longitudinal / longueur	23 [°C]

Proben-Nr. / Specimen-No. / No.d'eprouvette	**Rpo.2** [MPa (N/mm²)]	**Rp1.o** [MPa (N/mm²)]	**Rm** [MPa (N/mm²)]	**A5** [%]	**A2"** [%]	**Z** [%]
58224	278	318	620	50.9	52.5	76
58223	273	317	617	51.7	53.6	77
58222	273	322	609	55.1	57.0	75
58221	276	318	613	53.8	55.7	74

Schlagbiegeversuch / Impact test / Essai de résilience

Lieferzustand / Condition as supplied / Etat de livraison

Probenform / Type of specimen / Type d'éprouvette	**Probenrichtung** / Specimen direction / Sens de Prélèvement	**Prüftemp.** / Test temperature / Température d'essai
[CHARPY V]	längs / longitudinal / longueur	23 [°C]

Proben-Nr. / Specimen-No. / No.d'eprouvette	**1. Prfl.** / Spec. / Eprouvette	**2. Prfl.** / Spec. / Eprouvette	**3. Prfl.** / Spec. / Eprouvette
58224	297 [J]	283 [J]	292 [J]
58223	293 [J]	286 [J]	302 [J]
58222	307 [J]	309 [J]	295 [J]
58221	288 [J]	294 [J]	307 [J]

TÜV CERT DIN EN ISO 9001 QS-9000/VDA 6.1

EDELSTAHL WITTEN-KREFELD GMBH

Auestraße 4
D-58452 Witten
Telefon: (02302)29-0
Telefax: (02302)29-40 00
Postanschrift: D-58449 Witten

Datum/Date : 06.02.02

Zeugnis-Nr. Certificate No. / No.de Certificat	Unsere Auftr.-Nr. Our order No. / No.de notre Commande	Ihre Auftr.-Nr. Your order No. / No.de votre commande	Fertigungsauftr.-Nr. Production lot-No. / Lot de fabrication No.
406671 / 7144220 / bit	123326 / 9	700599 / 100	

Interkristalline Korrosion / Intergranular corrosion / Corrosion intercristalline

ASTM A 262 PRACTICE E / DIN 50914

Die Lieferung wurde US geprüft

Die Lieferung wurde auf Identität geprüft (Spectro.)
Rißkontrolle wurde durchgeführt.
Die Lieferung wurde besichtigt und auf Maß kontrolliert

Erläuterung/ Explanations/ Explications

¤ **Erschmelzungsart** / Steelmaking process / Procédé d'élaboration : **E** = Elektrostahl / Electric-arc-furnace steel / Acier électrique
¤ **Sekundärmetallurgie** / Secondary metallurgy / Metallurgie secondaire : **VOD** = Vakuum-Sauerstoff-Entkohlungs-Verfahren / Vacuum-Oxygen-Decarburization / Vacuum-Oxygène-Décarburation

Die Lieferung wurde aus einem bevorrateten, geprüften Abnahmelos entnommen.
Material against this delivery has been taken from a stored and tested inspection lot.
La livraison a été pris d'un lot de réception stocké et éprouvé.

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellungsannahme enspricht.
We hereby certify that the material described above has been tested and complies with the terms of the order.
Nous certifions que la livraison été vérifiée et est conforme aux stipulations de l´acception de la commande.

95

EDELSTAHL WITTEN-KREFELD GMBH

Auestraße
D-58452 Witte
Telefon: (02302)29-
Telefax: (02302)29-40 0
Postanschrift: D-58449 Witte

Datum/Date : 17.09.00

Zertifiziert nach:	ISO 9001 VDA 6. Teil 1	ADW 0 TRD 100

Abnahmeprüfzeugnis nach DIN EN 10204 3.1B
Inspection Certificate acc.to / Certificat de réception selon

Zeugnis-Nr. / Certificate No. / No.de Certificat 191531 / 7072741 / bit

Edelstahl Witten - Krefeld GmbH, D-58449 Witten
Metalsteel
Divisione SO.GE.PAR. SpA
Via Santa Sofia, 27
IT-20122 Milano

Herstellerzeichen / Supplier's Mark / Marque d'usine	wk
Prüfstempel / Inspector's stamp / Poincon de l'expert	QA

Warenempfänger
METALSTEEL
Divisione SO.GE.PAR SpA
Via per Montodine
IT-26012 Castelleone CR

Ihre Auftr.-Nr. Your order No. / No.de votre commande	**Bestelldatum** Date of order / Date du commande
700257	10.07.00
Unsere Auftr.-Nr. Our order No. / No.de notre Commande	**Unsere Material-Nr.** Our material No. / No.de notre matériel
61363 / 7	2117468
Unsere Abteilung / Our department / Notre département	**Telefon** / Telephone / Téléph
VR2	02302 / 294837

Produkt / Product / Produit

STAEBE AUS NICHTROSTENDEM STAHL
REMANIT 4401/4404, TYPE 316/316L
GEWALZT, ABGESCHRECKT, GERICHTET, GESCHAELT
DIN 17440, AD-W2, AD-W10, EN 10088-3, ASTM A 182/276/479, ASME SA 182/479, QQS 763D, NFA 35-574, NACE MR 01-75, AMS 5648, AMS 5653

Fertigungsauftr.-Nr. / Production lot-No. / Lot de fabrication No.	:
Lieferschein-Nr. / Delivery note / No. de l'avis de livraison	:
Schmelzen-Nr. / Heat No. / No.de coulée	: 26045
Stückzahl / Piece No. / Nombre des pièces	: 24
Gewicht / Weight / Masse	: 7946 [kg]
Zeichnungs-Nr. / Drawing No. / No.du dessin	:
Format / Shape / Profil	: rund / round / rond
Durchm./Breite / Diameter/width / Diamètre/largeur	: 95 [mm] + 0.540 / - 0.000 [mm]
Dicke / Thickness / Epaisseur	:
Länge / Length / Longueur	: 5700 [mm]

Stückzahl und Gewicht siehe Rechnung.
Quantity and weight see delivery bill/invoice. / Nombre des piéces et masse voir facture.

Lieferzustand / Condition as supplied / Etat de livraison : 1030 °C Wasser

Die Prüfergebnisse zu Ihrer Lieferung finden Sie auf der Rückseite bzw. den nächsten Seiten
As for test results of your delivery see overleaf. / Vouz trouverez les resultats d'essais de votre livraison aux pages suivantes.

EDELSTAHL WITTEN-KREFELD GMBH
Abnahmetechnik / Inspection department / Département de Réception

Krause
Der Werkssachverständige
Works' inspector / L'Agent Réceptionnaire de l'usine

Dieses Zeugnis wurde maschinell erstellt und ist gemäß DIN EN 10204 auch ohne Unterschrift gültig.
This certificate has been generated by computer and need not to be signed for validity according to DIN EN 10204.
Le certificat a été etabli sur système informatique et est aussi valable selon DIN EN 10204 sans signature.

8
228514
11.04.02

TÜV CERT DIN EN ISO 9001 QS-9000/VDA 6.1

EDELSTAHL WITTEN-KREFELD GMBH

Auestraße 4
D-58452 Witten
Telefon: (02302)29-0
Telefax: (02302)29-40 00
Postanschrift: D-58449 Witten

Datum/Date : 17.09.00

Zeugnis-Nr. Certificate No. / No.de Certificat	Unsere Auftr.-Nr. Our order No. / No.de notre Commande	Ihre Auftr.-Nr. Your order No. / No.de votre commande	Fertigungsauftr.-Nr. Production lot-No. / Lot de fabrication No.
191531 / 7072741 / bit	61363 / 7	700257	

Schmelzen-Nr. / Heat No. / No.de coulée	Erschmelzungsart / Steelmaking process / Procédé d'élaboration	Sekundärmetallurgie / Secondary metallurgy / Metallurgie secondaire
26045	E (Ugine)	VOD

Chemische Zusammensetzung / Chemical Composition / Composition chimique

	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V	Co	Al	N	
Ist / Actual / Actuel	0.018	0.56	1.30	0.026	0.025	16.66	2.03	10.08	0.34	0.087	0.151	0.003	0.039	[%]
	B	Ti	Nb	Ca										
Ist / Actual / Actuel	0.0005	0.0007	0.033	0										[%]

Härte / Hardness / Dureté

Lieferzustand / Condition as supplied / Etat de livraison

Proben-Nr. / Specimen-No. / No.d'eprouvette	63244	
Ist / Actual / Actuel	160	[HB]

HRC MAX 22

Zugversuch / Tensile test / Essai de traction

Lieferzustand / Condition as supplied / Etat de livraison

Probenabm. / Specimen dimension / Dimension d'éprouvette	Probenrichtung / Specimen direction / Sens de Prélèvement	Prüftemp. / Test temperature / Température d'essai
Zugprobe: 12.5 mm rd	längs / longituginal / longueur	23 [°C]

Proben-Nr. / Specimen-No. / No.d'eprouvette	Rpo.2 [MPa (N/mm²)]	Rp1.o [MPa (N/mm²)]	Rm [MPa (N/mm²)]	A5 [%]	A2'' [%]	Z [%]
63247	260	305	555	60.0	60.0	77
63246	265	310	550	59.0	59.0	77
63245	270	320	555	59.0	59.0	77
63244	250	300	550	60.0	60.0	77

Schlagbiegeversuch / Impact test / Essai de résilience

Lieferzustand / Condition as supplied / Etat de livraison

Probenform / Type of specimen / Type d'éprouvette	Probenrichtung / Specimen direction / Sens de Prélèvement	Prüftemp. / Test temperature / Température d'essai
[CHARPY V]	längs / longituginal / longueur	23 [C°]

Proben-Nr. / Specimen-No. / No.d'eprouvette	1. Prfl. / Spec. / Eprouvette	2. Prfl. / Spec. / Eprouvette	3. Prfl. / Spec. / Eprouvette
63247	225 [J]	210 [J]	220 [J]
63246	222 [J]	228 [J]	226 [J]
63245	232 [J]	205 [J]	210 [J]
63244	236 [J]	212 [J]	220 [J]

Interkristalline Korrosion / Intergranular corrosion / Corrosion intercristalline

ASTM A 262 PRACTICE E / DIN 50914

Die Lieferung wurde US geprüft

Die Lieferung wurde auf Identität geprüft (Spectro.)
Rißkontrolle wurde durchgeführt.

TÜV CERT DIN EN ISO 9001 QS-9000/VDA 6.1

EDELSTAHL WITTEN-KREFELD GMBH

Auestraße 4
D-58452 Witter
Telefon: (02302)29-(
Telefax: (02302)29-40 0(
Postanschrift: D-58449 Witter

Datum/Date : 17.09.00

Zeugnis-Nr. Certificate No. / No.de Certificat	Unsere Auftr.-Nr. Our order No. / No.de notre Commande	Ihre Auftr.-Nr. Your order No. / No.de votre commande	Fertigungsauftr.-Nr. Production lot-No. / Lot de fabrication No.
191531 / 7072741 / bit	61363 / 7	700257	

Die Lieferung wurde besichtigt und auf Maß kontrolliert

Erläuterung/ Explanations/ Explications

¤ **Erschmelzungsart** / Steelmaking process / Procédé d'élaboration : **E** = Elektrostahl / Electric-arc-furnace steel / Acier électrique

¤ **Sekundärmetallurgie** / Secondary metallurgy / Metallurgie secondaire : **VOD** = Vakuum-Sauerstoff-Entkohlungs-Verfahren / Vacuum-Oxygen-Decarburization / Vacuum-Oxygène-Décarburation

Die Lieferung wurde aus einem bevorrateten, geprüften Abnahmelos entnommen.
Material against this delivery has been taken from a stored and tested inspection lot.
La livraison a été pris d'un lot de réception stocké et éprouvé.

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellungsannahme enspricht.
We hereby certify that the material described above has been tested and complies with the terms of the order.
Nous certifions que la livraison été vérifiée et est conforme aux stipulations de l'acception de la commande.

SCAM
S.R.L.
SOCIETA' COMMERCIO ACCIAI METALLI
Via Bernini, 14 - PARMA - Tel. 293132
Cod. Fisc. e P.IVA 00166610345

4 N. Nr No 82350 | 11 N. de commande usine-Werksbestellnummer-Works order number: FUGE FUG3 1/1 7KT41000

3

CERTIFICATO COLLAUDO DI ACCETTAZIONE B
CERTIFICAT DE RECEPTION 3.1.B
INSPECTION CERTIFICATE B

EN 10204 / 3.1.B

Produit / Erzeugnisform / Product: BARRA TONDA 4307 UGIMA LAMINATA PELATA

Client et/ou destinataire - Besteller und/oder Empfaenger - Purchaser and/or Consignee (9): 011069133 01

N. de commande client - Kundebestellnummer - Purchaser order number

Nuance et spécifications techniques - Stahlsorte und Pruefbedingungen - Quality and Specifications

UGIMA 4307 4307I EN 1.4307
EUROSTORE REV.9 DU 05/97

Etat de livraison - Lieferzustand - As delivered (1): SOLUBILIZZATO (13)

Traitement de Référence - Probestreifenbehandlung - Treatment of test samples (1)

Identification du produit / Erzeugnis Benennung-Product Identification: N. de cde usine Werksbestellnummer Works order number (15)	N. de poste Past Nr Item No (17)	N. de Coulée Schmelz Nr Heat No (16)	Nombre Stueckzahl Pieces Nbr (18)	Profil Profil Shape (19)	Dimension Ausmessung Dimension (20)	Longueur Laenge Length (21)	Masse Gewicht Weight (22)
7KT41	000	026073	2	TONDO	125,000		1020 KG

Traction - Zugversuch - Tensile test

N. de Prélèvement Probenummer Test N.	Demandé Vorschrift Required (3)	Sens Richtung Direction (24)	Température d'essai Pruefteemperatur Test Temperature (25)	Limite d'Elasticité Streckgrenze Yield Strength 0,2 % (26 A)	Limite d'Elasticité Streckgrenze Yield Strength 1 % (26 B)	Résistance à la traction Zugfestigkeit Tensile strength (27)	Allongement Dehnung Elongation (28)	Striction Einschnuerung Red of Area (29)	Dureté Haerte Hardness (4)
39 B	Min	L	RT	MPA 205	MPA 225	MPA 515	% 45	% 50	
	Max					650			
	(4)			295	335	600	56	77	
	(5)								

Résilience - Kerbschlagzaehigkeit - Notch Toughness

Type Form Type (31)	Sens Richtung Direction (32)	Température d'essai Pruefteemperatur Test Temperature (33)	Valeurs Individuelles Einzelwerte Individual Values (35)	Moyenne Mittelwerte Average (36)	Dureté Haerte Hardness (5) (37)
		RT			

N. de Prélèvement Probenummer Test N. (39 A)	Demandé Vorschrift Required (40)	C (42)	SI (43)	MN (44)	NI (45)	CR (46)	N (47)	S (48)	P (49)
	Min				8,00	18,00		0,015	
	Max	0,030	1,00	2,00	10,00	19,00	0,100	0,030	0,045
N. de Coulée Schmelz Nr Heat N. 026073	Analyse Produit-Stueck-analyse-Check Analysis	0,018	0,63	1,09	9,05	18,14	0,057	0,023	0,022

Mode d'élaboration Erschmelzungsart Melting process (38)	Demandé Vorschrift Required (51)	(52)	(53)	(54)	(55)
Electrique Elektrisch Electric	Min				
	Max				

CERTIFICATO N. 202
CLIENTE FELTENATI & C. SNC
D.D.T. N. 5666 DEL 08/05/02 PZ. 120
COPIA CONFORME ALL'ORIGINALE IN NOSTRO POSSESSO
ASSICURAZIONE QUANTA'

EN10088-3 ,304L+304 ,4307+4301
RESILIENCE : VALEUR MINIMALE GARANTIE ISO-V = 160 J (EN LONG)
ASTM A182 A276 A479 GRADES 304L & 304 / BS 970 PART3 304S11 304S12 304S31
NF EN 10088-3 DIN EN 10088-3 X2CRNI18-9 X5CRNI18-10
VALORE MINIMO GARANTITO DELLA RESILIENZA ISOV - 160 J (LONG.)
RESISTENTE ALLA CORROSIONE INTERCRISTALLINA SECONDO EURONORM 114
TOUGHNESS: GUARANTEED MINIMAL IMPACT ISO-V VALUE = 160 J (LENGTH)
INTERCRYSTAL. CORROSION RESISTANT ACC. TO EURONORM 114 / ANTIMIXING TESTED

BARRA TONDA 4307 UGIMA LAMINATA PELATA
SOLUBILIZZATA TOL. K13

REGISTRATO
13 FEB. 2001
308/01

(3) L = Long / Laenge - Long / T = Travers / Quer-Transverse (58)

(1) TE = Trempé à l'eau - Wasserhaerten - Waterquench; TH = Trempé à l'huile - Oilharten - Oil Quench; A = Hypertrempé - Loesungsgeglueht - Solution annealed; R = Revenu - Anlassen - Tempered; RT = Recuit - Geglueht - Annealed; TRM = Recuit maxi - Weichgeglueht - Maxi annealed (7)

(4) A l'état de référence / Zum Bezug Zustand / At reference condition (60 A)

(5) A l'état de livraison / In Lieferzustand / In state of delivery (60 B)

Contrôles de marquage, d'aspect et de dimensions: satisfaisants / Bezeichnung, Beschaffung und Ausmessung: ohne Beanstandung / Marking, inspection and measurement: without objection (62)

Nous certifions que les produits énumérés ci-dessus sont conformes aux prescriptions de la commande / Wir bestätigen hiermit dass die obengenannten Erzeugnisse den Bestellungsvorschriften entsprechen / We certify hereby that the above mentioned products are consistent with the order prescriptions (65)

Usine, le 16-11-00
L'Agent Réceptionnaire de l'usine / Der Werksachverstaendige / The Work Inspector
C. Bioteau (67)

Acciaierie Valbruna s.p.a.

36100 VICENZA (Italia) – Viale della Scienza, 25 z.i.

ATTESTATO DI CONTROLLO - WERKSZEUGNIS
TEST REPORT - RELEVE DE CONTROLE
EN 10204, 2.2

Avviso spedizione nr. / Lieferanzeige/Packing list/B.L. [2001/ 16525-V]

Certificato nr. / Prüfung/Test/Essai 2117/2001-PF

Conferma ordine nr. / Werks/OurOrder/Ref nr. 01 K 47894

Cliente: / Besteller/ Purchaser/ Client

Ordine nr. / Bestell/Your Order/Commande MATER. X CONF. 01O02072 01 01

Marchio di fabbrica / Zeichen des Lieferwerkes / Trade mark / Sigle de l'usine productrice

Deposito: / Lager/ Depot/ Warehouse ACC. VALBRUNA SPA- MAG. PARMA

Produttore: / Hersteller/Manifactured/Usine productrice ACCIAIERIE VALBRUNA s.p.a.

Tipo di elaborazione: / Erschmelzungsart/Melting process/Mode d'elaboration E + AOD

Punzone del collaudatore: / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'essayeur

Oggetto prove: / Prüfgegenstand/Item inspected/Finissage PELATO SOLUB.

Specifiche: / Anforderungen / Requirements Exigences AISI,,316/316L,A ASTM A276,2000A,S31600/03,A

Qualità: / Werkstoff/Quality//Nuance T.316/316L

Marca : / Markenbezeichnung/Brand/Nuance MVAPML [MAXIVAL]

Punzonatura: / Kennzeichnung/Marking/Marquage

Pos. nr. / Pos.nr. / Item nr.. / Nr. de poste	Oggetto / Gegenstand / Product description / Description du produit	Dimensioni [mm] / Abmessungen / Dimension / Dimension	Lunghezza [mm] / Länge / Length / Longueur	Colata / Schmelze / Heat / Coulée	Pezzi / Stückzahl / Pieces / Pieces	Peso / Gewicht / Weight / Poids	Lotto nr. / Losnr. / Lot nr. / Lot nr.
1	TONDO	100.00		408664			
					[2]	[685]	

Sono state soddisfatte le condizioni richieste
Die gestellten Anforderungen sind lt. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à eté trouvé conforme aux exigences

TEST	Provetta/Probestab Specimen/Eprouvette Largh. diam Spess. Breite Diam. Dicke Width diam. Thickness Larg. diam. Epais mm	Posizione saggio 1) Probelage Location/Emplacement	Snervamento Grenze Yield stress Limite elastique Rp 0.2% N/mm2	Snervamento Grenze Yield stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à la traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement %	E %	Strizione Einschnürung Reduction of area Striction RA %	Resilienza Kerbschlagarbeit Impact value Resilience	
Valori richiesti Anforderungen/Required values Valeurs démandées		min max	205		515		40	50		
A	12.5	L	242		558		68	79		

Colata/heat Schmelze/ coulée 408664

Analisi chimica
Chemische Zusammensetzung/Chemical analysis/Analyse chimique

1)L=longitudinale/längs, Q=trasversale/quer, T= tangenziale/tangential

	C	Si	Mn	Cr	Ni	Mo	P	S	N
min				16.00	10.00	2.00			
max	0.030	1.00	2.00	18.00	14.00	3.00	0.045	0.030	0.10
	0.025	0.57	1.53	17.00	10.45	2.07	0.029	0.025	0.06

Abgeschreckt von
Annealed from
Solubilizzato a ....°C
Hypertrempé à

Allegati:
Anlagen
Enclosure
P.L

Acciaierie Valbruna s.p.a.
COPIA CONFORME ALL'ORIGINALE

Vicenza, 30/10/2001

M. RIZZOTTO

Il collaudatore di stabilimento
der Werkssachverständige/Works inspector/L'agent d'usine

Mod.lart1lwi.ps CER-36 / P

RIAL VACUUM S.p.A.

Via Tito ed Ettore Manzini, 7/A - Località Scarzara - 43040 PARMA - Italia Tel. 0521.949311 - Fax 0521.949300

CERTIFICATO DI TENUTA A ELIO
CERTIFICAT D'ETANCHEITE' A L'HELIUM
HELIUM LEAK TEST CERTIFICATE
BESCHEINIGUNG ÜBER DICHTIGKEITSPRÜFUNG

2672

CLIENTE / CLIENT / CUSTOMER / KUNDE	ORD. CLIENTE / CDE CLIENT / CUST. ORDER / KUNDENBEST.
AUSALDO S.P.A	N° ASG\840 DEL 02/08/02
DESCRIZIONE / DESIGNATION / DESCRIPTION / BEZEICHNUNG	RIF. RIAL / REF. RIAL / RIAL CODE / RIAL REFERENZ
TUBO LINEE M1-M2 LHCMB S0100	
N° DI SERIE / N° D'ORDRE / SERIAL NR / SERIE NUMMER	RIF. CLIENTE / REF. CLIENT / CUSTOMER REF. / KUNDENREF.

☐ TRATTAMENTO RIAL U.H.V. PROCEDURE RIAL U.H.V. RIAL U.H.V. PROCEDURE RIAL U.H.V. VERFAHREN	N. SLT 1	ALTRI TRATTAMENTI CLN 3 AUTRE PROCEDURE OTHER PROCEDURE ANDERE VERFAHREN

— CERCAFUGHE / DETECTEUR DE FUITE / LEAK DETECTOR / DEEKDETEKTOR: ALCATEL TYPE ASM NR. 51

— CLASSE DI PROVA / CLASSE D'ESSAI / TEST CLASS / PRÜFKLASSE

☐ A 3×10^{-8} atm. cm^3/sec.

☐ B 3×10^{-8} atm. cm^3/sec.

- CON DECAPPAGGIO E TRATTAMENTO BIANCO
- AVEC DECAPAGE ET TRAITEMENT BLANC
- WITH PICKLING AND NUCLEAR CLEANLINESS
- MIT BEIZEN BZW UHV-REINIGUNG

☒ C 1×10^{-9} atm. cm^3/sec.

- CON RISCALDAMENTO A 130° C
- AVEC ETOUVAGE A 130° C
- WITH BACKING AT 130° C
- AUFHEIZUNG BIS 130° C

☐ REGISTRAZIONE DELLA PROVA
ENREGISTREMENT DE L'ESSAI
TEST RECORDING
AUTOM. PRÜFEINTRAGUNG

COMMENTI / COMMENTAIRES / COMMENTS / BEMERKUNG

RISULTATI DELLA PROVA / RESULTATS DE L'ESSAI / TEST RESULTS / VERSUCHSERGEBNISSE:

N. DI PEZZI PROVATI / N. DE PIECES TESTEES / N. OF PARTS TESTED / GEPRÜFTE TEILANZAHL: 1

N. DI PEZZI ACCETTATI / N. DE PIECES ACCEPTES / N. OF RECEIPT PARTS / ANGENOMME TEILANZAHL: 1

DATA / DATE / DATE / DATUM 3/10/02

IL CONTROLLORE / LE CONTROLLEUR / THE CONTROLLER / DER PRÜFER Zoglietti Yuri

RIAL VACUUM S.p.A.

Via Tito ed Ettore Manzini, 7/A - Località Scarzara - 43040 PARMA - Italia Tel. 0521.949311 - Fax 0521.949300

CERTIFICATO DI TENUTA A ELIO
CERTIFICAT D'ETANCHEITE' A L'HELIUM
HELIUM LEAK TEST CERTIFICATE
BESCHEINIGUNG ÜBER DICHTIGKEITSPRÜFUNG

2679

CLIENTE / CLIENT / CUSTOMER / KUNDE	ORD. CLIENTE / CDE CLIENT / CUST. ORDER / KUNDENBEST.
Ansaldo S.P.A	N° 459\840 2/08/2002
DESCRIZIONE / DESIGNATION / DESCRIPTION / BEZEICHNUNG Manicotto Flessibile LHCDECMA0040	RIF. RIAL / REF. RIAL / RIAL CODE / RIAL REFERENZ
N° DI SERIE / N° D'ORDRE / SERIAL NR / SERIE NUMMER	RIF. CLIENTE / REF. CLIENT / CUSTOMER REF. / KUNDENREF.

☐ TRATTAMENTO RIAL U.H.V. PROCEDURE RIAL U.H.V. RIAL U.H.V. PROCEDURE RIAL U.H.V. VERFAHREN	N. SLT1	ALTRI TRATTAMENTI CLN 3 AUTRE PROCEDURE OTHER PROCEDURE ANDERE VERFAHREN

— CERCAFUGHE / DETECTEUR DE FUITE / LEAK DETECTOR / DEEKDETEKTOR: ALCATEL TYPE ASM NR. 51

— CLASSE DI PROVA / CLASSE D'ESSAI / TEST CLASS / PRÜFKLASSE

☐ A 3×10^{-8} atm. cm^3/sec.

☐ B 3×10^{-8} atm. cm^3/sec.
- CON DECAPPAGGIO E TRATTAMENTO BIANCO
- AVEC DECAPAGE ET TRAITEMENT BLANC
- WITH PICKLING AND NUCLEAR CLEANLINESS
- MIT BEIZEN BZW UHV-REINIGUNG

☒ C 1×10^{-9} atm. cm^3/sec.
- CON RISCALDAMENTO A 130° C
- AVEC ETOUVAGE A 130° C
- WITH BACKING AT 130° C
- AUFHEIZUNG BIS 130° C

☐ REGISTRAZIONE DELLA PROVA
ENREGISTREMENT DE L'ESSAI
TEST RECORDING
AUTOM. PRÜFEINTRAGUNG

COMMENTI / COMMENTAIRES / COMMENTS / BEMERKUNG

RISULTATI DELLA PROVA / RESULTATS DE L'ESSAI / TEST RESULTS / VERSUCHSERGEBNISSE:

N. DI PEZZI PROVATI / N. DE PIECES TESTEES / N. OF PARTS TESTED / GEPRÜFTE TEILANZAHL: 2

N. DI PEZZI ACCETTATI / N. DE PIECES ACCEPTES / N. OF RECEIPT PARTS / ANGENOMME TEILANZAHL: 2

DATA / DATE / DATE / DATUM 3/10/2002

IL CONTROLLORE / LE CONTROLLEUR
THE CONTROLLER / DER PRÜFER

RIAL VACUUM S.p.A.

Via Tito ed Ettore Manzini, 7/A - Località Scarzara - 43040 PARMA - Italia Tel. 0521.949311 - Fax 0521.949300

CERTIFICATO DI TENUTA A ELIO
CERTIFICAT D'ETANCHEITE' A L'HELIUM
HELIUM LEAK TEST CERTIFICATE
BESCHEINIGUNG ÜBER DICHTIGKEITSPRÜFUNG

2673

CLIENTE / CLIENT / CUSTOMER / KUNDE	ORD. CLIENTE / CDE CLIENT / CUST. ORDER / KUNDENBEST.
AUSALDO S.P.A	N° ASG\840 DEL 2\08\02
DESCRIZIONE / DESIGNATION / DESCRIPTION / BEZEICHNUNG: COMP. DI ESTREMITA x LINEA N LHCMB 50245	RIF. RIAL / REF. RIAL / RIAL CODE / RIAL REFERENZ
N° DI SERIE / N° D'ORDRE / SERIAL NR / SERIE NUMMER	RIF. CLIENTE / REF. CLIENT / CUSTOMER REF. / KUNDENREF.

☐ TRATTAMENTO RIAL U.H.V. / PROCEDURE RIAL U.H.V. / RIAL U.H.V. PROCEDURE / RIAL U.H.V. VERFAHREN — N. SLT 1

ALTRI TRATTAMENTI CLU3
AUTRE PROCEDURE
OTHER PROCEDURE
ANDERE VERFAHREN

— CERCAFUGHE / DETECTEUR DE FUITE / LEAK DETECTOR / DEEKDETEKTOR: ALCATEL TYPE ASM NR. 51

— CLASSE DI PROVA / CLASSE D'ESSAI / TEST CLASS / PRÜFKLASSE

☐ A 3×10^{-8} atm. cm^3/sec.

☐ B 3×10^{-8} atm. cm^3/sec.
- CON DECAPPAGGIO E TRATTAMENTO BIANCO
- AVEC DECAPAGE ET TRAITEMENT BLANC
- WITH PICKLING AND NUCLEAR CLEANLINESS
- MIT BEIZEN BZW UHV-REINIGUNG

☒ C 1×10^{-9} atm. cm^3/sec.
- CON RISCALDAMENTO A 130° C
- AVEC ETOUVAGE A 130° C
- WITH BACKING AT 130° C
- AUFHEIZUNG BIS 130° C

☐ REGISTRAZIONE DELLA PROVA / ENREGISTREMENT DE L'ESSAI / TEST RECORDING / AUTOM. PRÜFEINTRAGUNG

COMMENTI / COMMENTAIRES / COMMENTS / BEMERKUNG

RISULTATI DELLA PROVA / RESULTATS DE L'ESSAI / TEST RESULTS / VERSUCHSERGEBNISSE:

N. DI PEZZI PROVATI / N. DE PIECES TESTEES / N. OF PARTS TESTED / GEPRÜFTE TEILANZAHL: 1

N. DI PEZZI ACCETTATI / N. DE PIECES ACCEPTES / N. OF RECEIPT PARTS / ANGENOMME TEILANZAHL: 1

DATA / DATE / DATE / DATUM 3\10\2002

IL CONTROLLORE / LE CONTROLLEUR / THE CONTROLLER / DER PRÜFER Baglietti Piero

RIAL VACUUM S.p.A.

Via Tito ed Ettore Manzini, 7/A - Località Scarzara - 43040 PARMA - Italia Tel. 0521.949311 - Fax 0521.949300

CERTIFICATO DI TENUTA A ELIO
CERTIFICAT D'ETANCHEITE' A L'HELIUM
HELIUM LEAK TEST CERTIFICATE
BESCHEINIGUNG ÜBER DICHTIGKEITSPRÜFUNG

2677

CLIENTE / CLIENT / CUSTOMER / KUNDE	ORD. CLIENTE / CDE CLIENT / CUST. ORDER / KUNDENBEST.
Ansaldo S.P.A	N° ASG\840 DEL 2\08\2002
DESCRIZIONE / DESIGNATION / DESCRIPTION / BEZEICHNUNG CHIUSURA LINEA M-3 LHCMB S0180	RIF. RIAL / REF. RIAL / RIAL CODE / RIAL REFERENZ
N° DI SERIE / N° D'ORDRE / SERIAL NR / SERIE NUMMER	RIF. CLIENTE / REF. CLIENT / CUSTOMER REF. / KUNDENREF.

☐ TRATTAMENTO RIAL U.H.V. PROCEDURE RIAL U.H.V. RIAL U.H.V. PROCEDURE RIAL U.H.V. VERFAHREN	N. SLT 1	ALTRI TRATTAMENTI CLN 3 AUTRE PROCEDURE OTHER PROCEDURE ANDERE VERFAHREN

— CERCAFUGHE / DETECTEUR DE FUITE / LEAK DETECTOR / DEEKDETEKTOR: ALCATEL TYPE ASM NR. 51

— CLASSE DI PROVA / CLASSE D'ESSAI / TEST CLASS / PRÜFKLASSE

☐ A 3×10^{-8} atm. cm^3/sec.

☐ B 3×10^{-8} atm. cm^3/sec.
- CON DECAPPAGGIO E TRATTAMENTO BIANCO
- AVEC DECAPAGE ET TRAITEMENT BLANC
- WITH PICKLING AND NUCLEAR CLEANLINESS
- MIT BEIZEN BZW UHV-REINIGUNG

☒ C 1×10^{-9} atm. cm^3/sec.
- CON RISCALDAMENTO A 130° C
- AVEC ETOUVAGE A 130° C
- WITH BACKING AT 130° C
- AUFHEIZUNG BIS 130° C

☐ REGISTRAZIONE DELLA PROVA
ENREGISTREMENT DE L'ESSAI
TEST RECORDING
AUTOM. PRÜFEINTRAGUNG

COMMENTI / COMMENTAIRES / COMMENTS / BEMERKUNG

RISULTATI DELLA PROVA / RESULTATS DE L'ESSAI / TEST RESULTS / VERSUCHSERGEBNISSE:

N. DI PEZZI PROVATI / N. DE PIECES TESTEES / N. OF PARTS TESTED / GEPRÜFTE TEILANZAHL: 1

N. DI PEZZI ACCETTATI / N. DE PIECES ACCEPTES / N. OF RECEIPT PARTS / ANGENOMME TEILANZAHL: 1

DATA / DATE / DATE / DATUM 31\10\2002

IL CONTROLLORE / LE CONTROLLEUR / THE CONTROLLER / DER PRÜFER Zaffetti Luca

RIAL VACUUM S.p.A.

Via Tito ed Ettore Manzini, 7/A - Località Scarzara - 43040 PARMA - Italia Tel. 0521.949311 - Fax 0521.949300

CERTIFICATO DI TENUTA A ELIO
CERTIFICAT D'ETANCHEITE' A L'HELIUM
HELIUM LEAK TEST CERTIFICATE
BESCHEINIGUNG ÜBER DICHTIGKEITSPRÜFUNG

2676

CLIENTE / CLIENT / CUSTOMER / KUNDE	ORD. CLIENTE / CDE CLIENT / CUST. ORDER / KUNDENBEST.
Ansaldo S.P.A	N° ASG\840 DEL 2\08\2002
DESCRIZIONE / DESIGNATION / DESCRIPTION / BEZEICHNUNG	RIF. RIAL / REF. RIAL / RIAL CODE / RIAL REFERENZ
Chiusura Linea M1 LHCMB S0179	
N° DI SERIE / N° D'ORDRE / SERIAL NR / SERIE NUMMER	RIF. CLIENTE / REF. CLIENT / CUSTOMER REF. / KUNDENREF.

☐ TRATTAMENTO RIAL U.H.V. PROCEDURE RIAL U.H.V. RIAL U.H.V. PROCEDURE RIAL U.H.V. VERFAHREN	N. SLT 1	ALTRI TRATTAMENTI CLN 3 AUTRE PROCEDURE OTHER PROCEDURE ANDERE VERFAHREN

— CERCAFUGHE / DETECTEUR DE FUITE / LEAK DETECTOR / DEEKDETEKTOR: ALCATE TYPE ASH NR. 51

— CLASSE DI PROVA / CLASSE D'ESSAI / TEST CLASS / PRÜFKLASSE

☐ A 3×10^{-8} atm. cm^3/sec.

☐ B 3×10^{-8} atm. cm^3/sec.

- CON DECAPPAGGIO E TRATTAMENTO BIANCO
- AVEC DECAPAGE ET TRAITEMENT BLANC
- WITH PICKLING AND NUCLEAR CLEANLINESS
- MIT BEIZEN BZW UHV-REINIGUNG

☒ C 1×10^{-9} atm. cm^3/sec.

- CON RISCALDAMENTO A 130° C
- AVEC ETOUVAGE A 130° C
- WITH BACKING AT 130° C
- AUFHEIZUNG BIS 130° C

☐ REGISTRAZIONE DELLA PROVA
ENREGISTREMENT DE L'ESSAI
TEST RECORDING
AUTOM. PRÜFEINTRAGUNG

COMMENTI / COMMENTAIRES / COMMENTS / BEMERKUNG

RISULTATI DELLA PROVA / RESULTATS DE L'ESSAI / TEST RESULTS / VERSUCHSERGEBNISSE:

N. DI PEZZI PROVATI / N. DE PIECES TESTEES / N. OF PARTS TESTED / GEPRÜFTE TEILANZAHL: 1

N. DI PEZZI ACCETTATI / N. DE PIECES ACCEPTES / N. OF RECEIPT PARTS / ANGENOMME TEILANZAHL: 1

DATA / DATE / DATE / DATUM 31\10\2002

IL CONTROLLORE / LE CONTROLLEUR / THE CONTROLLER / DER PRÜFER Esposito Luca

RIAL VACUUM S.p.A.

Via Tito ed Ettore Manzini, 7/A - Località Scarzara - 43040 PARMA - Italia Tel. 0521.949311 - Fax 0521.949300

CERTIFICATO DI TENUTA A ELIO
CERTIFICAT D'ETANCHEITE' A L'HELIUM
HELIUM LEAK TEST CERTIFICATE
BESCHEINIGUNG ÜBER DICHTIGKEITSPRÜFUNG

2675

CLIENTE / CLIENT / CUSTOMER / KUNDE	ORD. CLIENTE / CDE CLIENT / CUST. ORDER / KUNDENBEST.
Ansaldo S.P.A	N° ASG\840 DEL 2\08\2002
DESCRIZIONE / DESIGNATION / DESCRIPTION / BEZEICHNUNG	RIF. RIAL / REF. RIAL / RIAL CODE / RIAL REFERENZ
Tubo di chiusura LHCMB S0184	
N° DI SERIE / N° D'ORDRE / SERIAL NR / SERIE NUMMER	RIF. CLIENTE / REF. CLIENT / CUSTOMER REF. / KUNDENREF.

☐ TRATTAMENTO RIAL U.H.V. PROCEDURE RIAL U.H.V. RIAL U.H.V. PROCEDURE RIAL U.H.V. VERFAHREN	N. SLT 1	ALTRI TRATTAMENTI CLN 3 AUTRE PROCEDURE OTHER PROCEDURE ANDERE VERFAHREN

— CERCAFUGHE / DETECTEUR DE FUITE / LEAK DETECTOR / DEEKDETEKTOR: ALCATEL TYPE ASM NR. 51

— CLASSE DI PROVA / CLASSE D'ESSAI / TEST CLASS / PRÜFKLASSE

☐ A 3×10^{-8} atm. cm^3/sec.

☐ B 3×10^{-8} atm. cm^3/sec.
- CON DECAPPAGGIO E TRATTAMENTO BIANCO
- AVEC DECAPAGE ET TRAITEMENT BLANC
- WITH PICKLING AND NUCLEAR CLEANLINESS
- MIT BEIZEN BZW UHV-REINIGUNG

☒ C 1×10^{-9} atm. cm^3/sec.
- CON RISCALDAMENTO A 130° C
- AVEC ETOUVAGE A 130° C
- WITH BACKING AT 130° C
- AUFHEIZUNG BIS 130° C

☐ REGISTRAZIONE DELLA PROVA
ENREGISTREMENT DE L'ESSAI
TEST RECORDING
AUTOM. PRÜFEINTRAGUNG

COMMENTI / COMMENTAIRES / COMMENTS / BEMERKUNG

RISULTATI DELLA PROVA / RESULTATS DE L'ESSAI / TEST RESULTS / VERSUCHSERGEBNISSE:

N. DI PEZZI PROVATI / N. DE PIECES TESTEES / N. OF PARTS TESTED / GEPRÜFTE TEILANZAHL: 1

N. DI PEZZI ACCETTATI / N. DE PIECES ACCEPTES / N. OF RECEIPT PARTS / ANGENOMME TEILANZAHL: 1

DATA / DATE / DATE / DATUM 3\10\2002

IL CONTROLLORE / LE CONTROLLEUR / THE CONTROLLER / DER PRÜFER Zoplatt Yuri

RIAL VACUUM S.p.A.

Via Tito ed Ettore Manzini, 7/A - Località Scarzara - 43040 PARMA - Italia Tel. 0521.949311 - Fax 0521.949300

CERTIFICATO DI TENUTA A ELIO
CERTIFICAT D'ETANCHEITE' A L'HELIUM
HELIUM LEAK TEST CERTIFICATE
BESCHEINIGUNG ÜBER DICHTIGKEITSPRÜFUNG

2678

CLIENTE / CLIENT / CUSTOMER / KUNDE	ORD. CLIENTE / CDE CLIENT / CUST. ORDER / KUNDENBEST.
Ansaldo S.P.A	N° ASG\840 DEL 2\08\2002
DESCRIZIONE / DESIGNATION / DESCRIPTION / BEZEICHNUNG	RIF. RIAL / REF. RIAL / RIAL CODE / RIAL REFERENZ
Flangia di Chiusura LHCMBS0836	
N° DI SERIE / N° D'ORDRE / SERIAL NR / SERIE NUMMER	RIF. CLIENTE / REF. CLIENT / CUSTOMER REF. / KUNDENREF.

☐ TRATTAMENTO RIAL U.H.V. PROCEDURE RIAL U.H.V. RIAL U.H.V. PROCEDURE RIAL U.H.V. VERFAHREN	N. SLT 1	ALTRI TRATTAMENTI CLV 3 AUTRE PROCEDURE OTHER PROCEDURE ANDERE VERFAHREN

— CERCAFUGHE / DETECTEUR DE FUITE / LEAK DETECTOR / DEEKDETEKTOR: ALCATEL TYPE ASM NR. 51

— CLASSE DI PROVA / CLASSE D'ESSAI / TEST CLASS / PRÜFKLASSE

☐ A 3×10^{-8} atm. cm^3/sec.

☐ B 3×10^{-8} atm. cm^3/sec.
- CON DECAPPAGGIO E TRATTAMENTO BIANCO
- AVEC DECAPAGE ET TRAITEMENT BLANC
- WITH PICKLING AND NUCLEAR CLEANLINESS
- MIT BEIZEN BZW UHV-REINIGUNG

☑ C 1×10^{-9} atm. cm^3/sec.
- CON RISCALDAMENTO A 130° C
- AVEC ETOUVAGE A 130° C
- WITH BACKING AT 130° C
- AUFHEIZUNG BIS 130° C

☐ REGISTRAZIONE DELLA PROVA
ENREGISTREMENT DE L'ESSAI
TEST RECORDING
AUTOM. PRÜFEINTRAGUNG

COMMENTI / COMMENTAIRES / COMMENTS / BEMERKUNG

RISULTATI DELLA PROVA / RESULTATS DE L'ESSAI / TEST RESULTS / VERSUCHSERGEBNISSE:

N. DI PEZZI PROVATI / N. DE PIECES TESTEES / N. OF PARTS TESTED / GEPRÜFTE TEILANZAHL: .....

N. DI PEZZI ACCETTATI / N. DE PIECES ACCEPTES / N. OF RECEIPT PARTS / ANGENOMME TEILANZAHL: .....

DATA / DATE / DATE / DATUM 3\10\2002

IL CONTROLLORE / LE CONTROLLEUR / THE CONTROLLER / DER PRÜFER Gaglietti Yuri

RIAL VACUUM S.p.A.

Via Tito ed Ettore Manzini, 7/A - Località Scarzara - 43040 PARMA - Italia Tel. 0521.949311 - Fax 0521.949300

CERTIFICATO DI TENUTA A ELIO
CERTIFICAT D'ETANCHEITE' A L'HELIUM
HELIUM LEAK TEST CERTIFICATE
BESCHEINIGUNG ÜBER DICHTIGKEITSPRÜFUNG

2693

CLIENTE / CLIENT / CUSTOMER / KUNDE	ORD. CLIENTE / CDE CLIENT / CUST. ORDER / KUNDENBEST.
AUSALdo S.P.A	N° ASG\840 02\08\02
DESCRIZIONE / DESIGNATION / DESCRIPTION / BEZEICHNUNG COMP. DI ESTREMITA' LINEA U LHCMB S0245	RIF. RIAL / REF. RIAL / RIAL CODE / RIAL REFERENZ
N° DI SERIE / N° D'ORDRE / SERIAL NR / SERIE NUMMER	RIF. CLIENTE / REF. CLIENT / CUSTOMER REF. / KUNDENREF.

☐ TRATTAMENTO RIAL U.H.V. PROCEDURE RIAL U.H.V. RIAL U.H.V. PROCEDURE RIAL U.H.V. VERFAHREN	N. SLT 1	ALTRI TRATTAMENTI CLN 3 AUTRE PROCEDURE OTHER PROCEDURE ANDERE VERFAHREN

— CERCAFUGHE / DETECTEUR DE FUITE / LEAK DETECTOR / DEEKDETEKTOR: ALCATEL TYPE ASM NR. 51

— CLASSE DI PROVA / CLASSE D'ESSAI / TEST CLASS / PRÜFKLASSE

☐ A 3×10^{-8} atm. cm^3/sec.

☐ B 3×10^{-8} atm. cm^3/sec.
- CON DECAPPAGGIO E TRATTAMENTO BIANCO
- AVEC DECAPAGE ET TRAITEMENT BLANC
- WITH PICKLING AND NUCLEAR CLEANLINESS
- MIT BEIZEN BZW UHV-REINIGUNG

☒ C 1×10^{-9} atm. cm^3/sec.
- CON RISCALDAMENTO A 130° C
- AVEC ETOUVAGE A 130° C
- WITH BACKING AT 130° C
- AUFHEIZUNG BIS 130° C

☐ REGISTRAZIONE DELLA PROVA
ENREGISTREMENT DE L'ESSAI
TEST RECORDING
AUTOM. PRÜFEINTRAGUNG

COMMENTI / COMMENTAIRES / COMMENTS / BEMERKUNG

RISULTATI DELLA PROVA / RESULTATS DE L'ESSAI / TEST RESULTS / VERSUCHSERGEBNISSE:

N. DI PEZZI PROVATI / N. DE PIECES TESTEES / N. OF PARTS TESTED / GEPRÜFTE TEILANZAHL: 2

N. DI PEZZI ACCETTATI / N. DE PIECES ACCEPTES / N. OF RECEIPT PARTS / ANGENOMME TEILANZAHL: 2

DATA / DATE / DATE / DATUM 7/11/02

IL CONTROLLORE / LE CONTROLLEUR / THE CONTROLLER / DER PRÜFER Egletti Piero

RIAL VACUUM S.p.A.

Via Tito ed Ettore Manzini, 7/A - Località Scarzara - 43040 PARMA - Italia Tel. 0521.949311 - Fax 0521.949300

CERTIFICATO DI TENUTA A ELIO
CERTIFICAT D'ETANCHEITE' A L'HELIUM
HELIUM LEAK TEST CERTIFICATE
BESCHEINIGUNG ÜBER DICHTIGKEITSPRÜFUNG

2694

CLIENTE / CLIENT / CUSTOMER / KUNDE	ORD. CLIENTE / CDE CLIENT / CUST. ORDER / KUNDENBEST.
Ansaldo S.P.A	N° ASG/840 02\08\02
DESCRIZIONE / DESIGNATION / DESCRIPTION / BEZEICHNUNG	RIF. RIAL / REF. RIAL / RIAL CODE / RIAL REFERENZ
Assemblaggio Tubo LHCMB	
S0094	
N° DI SERIE / N° D'ORDRE / SERIAL NR / SERIE NUMMER	RIF. CLIENTE / REF. CLIENT / CUSTOMER REF. / KUNDENREF.

☐ TRATTAMENTO RIAL U.H.V. PROCEDURE RIAL U.H.V. RIAL U.H.V. PROCEDURE RIAL U.H.V. VERFAHREN	N. SLT 1	ALTRI TRATTAMENTI CLU 3 AUTRE PROCEDURE OTHER PROCEDURE ANDERE VERFAHREN

— CERCAFUGHE / DETECTEUR DE FUITE / LEAK DETECTOR / DEEKDETEKTOR: ALCATEL TYPE ASM NR. 51

— CLASSE DI PROVA / CLASSE D'ESSAI / TEST CLASS / PRÜFKLASSE

☐ A 3×10^{-8} atm. cm^3/sec.

☐ B 3×10^{-8} atm. cm^3/sec.
- CON DECAPPAGGIO E TRATTAMENTO BIANCO
- AVEC DECAPAGE ET TRAITEMENT BLANC
- WITH PICKLING AND NUCLEAR CLEANLINESS
- MIT BEIZEN BZW UHV-REINIGUNG

☒ C 1×10^{-9} atm. cm^3/sec.
- CON RISCALDAMENTO A 130° C
- AVEC ETOUVAGE A 130° C
- WITH BACKING AT 130° C
- AUFHEIZUNG BIS 130° C

☐ REGISTRAZIONE DELLA PROVA
ENREGISTREMENT DE L'ESSAI
TEST RECORDING
AUTOM. PRÜFEINTRAGUNG

COMMENTI / COMMENTAIRES / COMMENTS / BEMERKUNG

RISULTATI DELLA PROVA / RESULTATS DE L'ESSAI / TEST RESULTS / VERSUCHSERGEBNISSE:

N. DI PEZZI PROVATI / N. DE PIECES TESTEES / N. OF PARTS TESTED / GEPRÜFTE TEILANZAHL: 2

N. DI PEZZI ACCETTATI / N. DE PIECES ACCEPTES / N. OF RECEIPT PARTS / ANGENOMME TEILANZAHL: 2

DATA / DATE / DATE / DATUM 7/11/02

IL CONTROLLORE / LE CONTROLLEUR / THE CONTROLLER / DER PRÜFER Eglietti Piero

RIAL VACUUM S.p.A.

Via Tito ed Ettore Manzini, 7/A - Località Scarzara - 43040 PARMA - Italia Tel. 0521.949311 - Fax 0521.949300

CERTIFICATO DI TENUTA A ELIO
CERTIFICAT D'ETANCHEITE' A L'HELIUM
HELIUM LEAK TEST CERTIFICATE
BESCHEINIGUNG ÜBER DICHTIGKEITSPRÜFUNG

2695

CLIENTE / CLIENT / CUSTOMER / KUNDE	ORD. CLIENTE / CDE CLIENT / CUST. ORDER / KUNDENBEST.
Ausaldo S.P.A	N° A5G/840 02/08/02
DESCRIZIONE / DESIGNATION / DESCRIPTION / BEZEICHNUNG	RIF. RIAL / REF. RIAL / RIAL CODE / RIAL REFERENZ
Tubo LINEA M1 - M2 LHCMB S0100	
N° DI SERIE / N° D'ORDRE / SERIAL NR / SERIE NUMMER	RIF. CLIENTE / REF. CLIENT / CUSTOMER REF. / KUNDENREF.

☐ TRATTAMENTO RIAL U.H.V. PROCEDURE RIAL U.H.V. RIAL U.H.V. PROCEDURE RIAL U.H.V. VERFAHREN	N. SLT 1	ALTRI TRATTAMENTI CLN 3 AUTRE PROCEDURE OTHER PROCEDURE ANDERE VERFAHREN

— CERCAFUGHE / DETECTEUR DE FUITE / LEAK DETECTOR / DEEKDETEKTOR: ALCATEL TYPE ASM NR. 51

— CLASSE DI PROVA / CLASSE D'ESSAI / TEST CLASS / PRÜFKLASSE

☐ A 3×10^{-8} atm. cm^3/sec.

☐ B 3×10^{-8} atm. cm^3/sec.
- CON DECAPPAGGIO E TRATTAMENTO BIANCO
- AVEC DECAPAGE ET TRAITEMENT BLANC
- WITH PICKLING AND NUCLEAR CLEANLINESS
- MIT BEIZEN BZW UHV-REINIGUNG

☒ C 1×10^{-9} atm. cm^3/sec.
- CON RISCALDAMENTO A 130° C
- AVEC ETOUVAGE A 130° C
- WITH BACKING AT 130° C
- AUFHEIZUNG BIS 130° C

☐ REGISTRAZIONE DELLA PROVA
ENREGISTREMENT DE L'ESSAI
TEST RECORDING
AUTOM. PRÜFEINTRAGUNG

COMMENTI / COMMENTAIRES / COMMENTS / BEMERKUNG

RISULTATI DELLA PROVA / RESULTATS DE L'ESSAI / TEST RESULTS / VERSUCHSERGEBNISSE:

N. DI PEZZI PROVATI / N. DE PIECES TESTEES / N. OF PARTS TESTED / GEPRÜFTE TEILANZAHL: 8

N. DI PEZZI ACCETTATI / N. DE PIECES ACCEPTES / N. OF RECEIPT PARTS / ANGENOMME TEILANZAHL: 8

DATA / DATE / DATE / DATUM 7/11/02

IL CONTROLLORE / LE CONTROLLEUR / THE CONTROLLER / DER PRÜFER Baldelli Luca

RIAL VACUUM S.p.A.

Via Tito ed Ettore Manzini, 7/A - Località Scarzara - 43040 PARMA - Italia Tel. 0521.949311 - Fax 0521.949300

CERTIFICATO DI TENUTA A ELIO
CERTIFICAT D'ETANCHEITE' A L'HELIUM
HELIUM LEAK TEST CERTIFICATE
BESCHEINIGUNG ÜBER DICHTIGKEITSPRÜFUNG

2696

CLIENTE / CLIENT / CUSTOMER / KUNDE	ORD. CLIENTE / CDE CLIENT / CUST. ORDER / KUNDENBEST.
Ausaldo S.P.A	N° ASG/840 02/08/02
DESCRIZIONE / DESIGNATION / DESCRIPTION / BEZEICHNUNG: Tubo di Chiusura LHCMB 30184	RIF. RIAL / REF. RIAL / RIAL CODE / RIAL REFERENZ
N° DI SERIE / N° D'ORDRE / SERIAL NR / SERIE NUMMER	RIF. CLIENTE / REF. CLIENT / CUSTOMER REF. / KUNDENREF.

☐ TRATTAMENTO RIAL U.H.V. PROCEDURE RIAL U.H.V. RIAL U.H.V. PROCEDURE RIAL U.H.V. VERFAHREN	N. SLT 1	ALTRI TRATTAMENTI CLN 3 AUTRE PROCEDURE OTHER PROCEDURE ANDERE VERFAHREN

— CERCAFUGHE / DETECTEUR DE FUITE / LEAK DETECTOR / DEEKDETEKTOR: ALCATEL TYPE ASM NR. 51

— CLASSE DI PROVA / CLASSE D'ESSAI / TEST CLASS / PRÜFKLASSE

☐ A 3×10^{-8} atm. cm^3/sec.

☐ B 3×10^{-8} atm. cm^3/sec.
- CON DECAPPAGGIO E TRATTAMENTO BIANCO
- AVEC DECAPAGE ET TRAITEMENT BLANC
- WITH PICKLING AND NUCLEAR CLEANLINESS
- MIT BEIZEN BZW UHV-REINIGUNG

☒ C 1×10^{-9} atm. cm^3/sec.
- CON RISCALDAMENTO A 130° C
- AVEC ETOUVAGE A 130° C
- WITH BACKING AT 130° C
- AUFHEIZUNG BIS 130° C

☐ REGISTRAZIONE DELLA PROVA
ENREGISTREMENT DE L'ESSAI
TEST RECORDING
AUTOM. PRÜFEINTRAGUNG

COMMENTI / COMMENTAIRES / COMMENTS / BEMERKUNG

RISULTATI DELLA PROVA / RESULTATS DE L'ESSAI / TEST RESULTS / VERSUCHSERGEBNISSE:

N. DI PEZZI PROVATI / N. DE PIECES TESTEES / N. OF PARTS TESTED / GEPRÜFTE TEILANZAHL: 2

N. DI PEZZI ACCETTATI / N. DE PIECES ACCEPTES / N. OF RECEIPT PARTS / ANGENOMME TEILANZAHL: 2

DATA / DATE / DATE / DATUM 7/11/02

IL CONTROLLORE / LE CONTROLLEUR / THE CONTROLLER / DER PRÜFER Gabriotti Piero

RIAL VACUUM S.p.A.

Via Tito ed Ettore Manzini, 7/A - Località Scarzara - 43040 PARMA - Italia Tel. 0521.949311 - Fax 0521.949300

CERTIFICATO DI TENUTA A ELIO
CERTIFICAT D'ETANCHEITE' A L'HELIUM
HELIUM LEAK TEST CERTIFICATE
BESCHEINIGUNG ÜBER DICHTIGKEITSPRÜFUNG

2697

CLIENTE / CLIENT / CUSTOMER / KUNDE	ORD. CLIENTE / CDE CLIENT / CUST. ORDER / KUNDENBEST.
Ausaldo SPA	N° ASG/840 02/08/02
DESCRIZIONE / DESIGNATION / DESCRIPTION / BEZEICHNUNG	RIF. RIAL / REF. RIAL / RIAL CODE / RIAL REFERENZ
FLANGIA di Chiusura LHCMB S0836	
N° DI SERIE / N° D'ORDRE / SERIAL NR / SERIE NUMMER	RIF. CLIENTE / REF. CLIENT / CUSTOMER REF. / KUNDENREF.

☐ TRATTAMENTO RIAL U.H.V.
PROCEDURE RIAL U.H.V.
RIAL U.H.V. PROCEDURE
RIAL U.H.V. VERFAHREN
N. SLT 1

ALTRI TRATTAMENTI CLN 3
AUTRE PROCEDURE
OTHER PROCEDURE
ANDERE VERFAHREN

— CERCAFUGHE / DETECTEUR DE FUITE / LEAK DETECTOR / DEEKDETEKTOR: ALCATEL TYPE ASM NR. 52

— CLASSE DI PROVA / CLASSE D'ESSAI / TEST CLASS / PRÜFKLASSE

☐ A 3×10^{-8} atm. cm^3/sec.

☐ B 3×10^{-8} atm. cm^3/sec.
- CON DECAPPAGGIO E TRATTAMENTO BIANCO
- AVEC DECAPAGE ET TRAITEMENT BLANC
- WITH PICKLING AND NUCLEAR CLEANLINESS
- MIT BEIZEN BZW UHV-REINIGUNG

☒ C 1×10^{-9} atm. cm^3/sec.
- CON RISCALDAMENTO A 130° C
- AVEC ETOUVAGE A 130° C
- WITH BACKING AT 130° C
- AUFHEIZUNG BIS 130° C

☐ REGISTRAZIONE DELLA PROVA
ENREGISTREMENT DE L'ESSAI
TEST RECORDING
AUTOM. PRÜFEINTRAGUNG

COMMENTI / COMMENTAIRES / COMMENTS / BEMERKUNG

RISULTATI DELLA PROVA / RESULTATS DE L'ESSAI / TEST RESULTS / VERSUCHSERGEBNISSE:

N. DI PEZZI PROVATI / N. DE PIECES TESTEES / N. OF PARTS TESTED / GEPRÜFTE TEILANZAHL: 2

N. DI PEZZI ACCETTATI / N. DE PIECES ACCEPTES / N. OF RECEIPT PARTS / ANGENOMME TEILANZAHL: 2

DATA / DATE / DATE / DATUM 7/11/02

IL CONTROLLORE / LE CONTROLLEUR / THE CONTROLLER / DER PRÜFER Scafetti Luca

RIAL VACUUM S.p.A.

Via Tito ed Ettore Manzini, 7/A - Località Scarzara - 43040 PARMA - Italia Tel. 0521.949311 - Fax 0521.949300

CERTIFICATO DI TENUTA A ELIO
CERTIFICAT D'ETANCHEITE' A L'HELIUM
HELIUM LEAK TEST CERTIFICATE
BESCHEINIGUNG ÜBER DICHTIGKEITSPRÜFUNG

2698

CLIENTE / CLIENT / CUSTOMER / KUNDE	ORD. CLIENTE / CDE CLIENT / CUST. ORDER / KUNDENBEST.
Ausaldo S.P.A	N° ASG/840 02/08/02
DESCRIZIONE / DESIGNATION / DESCRIPTION / BEZEICHNUNG	RIF. RIAL / REF. RIAL / RIAL CODE / RIAL REFERENZ
Chiusura Linea M1 LHCMB 5017 9	
N° DI SERIE / N° D'ORDRE / SERIAL NR / SERIE NUMMER	RIF. CLIENTE / REF. CLIENT / CUSTOMER REF. / KUNDENREF.

☐ TRATTAMENTO RIAL U.H.V. PROCEDURE RIAL U.H.V. RIAL U.H.V. PROCEDURE RIAL U.H.V. VERFAHREN	N. SLT1	ALTRI TRATTAMENTI CLV 3 AUTRE PROCEDURE OTHER PROCEDURE ANDERE VERFAHREN

— CERCAFUGHE / DETECTEUR DE FUITE / LEAK DETECTOR / DEEKDETEKTOR: ALCATEL TYPE ASM NR. 51

— CLASSE DI PROVA / CLASSE D'ESSAI / TEST CLASS / PRÜFKLASSE

☐ A 3×10^{-8} atm. $cm^3/sec.$

☐ B 3×10^{-8} atm. $cm^3/sec.$

- CON DECAPPAGGIO E TRATTAMENTO BIANCO
- AVEC DECAPAGE ET TRAITEMENT BLANC
- WITH PICKLING AND NUCLEAR CLEANLINESS
- MIT BEIZEN BZW UHV-REINIGUNG

☒ C 1×10^{-9} atm. $cm^3/sec.$

- CON RISCALDAMENTO A 130° C
- AVEC ETOUVAGE A 130° C
- WITH BACKING AT 130° C
- AUFHEIZUNG BIS 130° C

☐ REGISTRAZIONE DELLA PROVA
ENREGISTREMENT DE L'ESSAI
TEST RECORDING
AUTOM. PRÜFEINTRAGUNG

COMMENTI / COMMENTAIRES / COMMENTS / BEMERKUNG

RISULTATI DELLA PROVA / RESULTATS DE L'ESSAI / TEST RESULTS / VERSUCHSERGEBNISSE:

N. DI PEZZI PROVATI / N. DE PIECES TESTEES / N. OF PARTS TESTED / GEPRÜFTE TEILANZAHL: 2

N. DI PEZZI ACCETTATI / N. DE PIECES ACCEPTES / N. OF RECEIPT PARTS / ANGENOMME TEILANZAHL: 2

DATA / DATE / DATE / DATUM 7/11/02

IL CONTROLLORE / LE CONTROLLEUR / THE CONTROLLER / DER PRÜFER Esplati Yuri

RIAL VACUUM S.p.A.

Via Tito ed Ettore Manzini, 7/A - Località Scarzara - 43040 PARMA - Italia Tel. 0521.949311 - Fax 0521.949300

CERTIFICATO DI TENUTA A ELIO
CERTIFICAT D'ETANCHEITE' A L'HELIUM
HELIUM LEAK TEST CERTIFICATE
BESCHEINIGUNG ÜBER DICHTIGKEITSPRÜFUNG

2700

CLIENTE / CLIENT / CUSTOMER / KUNDE	ORD. CLIENTE / CDE CLIENT / CUST. ORDER / KUNDENBEST.
ANSALDO S.P.A	N° ASG\840 02/08/02
DESCRIZIONE / DESIGNATION / DESCRIPTION / BEZEICHNUNG	RIF. RIAL / REF. RIAL / RIAL CODE / RIAL REFERENZ
CHIUSURA LINEA M 3 LHCMB SO1808	
N° DI SERIE / N° D'ORDRE / SERIAL NR / SERIE NUMMER	RIF. CLIENTE / REF. CLIENT / CUSTOMER REF. / KUNDENREF.

☐ TRATTAMENTO RIAL U.H.V. PROCEDURE RIAL U.H.V. RIAL U.H.V. PROCEDURE RIAL U.H.V. VERFAHREN	N. SLT1	ALTRI TRATTAMENTI CLU 3 AUTRE PROCEDURE OTHER PROCEDURE ANDERE VERFAHREN

— CERCAFUGHE / DETECTEUR DE FUITE / LEAK DETECTOR / DEEKDETEKTOR: ALCATEL TYPE ASM NR. 51

— CLASSE DI PROVA / CLASSE D'ESSAI / TEST CLASS / PRÜFKLASSE

☐ A 3×10^{-8} atm. cm^3/sec.

☐ B 3×10^{-8} atm. cm^3/sec.
- CON DECAPPAGGIO E TRATTAMENTO BIANCO
- AVEC DECAPAGE ET TRAITEMENT BLANC
- WITH PICKLING AND NUCLEAR CLEANLINESS
- MIT BEIZEN BZW UHV-REINIGUNG

☒ C 1×10^{-9} atm. cm^3/sec.
- CON RISCALDAMENTO A 130° C
- AVEC ETOUVAGE A 130° C
- WITH BACKING AT 130° C
- AUFHEIZUNG BIS 130° C

☐ REGISTRAZIONE DELLA PROVA
ENREGISTREMENT DE L'ESSAI
TEST RECORDING
AUTOM. PRÜFEINTRAGUNG

COMMENTI / COMMENTAIRES / COMMENTS / BEMERKUNG

RISULTATI DELLA PROVA / RESULTATS DE L'ESSAI / TEST RESULTS / VERSUCHSERGEBNISSE:

N. DI PEZZI PROVATI / N. DE PIECES TESTEES / N. OF PARTS TESTED / GEPRÜFTE TEILANZAHL: .....

N. DI PEZZI ACCETTATI / N. DE PIECES ACCEPTES / N. OF RECEIPT PARTS / ANGENOMME TEILANZAHL: .....

DATA / DATE / DATE / DATUM 7/11/02

IL CONTROLLORE / LE CONTROLLEUR / THE CONTROLLER / DER PRÜFER Eglotti Yuri

ZAMBETTI-LUMINA SPA

Zambetti e Lumina S.p.a.

SISTEMA QUALITA'
QUALITY SYSTEM

ATC N° 1032/001/2001

COMM. *Job* 1032 / 0000

DATA *Date* 26/11/2001

ATTESTATO DI CONFORMITA'
Certificate of compliance

CLIENTE *Customer*	ORDINE *Order*	DEL *Of*	COMM. CLIENTE *Customer's job*
ANSALDO SUPERCOND. S.p.A.	157	14/05/2001	F10209EM

OGGETTO *Subject*	DISEGNO RIF. *Ref. Drw*	FOGLIO *Sheet*	DI *Of*
PIASTRE DI TESTA	VEDI SOTTO	1	1

RIFERIMENTO ORDINE *Order reference* POS. *Item*	DISEGNO *Drawing*	DENOMINAZIONE *Item description*	Quantità *Quantity*	Documentazione rilasciata *Delivered documentation*
3	683RM08455 REV.F	PIASTRA DI TESTA L.C.	7	
5	683RM08456 REV.F	PIASTRA DI TESTA L.O.C.	7	

SI CERTIFICA CHE I PARTICOLARI SOPRACITATI SONO STATI COSTRUITI IN CONFORMITA' AI DISEGNI E ALLE SPECIFICHE RICHIAMATE IN ORDINE.
WE CERTIFY THAT THE ABOVEMENTIONED PARTS HAVE BEEN BUILD AND TESTED IN CONFORMITY WITH SPECIFICATIONS AND DRAWING AS IN ORDER

Note
Remarks

Operatore *Operator*	Enti collaudatori *Inspect. officials*	Ispettore cliente *Customer inspect.*	Capo collaudo *Inspect. Chief*
			Zambetti e Lumina S.p.A. Walter Spalletti Level 2 PT-UT-MT-PT-VT UNI EN 473/SNT-TC-1A

ZAMBETTI-LUMINA SPA

Zambetti e Lumina S.p.a.	SISTEMA QUALITA' *QUALITY SYSTEM*	ATC N° 1032/001/2002
	ATTESTATO DI CONFORMITA' *Certificate of compliance*	COMM. *Job* 1032 / 0000
		DATA *Date* 07/03/2002

CLIENTE *Customer*	ORDINE *Order*	DEL *Of*	COMM. CLIENTE *Customer's job*
ANSALDO SUPERCOND. S.p.A.	157	14/05/2001	F10209EM
OGGETTO *Subject*	**DISEGNO RIF.** *Ref. Drw*		**FOGLIO** *Sheet* 1 **DI** *Of* 1
PIASTRE DI TESTA	VEDI SOTTO		

RIFERIMENTO ORDINE *Order reference* POS. *Item*	DISEGNO *Drawing*	DENOMINAZIONE *Item description*	Quantità *Quantity*	Documentazione rilasciata *Delivered documentation*
3	683RM08455 REV.F	PIASTRA DI TESTA L.C.	4	
5	683RM08456 REV.F	PIASTRA DI TESTA L.O.C.	4	

SI CERTIFICA CHE I PARTICOLARI SOPRACITATI SONO STATI COSTRUITI IN CONFORMITA' AI DISEGNI E ALLE SPECIFICHE RICHIAMATE IN ORDINE.
WE CERTIFY THAT THE ABOVEMENTIONED PARTS HAVE BEEN BUILD AND TESTED IN CONFORMITY WITH SPECIFICATIONS AND DRAWING AS IN ORDER

Note
Remarks

Operatore *Operator*	**Enti collaudatori** *Inspect. officials*	**Ispettore cliente** *Customer Inspect.*	Zambetti e Lumina S.p.A. *Inspect. Dept. Head* Walter Spolaore Level 2 RT-UT-MT-PT-VT UNI EN 473/ANT-TC-1A

ZAMBETTI-LUMINA SPA

Zambetti e Lumina S.p.a.	**SISTEMA QUALITA'** *QUALITY SYSTEM*	ATC N° 1032/003/2002
	ATTESTATO DI CONFORMITA' *Certificate of compliance*	COMM. *Job* 1032 / 0000
		DATA *Date* 02/07/2002

CLIENTE *Customer*	ORDINE *Order*	DEL *Of*	COMM. CLIENTE *Customer's job*	
ANSALDO SUPERCOND. S.p.A.	157	14/05/2001	F10209EM	
OGGETTO *Subject*	**DISEGNO RIF.** *Ref. Drw*		**FOGLIO** *Sheet*	**DI** *Of*
PIASTRE DI TESTA	VEDI SOTTO		1	1

RIFERIMENTO ORDINE *Order reference* POS. *Item*	DISEGNO *Drawing*	DENOMINAZIONE *Item description*	Quantità *Quantity*	Documentazione rilasciata *Delivered documentation*
4	683RM08455 REV.F	PIASTRA DI TESTA L.C.	13	
6	683RM08456 REV.F	PIASTRA DI TESTA L.O.C.	13	

SI CERTIFICA CHE I PARTICOLARI SOPRACITATI SONO STATI COSTRUITI IN CONFORMITA' AI DISEGNI E ALLE SPECIFICHE RICHIAMATE IN ORDINE.

WE CERTIFY THAT THE ABOVEMENTIONED PARTS HAVE BEEN BUILD AND TESTED IN CONFORMITY WITH SPECIFICATIONS AND DRAWING AS IN ORDER

Note
Remarks

Operatore *Operator*	**Enti collaudatori** *Inspect. officials*	**Ispettore cliente** *Customer inspect.*	**Capo collaudo** *Inspect. Dept. manager*
			Zambetti e Lumina S.p.A. Walter Spelgatti Level 2 ... UT ... VT UNI EN 473/SNT-TC-1A

MODULO - MD002 Rev.00

ZAMBETTI-LUMINA SPA

Zambetti e Lumina S.p.a.	SISTEMA QUALITA' *QUALITY SYSTEM*	ATC N° 1032/002/2002
	ATTESTATO DI CONFORMITA' *Certificate of compliance*	COMM. *Job* 1032 / 0000
		DATA *Date* 02/07/2002

CLIENTE *Customer*	ORDINE *Order*	DEL *Of*	COMM. CLIENTE *Customer's job*
ANSALDO SUPERCOND. S.p.A.	157	14/05/2001	F10209EM
OGGETTO *Subject*	**DISEGNO RIF.** *Ref. Drw*		**FOGLIO** *Sheet* 1 **DI** *Of* 1
PIASTRE DI TESTA	VEDI SOTTO		

RIFERIMENTO ORDINE *Order reference* POS. *Item*	DISEGNO *Drawing*	DENOMINAZIONE *Item description*	Quantità *Quantity*	Documentazione rilasciata *Delivered documentation*
3	683RM08455 REV.F	PIASTRA DI TESTA L.C.	2	
5	683RM08456 REV.F	PIASTRA DI TESTA L.O.C.	2	

SI CERTIFICA CHE I PARTICOLARI SOPRACITATI SONO STATI COSTRUITI IN CONFORMITA' AI DISEGNI E ALLE SPECIFICHE RICHIAMATE IN ORDINE.
WE CERTIFY THAT THE ABOVEMENTIONED PARTS HAVE BEEN BUILD AND TESTED IN CONFORMITY WITH SPECIFICATIONS AND DRAWING AS IN ORDER

Note
Remarks

Operatore *Operator*	**Enti collaudatori** *Inspect. officials*	**Ispettore cliente** *Customer inspect.*	**Capo collaudo** *Inspect. chief manager*
			Zambetti e Lumina S.p.A. Walter Spelgatti Livello 2° - UNI EN 473/SNT-TC-1A

MODULO - MD002 Rev.00

ZAMBETTI-LUMINA SPA

Zambetti e Lumina S.p.a.	SISTEMA QUALITA' *QUALITY SYSTEM*	RCD N° 19/2001
	RAPPORTO DI CONTROLLO DIMENSIONALE *Dimensional test report*	COMM. *Job* 1032 / 0010
		DATA *Date* 27/07/2001

CLIENTE *Customer*	ORDINE *Order*	DEL *Of*	COMM. CLIENTE *Customer's job*	
ANSALDO SUPERCOND. S.p.A.	157	14/05/2001	F10209EM	
OGGETTO *Subject*	DISEGNO RIF. *Ref. Drw*		QUANTITA' *Quantity*	FOGLIO *Sheet* DI *of*
PIASTRA DI TESTA L.C.	683RM08455 REV.E		1	1 1

RIFERIMENTO ORDINE *Order reference*		DENOMINAZIONE *Item description*	Quota *Dimension*					
			Prescritta *Prescrib.*		Rilevata *Dimensional result*			
POS. *Item*	DISEGNO *Drawing*		Nominale *Nominal*	Tolleranza *Tolerance*	Conforme *According to*	N°	Non confor. *Not acc. to*	N°
1	683RM08455 REV.E	PIASTRA DI TESTA L.C.	R 274,50	+0 / -0,10	- 0,05	/	/	/
			237,50	+0 / -0,50	- 0,10	/	/	/
			148,00	0 / +0,50	+ 0,15	/	/	/
			97,26	± 0,10	± 0,05	/	/	/
			80,00	0 / +0,50	+ 0,50	/	/	/
			70,00	0 / +0,50	+ 0,50	/	/	/
			52,00	± 0,50	+ 0,50	/	/	/
			50,00	± 0,20	-0,04 / -0,07	/	/	/

Note
Remarks

Operatore *Operator*	Enti collaudatori *Inspect. officials*	Ispettore cliente *Customer inspect.*	Capo collaudo *Inspect. Dept. manager* Zambetti e Lumina S.p.A. Walter Spelgatti Level 2 BT-UT-MT-PT-VT UNI EN 473/SNT-TC-1A

MODULO - MD010 Rev.00

ZAMBETTI-LUMINA SPA

Zambetti e Lumina S.p.a.	SISTEMA QUALITA' *QUALITY SYSTEM*	RCD N° 20/2001
	RAPPORTO DI CONTROLLO DIMENSIONALE *Dimensional test report*	COMM. *Job* 1032 / 0020
		DATA *Date* 27/07/2001

CLIENTE *Customer*	ORDINE *Order*	DEL *Of*	COMM. CLIENTE *Customer's job*	
ANSALDO SUPERCOND. S.p.A.	157	14/05/2001	F10209EM	
OGGETTO *Subject*	**DISEGNO RIF.** *Ref. Drw*		**QUANTITA'** *Quantity*	**FOGLIO DI** *Sheet of*
PIASTRA DI TESTA L.O.C.	683RM08456 REV.E		1	1 1

RIFERIMENTO ORDINE *Order reference*		DENOMINAZIONE *Item description*	Quota *Dimension*					
			Prescritta	*Prescrib.*	Rilevata	*Dimensional result*		
POS. *Item*	DISEGNO *Drawing*		Nominale *Nominal*	Tolleranza *Tolerance*	Conforme *According to*	N°	Non confor. *Not acc. to*	N°
2	683RM08456 REV.E	PIASTRA DI TESTA L.C. LOC	R 274,50	+0 / -0,10	- 0,02	/	/	/
			232,50	+0 / -0,50	- 0,10	/	/	/
			248,00	-0,1/-0,5	- 0,15	/	/	/
			97,26	± 0,10	± 0,05	/	/	/
			95,00	± 0,50	± 0,10	/	/	/
			90,00	0 / +0,50	± 0,12	/	/	/
			52,00	± 0,50	0	/	/	/
			47,00	± 0,20	- 0,20	/	/	/
			50,00	± 0,20	-0,05 / -0,10	/	/	/

Note
Remarks

Operatore *Operator*	Enti collaudatori *Inspect. officials*	Ispettore cliente *Customer inspect.*	Capo collaudo *Inspect. Dept. Manager*
			Zambetti e Lumina S.p.A. Walter Sobiati Level 2 RT-UTVT-PTVT UNI EN 473/SNT-TC-1A

MODULO - MD010 Rev.00

CERTIFICATE - ZEUGNIS - CERTIFICATO Page 1(2)
EN 10 204-3.1.B ZAMBETTI-LUMINA SPA Seite

AvestaPolarit STAINLESS

Date - Datum	Load - Ladung - Charge No	Cert No - Zeugnis Nr
010905	3637	1090430.R00

Your order - Ihre Bestellung - Votre commande	Avesta Order - Auftrag - Ordre Pack - Kolli - Colis No
1357	103421 0

Purchaser - Besteller - Acheteur

Requirements - Anforderungen - Exigences
EN 10088-2:1995
ASTM A240-01
+0/-2.0 mm

Dest.
To buyer by mail

Product - Erzeugnisform - Produit
Stainless steel plate, hot rolled
Solution annealed, pickled /:1D/No. 1 Finish

Grade - Werkstoff - Nuance
17-11-2LN
1.4406/Type 316LN

C625

Brand-Mark - Herstellerzeichen - Signe du fabricant	Inspection stamp - Abnahme - Estampille de réception	Melting process - Erschmelzungsart - Procédé de fusion
W	DJ 2	E+CLU

Marking - Kennzeichnung - Marquage
Plate No, Dimension, Heat No, Lot No, Incl. *

Extent of delivery - Lieferumfang - Etendue de livraison

Item - Pos - Pos	Quantity - Anzahl - Nombre	kg	Dimension - Abmessung - mm	Heat No - Schmelze-Nr - Coulée	Lot No - Los-N - Lot No
1	1		60 * 1600 * 5500	86303A	96165

Plate No 4135 1604
Blech Nr
Tôle No

Chemical composition - Chemische Zusammensetzung - Composition chimique %
Heat - Schmelze - Coulée No

	C	Si	Mn	P	S	Cr	Ni	Mo	N
Min	0.000	0.0	0.0	0.000	0.000	16.50	10.00	2.00	0.12
Max	0.030	0.8	2.0	0.045	0.015	18.00	12.00	2.50	0.16
86303A	0.025	0.7	1.1	0.028	0.001	17.52	11.13	2.28	0.13

Test results - Prüfergebnisse - Résultats des essais (1N/mm² = 1 MPa)

Direc. T = Transverse L = Longitudinal | Top/Bot F = Front B = Back | Form P = Flat C = Round | Location 1 = Center 2 = Close to Surface 3 = Standard 4 = At 1/4 of thickness

Mechanical Properties
Tensile testing EN 10 002/Hardness Rockwell B

Plate-No	Direc.	Top/Bot	Location	Form	Temp. C	Rp 0,2 N/mm2	Rp 1,0 N/mm2	Rm N/mm2	A5 %	A50 %	HRB
Min						280	320	580	40	40	
Max								780			95
1603	T	F	4	C	20	306	344	617	52	57	80

N°.....
ZAMBETTI e LUMINA S.p.A.
CONTROLLO QUALITA'

The results comply with the requirements of the order.

AvestaPolarit AB (publ)
HOT ROLLED PLATE
SE-693 81 Degerfors
Sweden
TELEFON / TELEPHONE
Nat 0586 - 470 00
Int +046 (0)586 470 00
TELEFAX
Nat 0586 - 470 16
Int +046 (0)586 470 16
Org nr/Reg. No.: 556001-8748 Moms nr/V.A.T. No.: SE556001874801
Säte/Registered office Stockholm Sweden

Certificate No FM 09184

Quality Inspector

CERTIFICATE - ZEUGNIS ZAMBETTI-LUMINA SPA Page 2(2) Seite

EN 10 204-3.1.B

AvestaPolarit STAINLESS

Date - Datum	Load - Ladung / Charge No.	Cert.No. - Zeugnis Nr.
010905	3637	1090430.R00

Other Information

Heat treated at 1100 C and Quenched in water.
Plate divided into multipel of:1
Dimensional control, visual inspection and grade check :Approved

Zambetti & Lumina

N.°	ACM-105/01
COMM. JOB	1032
DATA DATE	15-11-01
CLIENTE CUSTOMER	ANSALDO SUP.
ORDINE ORDER	157 Pos. 3÷6
DISEGNO DRAWING	683 RM 08455
	683 RM 08456
CONTROLLATO CONTROLLED	

N°.....
ZAMBETTI & LUMINA S.p.A.
CONTROLLO QUALITA'

AvestaPolarit AB (publ)
HOT ROLLED PLATE
SE-693 81 Degerfors
Sweden
TELEFON / TELEPHONE Nat 0586 - 470 00 Int +046 (0)586 470 00
TELEFAX Nat 0586 - 470 16 Int +046 (0)586 470 16
Org nr/Reg. No.: 556001-8748 Moms nr/V.A.T. No.: SE556001874801
Säte/Registered office Stockholm Sweden

FM 09184

Quality Inspector

CERTIFICATE / ZEUGNIS / CERTIFICAT / Seite

EN 10.204-3.1.B ZAMBETTI-LUMINA SPA

AvestaPolarit STAINLESS

Date - Datum	Load - Ladung - Charge No	Cert.No - Zeugnis Nr
010905	3637	1090431.R00

Your order - Ihre Bestellung - Votre commande	Avesta Order - Auftrag - Ordre	Pack - Kolli - Colis No
1357	103421	0

Purchaser - Besteller - Acheteur

Requirements - Anforderungen - Exigences

EN 10088-2:1995
ASTM A240-01
+0/-2.0 mm

Dest.

To buyer by mail

Product - Erzeugnisform - Produit

Stainless steel plate, hot rolled
Solution annealed, pickled /:1D/No. 1 Finish

Grade - Werkstoff - Nuance

17-11-2LN
1.4406/Type 316LN

C696

Brand-Mark - Herstellerzeichen - Signe du Producteur	Inspectors stamp - Abnahme - Stempel - Estampille de l'expert	Melting process - Erschmelzungsart - Procédé de fusion
W	DJ 2	E+CLU

Marking - Kennzeichnung - Marquage

Plate No, Dimension, Heat No, Lot No, Incl. *

Extent of delivery - Lieferumfang - Etendue de livraison Item Pos Pos Anzahl Nombre	kg	Dimension - Abmessung mm	Heat No Schmelze-Nr Coulée	Lot No Los Nr Lot No
2 1		60 * 1600 * 5220	86303A	96165

Plate No 4135 1603
Blech Nr
Tôle No

Chemical composition - Chemische Zusammensetzung - Composition chimique %
Heat - Schmelze - Coulée No

	C	Si	Mn	P	S	Cr	Ni	Mo	N
Min	0.000	0.0	0.0	0.000	0.000	16.50	10.00	2.00	0.12
Max	0.030	0.8	2.0	0.045	0.015	18.00	12.00	2.50	0.16
86303A	0.025	0.7	1.1	0.028	0.001	17.52	11.13	2.28	0.13

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Mechanical Properties

Tensile testing EN 10 002/Hardness Rockwell B

Plate-No	Direc.	Top/Bot	Location	Form	Temp. C	Rp 0,2 N/mm2	Rp 1,0 N/mm2	Rm N/mm2	A5 %	A50 %	HRB
Min						280	320	580	40	40	
Max								780			95
1603	T	B	4	C	20	306	344	617	52	57	80

N°.....

ZAMBETTI e LUMINA S.p.A.
CONTROLLO QUALITA'

The results comply with the requirements of the order.

AvestaPolarit AB (publ)
HOT ROLLED PLATE
SE-693 81 Degerfors
Sweden
TELEFON / TELEPHONE Nat 0586 - 470 00 Int +046 (0)586 470 00
TELEFAX Nat 0586 - 470 16 Int +046 (0)586 470 16
Org nr/Reg. No.: 556001-8748 Moms nr/V.A.T. No.: SE556001874801
Säte/Registered office Stockholm Sweden

FM 09184

Quality Inspector

CERTIFICATE ZEUGNIS CERTIFICAT ZAMBETTI-LUMINA SPA Page 2(2) Seite

EN 10 204-3.1.B

AvestaPolarit STAINLESS

Date Datum	Load Ladung	Charge No Ch.	Cert. No. Zeugnis Nr.
010905	3637	1090431.R00	

Other Information

Heat treated at 1100 C and Quenched in water.
Plate divided into multipel of:1
Dimensional control, visual inspection and grade check :Approved

Zambetti & Lumina

N.° ACM-106/01
COMM. JOB 1032
DATA DATE 15-11-01
CLIENTE CUSTOMER ANSALDO SUP.
ORDINE ORDER 157 Pos. 3÷6
DISEGNO DRAWING 683RM08455
683RM08456
CONTROLLATO CONTROLLED

N°.....
ZAMBETTI e LUMINA S.p.A.
CONTROLLO QUALITA'

AvestaPolarit AB (publ)
HOT ROLLED PLATE
SE-693 81 Degerfors
Sweden

TELEFON/TELEPHONE
Nat 0586 - 470 00
Int +046 (0)586 470 00

TELEFAX
Nat 0586 - 470 16
Int +046 (0)586 470 16

Org nr/Reg. No.: 556001-8748 Moms nr/V.A.T. No.: SE556001874801
Säte/Registered office Stockholm, Sweden

FM 09184

Quality Inspector

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXXXX-QA-123456

EDMS Document No.
666666

Certificate of Conformity
for CERN supplied components

1. ***Part description***	2. ***CERN Part ID*** *(19 chars)*			5. ***Other identification***
	3. ***Part No.*** *(10 chars)*	-	4. ***Serial No.*** *(8 chars)*	
CYLINDRICAL FILLING PIECE	HCMB__A170	-		Batch N° NOV.2001
		-		
		-		
		-		
		-		
		-		
		-		
		-		

6. ***Recipient contractor:*** ANSALDO ENERGIA S.pa

7. ***Contract / Order No :*** F-302/LHC/LHC

8. ***Responsible person at CERN:*** Cristiano Lanza — ***Tel.*** 00 41 22 767 36 47; ***E-mail.*** Cristiano.Lanza@cern.ch

9. ***Reference specification:*** LHC-MMS/2001-229/CL

10. ***Reference drawings:*** LHCMB__A0170

11. ***Part manufactured by:*** TOP GLASS S.p.a

12. ***Acceptance test refs:*** See attachment paper

13. ***Acceptance test results:*** Conform to Technical Specification

14. ***Comments:*** 150 (30 X 5) pieces for 30 magnets

CERN certifies that the supplied material is conform to the reference specification.

Date :	***Name :***	***Signature :***
14 – 01 – 2002	Cristiano Lanza	Cristiano Lanza

TOP GLASS

DICHIARAZIONE DI CONFORMITÀ n° 2675/2001

Noi TOP GLASS S.p.A.

Via Bergamo n° 15, 20096 Pioltello (MI)

dichiariamo sotto la nostra esclusiva responsabilità che il prodotto :

TIPO : TONDO Ø 55,4 mm NATURALE EPOXY

Lunghezza 14703 mm (2935 ± 5 mm)

CLIENTE : CERN – ORGANISATION EUROPEENNE POUR LA RECHERCHE NUCLEAIRE

VOSTRO ORDINE : n° CA 1185867 del 12/09/01

Documento di trasporto n° 2675 del 10/12/01

al quale questa dichiarazione si riferisce è conforme alla seguente norma o ad altri documenti normativi : LHCMB A00170

Pioltello li 14/12/01

x Responsabile Assicurazione Qualità

Ing. Maurizio Ondei

Gaulusa Farina

SINCERT Certificato n° 034 Norma ISO 9002

SQP CISQ IQNet

TOP GLASS

LABORATORIO TOP GLASS

CLIENTE: CERN

DATA: **28/11/01**

lotto di produzione n° **NOV. 2001**

TIPOLOGIA : **TONDO Ø 55,4 mm epossidico naturale**

DATA INIZIO PRODUZIONE : **09/11/01**

DATA FINE PRODUZIONE : **28/11/01**

verifica diametro e lunghezza secondo disegno n° LHCMB __A0170

MISURA	MEDIA	1°	2°	3°	4°	5°
Ø in mm	**54,96**	54,85	55,03	54,97	54,97	54,97
Ø in mm	**55,01**	54,98	55,02	55,03	55,03	55,01
Ø in mm	**54,98**	54,98	55,01	54,94	55,02	54,95
Ø in mm	**54,98**	55,02	55,01	54,95	54,96	54,95
Ø in mm	**54,96**	54,92	54,89	54,95	55,02	55,01
Ø in mm	**54,98**	54,94	54,98	54,97	55,02	55,01
Ø in mm	**54,94**	54,94	54,93	54,95	54,89	54,98
Ø in mm	**54,94**	54,86	54,90	55,01	54,96	54,98
Ø in mm	**54,94**	54,96	54,96	54,91	54,92	54,93
Ø in mm	**54,97**	54,93	54,94	54,89	55,06	55,02
Ø in mm	**54,91**	54,94	54,85	54,93	54,91	54,90
Ø in mm	**54,92**	55,01	54,84	54,83	54,94	54,96
Ø in mm	**54,91**	54,96	54,94	54,96	54,86	54,83
Ø in mm	**54,86**	54,84	54,80	54,90	54,89	54,89
Ø in mm	**54,93**	54,89	54,94	54,98	54,90	54,92
Ø in mm	**54,95**	54,98	54,90	54,96	54,98	54,94
Ø in mm	**54,90**	54,89	54,86	54,92	54,92	54,92
Ø in mm	**54,99**	55,02	55,00	54,96	54,99	54,98
lunghezza mm	**2938,60**	2938	2939	2939	2940	2937
lunghezza mm	**2935,00**	2935	2935	2935	2936	2934

TOP GLASS s.p.a.
Via Bergamo,15-20096 Pioltello (MI) Italia-www.topglass.it E-mail: info@topglass.it- Tel.: (+39)02 929186.1
Cod.Fisc.03067020150-P.IVA05112050157-C.C.A.A.MI1284295-Reg.Imp.Mi284271-Cap.Soc.1.500.000.000 int.vers

TOP

GLASS

lunghezza mm	**2935,20**	2935	2934	2935	2937	2935
lunghezza mm	**2935,00**	2934	2935	2936	2935	2935
lunghezza mm	**2936,00**	2935	2937	2938	2934	2936
lunghezza mm	**2934,60**	2934	2934	2936	2935	2934
lunghezza mm	**2935,20**	2934	2934	2936	2936	2936
lunghezza mm	**2935,40**	2933	2934	2936	2936	2938
lunghezza mm	**2935,60**	2934	2935	2936	2937	2936
lunghezza mm	**2935,40**	2933	2937	2936	2936	2935
lunghezza mm	**2935,60**	2936	2935	2935	2936	2936
lunghezza mm	**2937,40**	2931	2939	2938	2939	2940
lunghezza mm	**2938,60**	2938	2939	2939	2940	2937
lunghezza mm	**2935,00**	2935	2935	2935	2936	2934
lunghezza mm	**2935,20**	2935	2934	2935	2937	2935
lunghezza mm	**2935,00**	2934	2935	2936	2935	2935
lunghezza mm	**2936,00**	2935	2937	2938	2934	2936
lunghezza mm	**2935,40**	2936	2936	2934	2935	2936

Operatore : Gianluca Farina

TOP_GLASS S.p.A.

CERN
CH-1211 Geneva 23
Switzerland

LHC Project Document No.
LHC-XXX-FR-0000 rev. **1.0**

EDMS Document No.
———

the
Large Hadron Collider
project

Certificate of Conformity
for CERN Delivered Components

Part name:	Instrumentation wiring components
Delivery to:	Ansaldo
Part ID:	HCMB__A127
Serial No. / Batch No.:	R19574
Manufacturer:	Axon
Contract / Order No.:	CA 1169999
Comment on delivery:	In addition to the instrumentation wires being the subject of the above references, this delivery includes all the auxiliary components for 28 dipole cold masses equipment.
Responsible person at CERN:	Gérard Brun — ***Tel.*** +00 41 22 767 3725 — ***E-mail.*** Gerard.Brun@cern.ch
Related tech. specification:	DO-18543/LHC/LHC
Related drawings:	No
Acceptance test references:	Into Technical Specification
Acceptance test results:	Accepted

CERN certifies that the delivered material is conform to the technical specification mentioned above.

Date:	***Name:***	***Signature***
05-06-01	Gérard Brun	

R. 21/06

COGNE ACCIAI SPECIALI S.p.A.
11100 AOSTA - VIA PARAVERA, 16
TEL. +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 40.000.000.000 INT. VERS.
VAT: IT00571320078
P.I. 00571320078 C.F. 02187360987
REG. IMP. AO003 - 7234 REA 50474

Locking rods inserts Ø5 (machined)

(A02) CERTIFICATO DI COLLAUDO SECONDO DIN 50049/EN 10204 - 3.1.B
(A03) NUMERO DEL DOCUMENTO 2000020363
PAGINA 1/2

ANSALDO

(A06) COMMITTENTE .:
(A07) ORDINAZIONE DEL COMMITTENTE .:
(A01) STABILIMENTO PRODUTTORE .: AOSTA, VIA PARAVERA 16
(A05) REDATTORE DEL DOCUMENTO .: SERVIZIO QUALITA'
(A08) CONFERMA D'ORDINE DEL PRODUTTORE :
(A04) SIGLA STABILIMENTO PRODUTTORE .: COGNE

SPECIFICA :
(B01) PRODOTTO .: CAS-D-K700-[illegible]2 — REGOLA TECNICA .: [illegible]
(B04) STATO DI FORNITURA .: 2077 TRA Trafilati Tondi ISOH9
RP Ricotto Leggermente Incrud.
(B11) DIMENSIONI DEL PRODOTTO (MM): .6,000
(B02) QUALITA' ACCIAIO .: WN.1.4301 — (B12) LUNGH. DEL PRODOTTO (MM): 03050 /03100
(B08) NUMERO DI COLATA .: 072856 — MARCA COGNE : F304
(B06) MARCATURA DEL PRODOTTO .: (B07) NUMERO DI SCHEDA .: 17914
SIGLA SOST. N. COLATA : 791.

CONFORMITA' ALLA NORMA EN 10088/3
CONFORMITA' ALLA NORMA DIN 17440 W2, W.1.4301
FABBRICAZIONE AL FORNO ELETTRICO + AOD + COLATA CONTINUA
LA FORNITURA E' CONFORME ALLE PRESCRIZIONI CONTRATTUALI

(C71) COMPOSIZIONE CHIMICA - ANALISI DI COLATA

Ref.	020000023859	80.000,000								
ELEMENTI	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OTTENUTO	0,049	0,450	1,880	0,028	0,029	0,086	18,100	0,430	8,100	0,500
EMENTI	Co									
TENUTO	0,070									

OVA DI DUREZZA ALLO STATO DI FORNITURA

E.	790000014224		
RMA	EU 3/79-2/80	PROVA DI DUREZZA	HB
TENUTO	224,0		

OVA DI TRAZIONE ALLO STATO DI FORNITURA

"	790000014224					
NORMA	EN 10002				(C02) ORIENTAMENTO DELLE PROVETTE L	
UNITA' DI MISURA	RM NMM	RP02 NMM	A % 5.0 D	Z %	RP1 NMM	
OTTENUTO	740,00	592,00	35,80	70,40	625,00	
	744,00	595,00	35,50	70,00	629,00	
	749,00	598,00	35,10	69,50	634,00	
	736,00	588,00	36,20	70,90	621,00	

MICROPUREZZA

Ref.	790000014224
NORMA	NP04106 5.02.01

SANDVIK

CERTIFICATE

No. A/01-873159 Rev 00
Date 2001-09-03 **Page** 1/2

INSPECTION CERTIFICATE acc to
EN 10 204 3.1.B

ANSALDO SUPERCONDUTTORI SPA
C.SO PERRONE 73 R
16152 GENOVA GE

INSPECTION STAMP
QA-TUBE

ASC →

Customer References

289 — Customer order 2001-08-30

250-00991 ANSALDO SU

Sandvik References

Order No.	Subs No.	ABSS Dispatch note
143334	24280	49819/54

ABSS No. 300-46103 C.Code 63

Material description
SEAMLESS STAINLESS COLD FINISHED
TUBE IN METRIC SIZES

Steel making process
Electric furnace

Steel/material Designations

Sandvik	W.nr
3R12	1.4306

DIN
X 2 CRNI 19 11

Technical requirements
DIN 17458 Testing class 1

EXTENT OF DELIVERY

It	Product designation	Heat	Lot	Pieces	Kg	M
01	TST-3R12-17.2-1.6 17.20 X 1.60	452882	16559	333	1257.0	1998.00
			Total	333	1257.0	1998.00

Tolerances according to EN ISO 1127: D3/T3

TEST RESULTS
Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni
452882	0.007	0.36	1.15	0.026	0.007	18.26	10.09

Tensile test at room temperature

	Yield strength N/mm2		Tensile strength N/mm2	Elongation %
Lot	Rp0.2	Rp1.0	Rm	A
16559	306	351	637	55
	309	354	638	54
	307	354	636	53
	304	347	629	54
	305	348	630	54
	304	348	628	54

Quality assurance - Carl-Filip Lindahl/ QA-manager Tube & Pipe
MTC Service / Certificates

Following controls/tests have been satisfactorily performed:
- Flattening test
- Material Identification
- Leak test: Eddy current test acc to SEP 1925
- Visual inspection and dimensional control.

Heat Treatment:
Solution annealed and quenched.

Marking:
SANDVIK 3R12 NFA 49-117 SS 2352-22 WNR 1.4306 TP 304L Z2CN18-10 M S PK1 17.20 X 1.60 MM HT 452882 SS LOT 16559 *QA-TUBE*

The number of tests is based on the size of the manufacturing lot before cutting to finished lengths.

The delivered products comply with the requirements of the order.

The material is manufactured according to a Quality system, approved and registered to ISO 9001.

The certificate is produced with EDP and valid without signature

Rods ~~A0135~~ A132

TRAFILERIE BEDINI
GRUPPO USINOR

S.R.L. - Cap. Soc. 5.000.000.000
Cod. Fisc. 01004760052 - P. IVA IT 10810010156
Iscr. Reg. Impr. Milano 333941
R.E.A. Milano 1349150
Sede e Stabilimento: Via G. Di Vittorio, 34-36
20068 Peschiera Borromeo (MI) Italia
Tel. ++39 02.54.74.31 - Fax ++39 02.54.73.483

AZIENDA CERTIFICATA
UNI EN ISO 9002:94
IQG 9221

DOC. DI TRASPORTO **0083586** **20/09/01**

N° Cliente/tel : 002011 /010-6551 - 7324
Filiale : 12 Agenzia P.B.
Responsabile : 0L1 POGGIOLI Pagina : 1

CLIENTE
ANSALDO SUPERCONDUTTORI S.P.A.
VIA MARTINI N.7

17011 ALBISSOLA SUPERORE SV1
Italy

Destinazione della merce

DESTINATARIO
ANSALDO SUPERCONDUTTOTI S.P.A.
CORSO PERRONE N.71 ROSSO

16100 GENOVA GE0
Italy

Indicazioni relative al trasporto

Trasporto :	Vettore
P.) :	CPT
Resa :	Ns.Deposito
Ns. Deposito :	Pesch.Borr.
Linea trasporto :	H 006 Lig

Numero colli 7
Imballo : CH 007
Mod. pagamento :
Causale uscita : VENDITA

Trasportatore Data Ora Firma
FACCHINI TRASPORTI SNC
VIA VOLTA 33
20083 GAGGIANO MI1
21 SET. 2001

Peso netto	Peso lordo	Tara : 1610,000
3333,000	4943,000	Valore :

N° Po	Descrizione	Quantità ordinata	Quantità spedita	U.	SALD	Peso Netto
	NR. ORDINE 106064402 15/06/01 Riferimento VS.ORD.193 DEL 31/5/01 UM02095 Corr. Int. : Gandini Rita					
1	Barre Tonde 4307-304L Trafilato Luc. Solubilizzato 12,0 h9 VS.ART.0209.08547.0001 N.256 TIRANTI DIS.671RM0854 R.0 COD.FORN.14.1.06.0133 POS.1	3300,000	3333,000	KG	S	3333,000

Data	Nr.Lot	Nr.Colli	Quantita		Tare	Poids Brut
112055	0447809	00001	480,000	Casse	230,00	710,000
112055	0447810	00001	480,000	Casse	230,00	710,000
112055	0447811	00001	453,000	Casse	230,00	683,000
123401	0447805	00001	480,000	Casse	230,00	710,000
123401	0447806	00001	480,000	Casse	230,00	710,000
123401	0447807	00001	480,000	Casse	230,00	710,000
123401	0447808	00001	480,000	Casse	230,00	710,000

2 Varie .
CONTRIBUTO SPESE ATTREZZATURA VS.ART.0209.08547.0002 POS.2

ANSALDO
MAGAZZINO - MAGN
FIRMA

Vettori Data Ora Firma

Firma del Cliente
20/09/01
24 SET. 2001

Ubicazione PROVVISORIA
48 NORD
Ubicazione DEFINITIVA

NATURA DEI BENI : ACCIAIO

TRAFILERIE BEDINI
GRUPPO USINOR

S.R.L. - Cap. Soc. 5.000.000.000
Cod. Fisc. 01004760052 - P. IVA IT 10810010156
Iscr. Reg. Impr. Milano 333941
R.E.A. Milano 1349150
Sede e Stabilimento: Via G. Di Vittorio, 34-36
20068 Peschiera Borromeo (MI) Italia
Tel. ++39 02.54.74.31 - Fax ++39 02.54.73.483

AZIENDA CERTIFICATA UNI EN ISO 9002/94 ISO 9221

Bolla/N°BL/DL N°/Lief.	N° Certificat./Prüf N°	Produttore/Usine produc./Manufact./Herstell.
83586	18622	090300

CERTIFICATO DI COLLAUDO 3.1.B

MODELLO 11/C Ed.0 rev.0
EN 10204/DIN 50049

Prodotto Erzeugnisform
Produit Product

Cliente e/o destinatario - Client et/ou destinataire - Besteller und/oder Empfaenger
Purchaser and/or Consignee
ANSALDO SUPERCONDUTTORI S.P.A.

N° ordine cliente - Votre référence - Ihre Aufstrag Nr - Your reference
VS.ORD.193 DEL 31/5/01 UM02095

Qualità e specifiche tecniche - Nuance et spécifications techniques - Stalsorte und Pruefbedingungen - Quality and Specifications

4307-304L h9 Barre Tonde Trafilato Luc. Solubilizzato

Stato di fornitura - Etat de livraison - Lieferzustand - As delivered (1)	Stato metallurgico - Etat métallurgique - Heat treatment condition - Lieferzustand
Trafilato Luc.	Solubilizzato

N° Conferma d'ordine Accusé de reception Auftragsbest N° Acknowledgment N°	Posizione N° Poste Post Nr Item N°	N° lotto interno N° de lot interne Interne los Nr Internal batch N°	Profilo Profil Profile Shape	Dimensione Dimension Abmessung Size	Tolleranza Tolérance Toleranz Tolerance	Lunghezza Longueur Laenge Length	Peso netto Masse Gewicht Weight
106064402	1	0447808	Barre Tonde	12,0000	H9	Fissa	480,000

Lotto fornitore Lot producteur Herant los Lister batch	N° Colata N° de coulée Schmelz Nr Heat N°	Trazione - Traction - Zugversuch - Tensile test Lim. di snervamento Limite d'Elasticité Streckgrenze Yield Strength 0,2 %	1 %	Carico di rottura Résistance tract. Zugfestigkeit Tensile strength	Allungamento Allongement Dehnung Elongation %	Strizione Striction Einschnürung Red of Area %		Resilienza - Résilience - Kerbschlagzaehigkeit - Notch Toughness Forma Tipo Form Tipo	Sede Sened Richt. Direct.	Temperatura di prova Température de prova Pruaftemperatur Prova Temperature	Valori Valori individuali Einzelwerte Valore individual	Media Moyenne Mittelwerte Average	Durezza Dureté Haerte Hardness
		RP MPA		RM MPA	A5								HB
	123401	542		735	30								243

		C	SI	MN	NI	CR	MO	CU	N	S	P
	123401	0,016	0,290	1,220	8,090	18,360	0,370	0,500	0,072	0,026	0,030
		TI	CO		ZR	AL					
	123401	0,010	0,094		0,010	0,004					

ANSALDO 671 RM08547 REV 0
RETTILINEARITA = 0,90 MM/MT

Note - Notes - Remarks - Bemerkungen

Il 20/09/01
Firma del responsabile
L.DIFRAIA

Resp. controllo qualità
Resp. contrôle qualité
Sachverstandiger

Controllo marcatura, visivo e dimensionale : soddisfacente. Si certifica che i prodotti sopra descritti sono conformi alle prescrizioni dell'ordine (1)
L'analisi chimica è copia conforme a quella presente sul certificato del produttore

Contrôle de marquage, d'aspect et de dimensions satisfaisant. Nous certifions que le présent document reproduit avec exactitude les données du certificat producteur. L'analyse chimique a été relevée du certificat de la matière première.

Bezeichnung, besichtigung und ausmessung : Ohne beanstandung. Wir bestatigen hiermit dass die obengenannten erzeuggnisse den bestellung vorschriften entsprechen. Die chemishe zusammensetzung entspricht den lieferanten analyse.

The chemical analysis results are true and correct copy of the raw material supplier's certificate.
Marking, inspection and measurement : Without objections. We certify that the above mentioned and ... are in accordance with the order

TRAFILERIE BEDINI
GRUPPO USINOR

...L. - Cap. Soc. 5.000.000.000
...od. Fisc. 01004760052 - P. IVA IT 10810010156
Iscr. Reg. Impr. Milano 333941
R.E.A. Milano 1349150
Sede e Stabilimento: Via G. Di Vittorio, 34-36
20068 Peschiera Borromeo (MI) Italia
Tel. ++39 02.54.74.31 - Fax ++39 02.54.73.483

AZIENDA CERTIFICATA
UNI EN ISO 9002:94
IQG 9221

Bolla/N°BL/DL N°/Lief.	N° Certificat./Pruf N°	Produttore/Usine produc./Manufact./Herstell.
83586	18622	090300

CERTIFICATO DI COLLAUDO 3.1.B
MODELLO 11/C Ed.0 rev.0
EN 10204/DIN 50049

Prodotto Erzeugnisform
Produit Product

Cliente e/o destinatario - Client et/ou destinataire - Besteller und/oder Empfaenger
Purchaser and/or Consignee
ANSALDO SUPERCONDUTTORI S.P.A.

N° ordine cliente - Votre référence - Ihre Aufstrag Nr - Your reference
VS.ORD.193 DEL 31/5/01 UM02095

Qualità e specifiche tecniche - Nuance et spécifications techniques - Stalsorte und Pruefbedingungen - Quality and Specifications
4307-304L h9 Barre Tonde Trafilato Luc. Solubilizzato

Stato di fornitura - Etat de livraison - Lieferzustand - As delivered (1)
Trafilato Luc.

Stato metallurgico - Etat métallurgique - Heat treatment condition - Lieferzustand
Solubilizzato

N° Conferma d'ordine / Accusé de reception / Aufstragsbest N° / Acknowledgment N°	Posizione / N° Poste / Post Nr / Item N°	N° lotto interno / N° de lot interne / Interne los Nr / Internal batch N°	Profilo / Profil / Profile / Shape	Dimensione / Dimension / Abmessung / Size	Tolleranza / Tolérance / Toleranz / Tolerance	Lunghezza / Longueur / Laenge / Length	Peso netto / Masse / Gewicht / Weight
106064402	1	0447805	Barre Tonde	12,0000	H9	Fissa	480,000
		0447806					480,000
		0447807					480,000

Lotto fornitore / Lot producteur / Lieferant los / Master batch	N° Colata / N° de coulée / Schmelz Nr / Heat N°	Trazione - Traction - Zugversuch - Tensile test: Lim. di snervamento / Limite d'Elasticité / Streckgrenze / Yield Strength 0,2 %	Trazione: 1 %	Carico di rottura / Résistance tract. / Zugfestigkeit / Tensile strength	Allungamento % / Allongement % / Dehnung % / Elongation %	Strizione % / Striction % / Einschnuerung % / Red of Area %	Resilienza - Résilience - Kerbschlagzaehigkeit - Notch Toughness: Forma / Tipo / Form / Tipo	Senso / Sense / Richt. / Direct.	Temperatura di prova / Temperature d'essai / Pruefteperatur / Test Temperature	Valori / Valori individuali / Einzelwerte / Valore individual	Media / Moyenne / Mittelwerte / Average	Durezza / Dureté / Haerte / Hardness
		RP MPA		RM MPA	A5							HB
	123401											
	123401	542		735	30							243
	123401											

	C	SI	MN	NI	CR	MO	CU	N	S	P
123401	0,016	0,290	1,220	8,090	18,360	0,370	0,500	0,072	0,026	0,030
123401	0,016	0,290	1,220	8,090	18,360	0,370	0,500	0,072	0,026	0,030
123401	0,016	0,290	1,220	8,090	18,360	0,370	0,500	0,072	0,026	0,030

	TI	CO		ZR	AL
123401	0,010	0,094		0,010	0,004
123401	0,010	0,094		0,010	0,004
123401	0,010	0,094		0,010	0,004

Note - Notes - Remarks - Bemerkungen

ANSALDO 671 RM08547 REV 0
Rettilineità = 0,90 mm./m.

Il 20/09/01
Firma del responsabile
L.DIFRAIA

Resp. controllo qualità
Resp. contrôle qualité
Sachverstandiger
Quality control Mgr

(1) Controllo marcatura, visivo e dimensionale : soddisfacente. Si certifica che i prodotti sopra descritti sono conformi alle prescrizioni dell'ordine
L'analisi chimica è copia conforme a quella presente sui certificato del produttore

Contrôle de marquage, d'aspect et de dimensions satisfaisant. Nous certifions que le présent document reproduit avec exactitude les données du certificat producteur. L'analyse chimique a été relevée du certificat de la matière première.

Bezeichnung, besichtigung und ausmessung : Ohne beanstandung. Wir bestatigen hiermit dass die obengenannten erzeuggnisse den bestellung vorschriften entsprechen. Die chemishe zusammensetzung entspricht den lieferanten analyse.

The chemical analysis results are true and correct copy of the raw material supplier's certificate.
Marking, inspection and measurement : Without objections. We certify that the above mentioned products are consistent with the order prescriptions.

TRAFILERIE BEDINI
GRUPPO USINOR

S.R.L. - Cap. Soc. 5.000.000.000
Cod. Fisc. 01004760052 - P. IVA IT 10810010156
Iscr. Reg. Impr. Milano 333941
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Sede e Stabilimento: Via G. Di Vittorio, 34-36
20068 Peschiera Borromeo (MI) Italia
Tel. ++39 02.54.74.31 - Fax ++39 02.54.73.483

AZIENDA CERTIFICATA
Uni EN ISO 9002:94
IQNet

Bolla/N°BL/DL N°/Lief.	N° Certificat./Pruf N°	Produttore/Usine produc./Manufact./Herstell.
83586	08370	090300

CERTIFICATO DI COLLAUDO 3.1.B

MODELLO 11/C Ed.0 rev.0
EN 10204/DIN 50049

Prodotto Erzeugnisform
Produit Product

Cliente e/o destinatario - Client et/ou destinataire - Besteller und/oder Empfaenger
Purchaser and/or Consignee
ANSALDO SUPERCONDUTTORI S.P.A.

N° ordine cliente - Votre référence - Ihre Aufstrag Nr - Your reference
VS.ORD.193 DEL 31/5/01 UM02095

Qualità e specifiche tecniche - Nuance et spécifications techniques - Staisorte und Pruefbedingungen - Quality and Specifications

4307-304L h9 Barre Tonde Trafilato Luc. Solubilizzato

Stato di fornitura - Etat de livraison - Lieferzustand - As delivered (1)	Stato metallurgico - Etat métallurgique - Heat treatment condition - Lieferzustand
Trafilato Luc.	Solubilizzato

N° Conferma d'ordine / Accusé de reception / Auftragsbest N° / Acknowledgment N°	Posizione / N° Poste / Post Nr / Item N°	N° lotto interno / N° de lot interne / Interne los Nr / Internal batch N°	Profilo / Profil / Profile / Shape	Dimensione / Dimension / Abmessung / Size	Tolleranza / Tolérance / Toleranz / Tolerance	Lunghezza / Longueur / Laenge / Length	Peso netto / Masse / Gewicht / Weight
106064402	1	0447809	Barre Tonde	12.0000	H9	Fissa	480,000
		0447810					480,000
		0447811					453,000

Lotto fornitore / Lot producteur / Lieferant los / Supplier batch	N° Colata / N° de coulée / Schmelz Nr / Heat N°	Trazione - Traction - Zugversuch - Tensile test: Lim. di snervamento / Limite d'Elasticité / Streckgrenze / Yield Strength 0,2 %	Lim. di snervamento 1 %	Carico di rottura / Résistance tract. / Zugfestigkeit / Tensile strength	Allungamento / Allongement / Dehnung / Elongation %	Strizione / Striction / Einschnürung / Reduction of Area %	Resilienza - Résilience - Kerbschlagzaehigkeit - Notch Toughness: Forma / Tipo / Form / Tipo	Sens / Senso / Richt. / Direct.	Temperatura di prova / Température d'essai / Pruefteмperatur / Test Temperature	Valori / Valori individuali / Einzelwerte / Valore individual	Media / Moyenne / Mittelwerte / Average	Durezza / Dureté / Haerte / Hardness
		RP MPA		RM MPA	A5							
	112055	534		730	32							
	112055											
	112055											

	C	SI	MN	NI	CR	MO	CU	N	S	P
112055	0,030	0,400	1,090	9,040	18,100	0,410	0,500	0,058	0,025	0,026
112055	0,030	0,400	1,090	9,040	18,100	0,410	0,500	0,058	0,025	0,026
112055	0,030	0,400	1,090	9,040	18,100	0,410	0,500	0,058	0,025	0,026

	TI	CO		ZR	AL					
112055		0,099			0,003					
112055		0,099			0,003					
112055		0,099			0,003					

ANSALDO 671 1RMo8547 REV0
Rettilineità = 0,8 mm/mt.

Note - Notes - Remarks - Bemerkungen

Il 20/09/01
Firma del responsabile
L.DIFRAI

Controllo marcatura, visivo e dimensionale : soddisfacente. Si certifica che i prodotti sopra descritti sono conformi alle prescrizioni dell'ordine (1)
L'analisi chimica è copia conforme a quella presente sul certificato del produttore

Contrôle de marquage, d'aspect et de dimensions satisfaisant. Nous certifions que le présent document reproduit avec exactitude les données du certificat producteur. L'analyse chimique a été relevée du certificat de la matière première.

Bezeichnung, besichtigung und ausmessung : Ohne beanstandung. Wir bestatigen hiermit dass die obengenannten erzeuggnisse den bestellung vorschriften entsprechen. Die chemishe zusammensetzung entspricht den lieferanten analyse.

The chemical analysis results are true and correct copy of the raw material supplier's certificate.
Marking, inspection and measurement : Without objections. We certify that the above mentioned products are consistent with the order prescriptions.

Resp. controllo qualità
Resp. contrôle qualité
Sachverstandiger
Quality control Mgr

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXXXX-QA-123456

EDMS Document No.
666666

Certificate of Conformity
for CERN supplied components

1. ***Part description***	2. ***CERN Part ID*** *(19 chars)*			5. ***Other identification***
	3. ***Part No.*** *(10 chars)*	-	4. ***Serial No.*** *(8 chars)*	
Temperature sensor lamination type A4	HCMB_ _ A128	-	MAL00006	Batch N° MAL00006
	HCMB_ _ A128	-	MAL00009	Batch N° MAL00009
	HCMB_ _ A128	-	MAL00012	Batch N° MAL00012
		-		
		-		
		-		
		-		
		-		

6. ***Recipient contractor:***	ANSALDO		
7. ***Contract / Order No :***	Order for LHC dipole series production		
8. ***Responsible person at CERN:***	Aniello RUSSO	***Tel.***	00 41 22 767 2977
		E-mail.	Aniello.Russo@cern.ch
9. ***Reference specification:***	LHC-MB_A-C1-0019		
10. ***Reference drawings:***	LHCMB_ _A0128		
11. ***Part manufactured by:***	Ernesto Malvestiti s.p.a (IT)		
12. ***Acceptance test refs:***	See attachment paper		
13. ***Acceptance test results:***	Conform to Technical Specification		
14. ***Comments:***	The total quantity of sensor lamination type A4 is for all LHC series dipoles.		

CERN certifies that the supplied material is conform to the reference specification.

Date :	***Name :***	***Signature :***
4 – 2 - 2002	Aniello RUSSO	

ERNESTO MALVESTITI SPA
STAMPI
DI PRECISIONE

CERTIFICATE OF CONFORMITY FOR FINE BLANKED YOKE LAMINATIONS

ORDER/CONTRACT N° **CA1183822**

Batch id: M A L 0 0 0 0 6 **Box id:**

Batch Consisting of 10 BOXES with 220 pieces = 2200 pcs.

Steel Sheet Pallet Number: 952216-0002/5; 958743-0003/4; 956687-0003

Batch Type: Lamination TYPE A4, LHCMB_ _A0128

Date of Batch Production: June-July / 2001 **Firm Destination: CERN**

TEST RESULTS

Sample n°	Test Level	Report N°*	Date	Responsible	Signature
First	A	A006/1	28-Jun-01	Name: Umberto Raggio	Umberto Raggio

*This Cerficate and results are saved on file download on CERN Website and available through CERN project Ingeneer.

We certify that the quality control and the results are conforming to the requirements of CERN order/contract mentioned above.

Date: 18/7/2001 **Seal/Segnature** Umberto Raggio

Gruppo Fabbricazioni Meccaniche

GFM S.R.L.
24030 BREMBATE SOPRA (BG) Italy - Via Lesina, 45
Telefono 035.33.29.98 - Telefax 035.33.29.97
E-Mail: gfmgan@tin.it

ATTESTATO DI CONFORMITA' *Conformity certificate*	**NR./ no.** 83
	Data / *date* 20/07/2001
CLIENTE / customer ANSALDO SUPERCONDUTTORI SPA Via N.Lorenzi,8 16152 Genova	**VS.ORDINE** / *Ord.n.* **BC234322** **Data** / *date* 24/05/2001
POSIZIONE / *Item* **002-004**	**COMMESSA** / *Job* **F10209EM**
Ns.bolla n. **715** **del** **20/07/2001**	**Allegato certificati materiale**

In riferimento al Vostro ordine sopra citato

con la presente attestiamo che il materiale consegnato

è conforme a quanto da Voi richiesto e che il controllo

dimensionale è conforme ai disegni

Allegati
Certificato Columbus n°47677

ESEGUITO DA /made by	**G F M srl** **Collaudo** *A.Oldoni*	**BENESTARE DA** / *cheked by*

COLUMBUS STAINLESS ®

INSPECTION CERTIFICATE 3.1.B

To: EN 10204

No./Nr.: 154480
Date/Datum: 26 Mar 199

P.O. Box ... MIDDELB... South A...
Tel: (27-13) 247-...
Fax: (27-13) 248-...
COLUMBUS STAINL... A Division of Columbus Joint...

MANUFACTURER'S MARK / Herstellerzeichen: L7

MELTING PROCESS / Erschmelzungsart: E/CLU

SABS ISO 9002

Customer / Besteller:
METALFAR INTERNATIONAL SARL
VIA LISANO 2
MASSAGNO
LUGANO
SWITZERLAND
6900

O/A No. / Unser Auftrag Nr.: 00047677
ITEM No. / Pos Nr.: 033
INSPECTOR'S ST...: L7 — Zeichen des Sachverständig...
CUSTOMER ORDER No. / Kundenbestell-Nr.: IT/08/1124
INSPECT No. / Prüf. Nr.:

PRODUCT / Erzeugnisform: NO 1: Hot Worked, Heat Treated and Pickled.

HEAT No. / Schmelze-Nr.: 308499
MPO No.: 3084991/1

SPECIFICATIONS / Norm:
DIN 17440 SEPT 1996
A... A240 -96A
ASME SA240-1995 (A96)
NF A 36-209 MAY 1990
EN 10029: 1991 CLASS A

MATERIAL CODE / Werkstoff:
1.4306
304L
304L
Z3CN1810

FOTOCOPIA CONFORME ALL'ORIGINALE
GRIFFINI & MORANO S.p.A.
REPARTO INOX
16 ... 2000
CORSICO

REQUIREMENTS / Anforderungen: KURZNAME X2CrNi 19 11

QUANTITY / Stückzahl: 2
MASS kg / Gewicht: 3201

DIMENSIONS / Abmessung: 1500 mm x 22.000 mm x 6000

CHEMICAL ANALYSIS / Chemische Zusammensetzung

	REQUIREMENT MIN	REQUIREMENT MAX	LADLE / Schmelze
% C		0.030	0.022
% S		0.015	0.0052
% P		0.045	0.024
% Mn		2.00	1.12
% Si		1.00	0.56
% Ni	10.00	12.00	10.23
% Cr	18.00	20.00	18.51
% Mo			
% Ti			
% N		.1100	0.0345

MECHANICAL PROPERTIES / Mechanische Werte

	Test Dir.	Rp 0.2 (0.2% Proof Str)	Rp 1.0 (1% Proof Str)	Rm (UTS)	A (Elongation)	Dimensions of Specimen	Hardness HB1840	Bend Test	Impact Test ISO V
Req @ 20°C MPa		180 min	215 min	460-680	40 min	0.00 x 22.00			
1	T	269	319	592	48	22.00	133		
2									
Req @ °C									
Req @ °C									
4									
Req @ °C									
5									

INTERGRANULAR CORROSION / Int. Krist. Korrosion

SPECIFICATION Norm	RESULT
DIN 50914	PASS

HEAT TREATMENT / Wärmebehandlung

Anneal °C	Quench
1000 - 1080	AIR/ SPRA...

Tests to verify batch and quality have been made.
Verwechslungsprüfung wurde durchgeführt.

Visual and dimensional control: no exceptions.
Besichtigungen und Abmessungen: ohne Beanstandung.

The delivery is in accordance with the order.
Die Lieferung entspricht den Bestellbedingungen.

This material is free from mercury contamina... The radiation level exhibited by this material i... greater than the normal background level.

This document may only be reproduced i... Written approval from the Mechanical Meta... Laboratory is required.

Prime Material

NS. COM. 968/00 -GFTI-

COLUMBUS STAINLESS
HENDRINA ROAD, MIDDELBURG
MPUMALANGA, SOUTH AFRICA

WORKS EXPERT

TOTALE P.01

TRAFILERIE BEDINI
GRUPPO USINOR

- Cap. Soc. 5.000.000.000
d. Fisc. 01004760052 - P. IVA IT 10810010156
scr. Reg. Impr. Milano 333941
R.E.A. Milano 1349150
Sede e Stabilimento: Via G. Di Vittorio, 34-36
20068 Peschiera Borromeo (MI) Italia
Tel. ++39 02.54.74.31 - Fax ++39 02.54.73.483

AZIENDA CERTIFICATA
UNI EN ISO 9002:94
IQ0 6021

DOC. DI TRASPORTO 0075794 14/11/00

N° Cliente/tel : 002010 /010-65551
Filiale : 12 Agenzia P.B.
Responsabile : 0L1 POGGIOLI Pagina : 1

CLIENTE
ANSALDO ENERGIA S.P.A.
VIA N. LORENZI N.8

16152 GENOVA GE0
Italia

Destinazione della merce

DESTINATARIO
ANSALDO ENERGIA S.P.A.(CF 06278)
VIA N. LORENZI N.8

16152 GENOVA GE0
Italia

Indicazioni relative al trasporto

Trasporto : Vettore
Porto : CPT
F.O. : Ns.Deposito
Ns. Deposito : Pesch.Borr.
Linea trasporto : H 006 Lig

Numero colli 2
Imballo : CH 002
Mod. pagamento :
Causale uscita : VENDITA

Trasportatore	Data	Ora	Firma	Peso netto	Peso lordo	Tara : 612,000
G FACCHINI GAGGIANO (MI)	16 NOV. 2000			2766,000	3378,000	Valore :

N° Po	Descrizione	Quantità ordinata	Quantità spedita	U.	SALD	Peso Netto
	NR. ORDINE 004055128 21/04/00 **Riferimento GE-BC 231402 GEFO GMO 0 0** **Corr. Int. : Gandini Rita**					
1	Barre Tonde 4435IMA-316LMO Rettificato Solubilizzato 14,0 h7 POS.1 - UM01862 ABC 2 Biselli 45 BARRE MM.14603+0-3 COMM. F10209EM F60 LHC GINEVRA VS.DIS.620RM08240 REV.C Colata Nr.Lot Nr.Colli Quantita 312031 0374965 00001 1235,000 Casse	1225,000	1235,000	KG	S	1235,000
2	Barre Tonde 4435IMA-316LMO Rettificato Solubilizzato 22,0 h7 POS.2 UM 1862 ABC 2 Biselli 45 BARRE MM. 14657+0-3 COMM. F10209EM F60 LHC GINEVRA VS.DIS.620RM08241 REV.D Colata Nr.Lot Nr.Colli Quantita 015035 0374970 00001 1531,000 Casse	1510,000	1531,000	KG	S	1531,000
4	Imballo Imballo POS.3 ABC COMM.F10209EM F60					

Vettori	Data	Ora	Firma	Firma del Cliente
				14/11/00

NATURA DEI BENI : ACCIAIO

BBII

鋼材検査証明書
INSPECTION CERTIFICATE

新日本製鐵株式會社
Nippon Steel Corporation
本社：〒100-8071 東京都千代田区大手町二丁目6番3号
HEAD OFFICE 6-3,OTEMACHI 2-CHOME,CHIYODA-KU,TOKYO 100-8071,JAPAN
光製鐵所：〒743-8510 山口県光市大字鼓田3434番地
HIKARI WORKS 3434,SHIMATA,HIKARI CITY,YAMAGUCHI PREF.743-8510,JAPAN

注文者 SHIPPER: MITSUI & CO., LTD.
注文者照合番号 REFERENCE No.: 17961 -S809511
契約番号 CONTRACT No.: 0-868-TL-5-0-EA03
商品名 COMMODITY: COLD ROLLED STAINLESS STEEL SHEET IN COIL
規格 SPECIFICATION: YUS130S
特記 NOTE:
ITEM No.: 01 SIZE: 0.5X840XC

需要家 CUSTOMER: EUROPEAN ORGANIZATION FOR NUCL-EAR RESERCH 'CERN'
需要家管理番号 CUSTOMER'S CONTROL No.:
FINISH : NO.2B

証明書番号 CERTIFICATE No.: 00TL102988
頁 PAGE: 1E
発行年月日 DATE OF ISSUE: 2000-12-14

行番 ITEM No	管理番号・CONTROL No. CASE No.	検査番号 INSPECTION No.	(製鋼番号 CAST No.) コイル番号 COIL No.	員数 QUANTITY	NET MASS ACT. KG(G.M)	T.T(GL=50MM) YS-L 0.2%	TS-L MPA	EL-L %	H.T CAST ANALYSIS (%) HV	C X100	SI X100	MN X10	P X1000	S X1000	NI X100	CR X100	MO X100	N X100
01	1	0Y-32574	(E85525) 56-5816		2607 (2667)	425	783	45	213	8	46	115	20	0	656	1774	8	30

注釈 NOTES
ACT. : ACTUAL
(G.M) : GROSS MASS
L : LONGITUDINAL
T.T : TENSILE TEST
H.T : HARDNESS TEST

上記注文品は御指定の規格または仕様に従って製造され、その要求事項を満足していることを証明します。
WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MADE IN ACCORDANCE WITH THE RULES OF THE CONTRACT.

T. Matsumoto

光製鐵所 生産管理部
ステンレス鋼板管理グループリーダー
MANAGER, INSPECTION
HIKARI WORKS

091 E 07- 1

1. Exporter (Name, address, country)

MITSUI & CO., LTD.
2-1, OHTEMACHI 1-CHOME, CHIYODA-KU,
TOKYO, JAPAN

CERTIFICATE OF ORIGIN

issued by
The Tokyo Chamber of Commerce & Industry
Tokyo, Japan

2. Consignee (Name, address, country)

TO ORDER

*Print ORIGINAL or COPY

ORIGINAL

3. No. and date of Invoice

T1321281
2000/12/07

4. Country of Origin

JAPAN

5. Transport details

FROM : KOBE, JAPAN
TO : HAMBURG, GERMANY
BY : MAAS
ON OR ABOUT : 2001/01/09

6. Remarks

BUYER : MITSUI & CO. DEUTSCHLAND G.M.B.H.
(DUSSELDORF)
KONIGSALLEE 63-65, 40215 DUSSELDORF
GERMANY
(DUSII)

7. Marks, numbers, number and kind of packages; description of goods		8. Quantity
YUS130S CAST NO. C/NO.1 NIPPON STEEL CORP. MADE IN JAPAN	STAINLESS STEEL SHEET IN COIL 1 SKID	2.607 NET WT. M/T

9. Declaration by the Exporter

The undersigned, as an authorized signatory, hereby declares that the above-mentioned goods were produced or manufactured in the country shown in box 4.

Place and Date: Tokyo JAN 17 2001

(Signature)

(Name) Shigeo Hayashi

10. Certification

The undersigned hereby certifies, on the basis of relative invoice and other supporting documents, that the above-mentioned goods originate in the country shown in box 4 to the best of its knowledge and belief.

The Tokyo Chamber of Commerce & Industry

Yasumi Iwamasa

JAN. 17 2001

(No., Date, Signature and Stamp of Certifying Authority)

Certificate No.

TOPPANFORMS 1-6 KANDA SURUGADAI, CHIYODA-KU, TOKYO, JAPAN Japan CCI Ref. No. 1701-A

CERN
CH-1211 Geneva 23
Switzerland

LHC Project Document No.
LHC-XXX-FR-0000 rev. **1.0**

EDMS Document No.
---

the **Large Hadron Collider** project

Certificate of Conformity
for CERN Delivered Components

Part name:	Copper Wedges type 1
Part ID:	HCMB__A052
Serial No. / Batch No.:	Batch n° 08
Manufacturer:	OUTOKUMPU
Contract / Order No.:	
Comment on delivery:	Quantity delivered to Ansaldo for coil number 25 to 34

Responsible person at CERN:	Diego Perini	***Tel.***	+00 41 22 767 23 47
		E-mail.	Diego.Perini @cern.ch

Related tech. specification:	LHC-MB_A-C1-0016
Related drawings:	LHC-MB__A0052
Acceptance test references:	See attachment paper
Acceptance test results:	Conform

CERN certifies that the delivered material is conform to the technical specification mentioned above.

Date:	***Name:***	***Signature***
2000-07-04	Diego Perini	

outokumpu

CERTIFICATE OF CONFORMITY
INCL. THE TEST CERTIFICATE

MRi/LAL

8.6.2000

Customer	Cern,CH-1211 Geneve 23
Consignee	Ansaldo Energia SPA
Shipper	Outokumpu Copper Products
Contract	F 313/LHC/LHC
Commodity	OF-OK Copper wedge profile 1677
Drawing	LHCMB_ _A00522
Inspection certificate	607646/001 dtd 8.6.2000
Batch no.	08
Cast no.	93-1

Dimensions	conform
Straightness	conform
Hardness	conform
Surface, finish and cleaning	conform

For the measured values see the inspection certificate 607646/001 dtd 8.6.2000.

We hereby certify that the material described herein has been made in accordance with the rules of the contract.

OUTOKUMPU PORICOPPER OY

Matti Riihimäki
Authorized inspector

OUTOKUMPU COPPER RESEARCH & DEVELOPMEN

OUTOKUMPU PORICOPPER OY

Kuparitie, PO Box 60, FIN-28101, Pori, Finland
Tel. +358 2 626 6111, Fax +358 2 626 5314
Domicile: Pori, Finland. Trade register number: 412.903

COPPER PRODUCTS
BUSINESS AREA

outokumpu

CERTIFICATE OF CONFORMITY
INCL. THE TEST CERTIFICATE

MRi/LAL

8.6.2000

Customer	Cern,CH-1211 Geneve 23
Consignee	Ansaldo Energia SPA
Shipper	Outokumpu Copper Products
Contract	F 313/LHC/LHC
Commodity	OF-OK Copper wedge profile 1680
Drawing	LHCMB_ _A00582
Inspection certificate	607646/004 dtd 8.6.2000
Batch no.	08
Cast no.	91-2

Dimensions	conform
Straightness	conform
Hardness	conform
Surface, finish and cleaning	conform

For the measured values see the inspection certificate 607646/004 dtd 8.6.2000.

We hereby certify that the material described herein has been made in accordance with the rules of the contract.

OUTOKUMPU PORICOPPER OY

Matti Riihimäki
Authorized inspector

OUTOKUMPU COPPER RESEARCH & DEVELOPMEN

OUTOKUMPU PORICOPPER OY

Kuparitie, PO Box 60, FIN-28101, Pori, Finland
Tel. +358 2 626 6111, Fax +358 2 626 5314
Domicile: Pori, Finland. Trade register number: 412.903

COPPER PRODUCTS
BUSINESS AREA

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXX-FR-0000 rev. **1.0**

EDMS Document No.

Certificate of Conformity
for CERN Delivered Components

Part name:	Copper Wedges type 4
Part ID:	HCMB__A058
Serial No. / Batch No.:	Batch n° 08
Manufacturer:	OUTOKUMPU
Contract / Order No.:	
Comment on delivery:	Quantity delivered to Ansaldo for coil number 25 to 34

Responsible person at CERN:	Diego Perini	***Tel.***	+00 41 22 767 23 47
		E-mail.	Diego.Perini @cern.ch

Related tech. specification:	LHC-MB_A-C1-0016
Related drawings:	LHC-MB__A0058
Acceptance test references:	See attachment paper
Acceptance test results:	Conform

CERN certifies that the delivered material is conform to the technical specification mentioned above.

Date:	***Name:***	***Signature***
2000-07-04	Diego Perini	P.O. P. Lidwach

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TM

EN 10 204 Page 1 (1)
INSPECTION CERTIFICATE 3.1.B
08.06.2000

CERN
FINANCE DIV. ACCOUNTS PAYABLE
CH-1211 GENEVE 23

SWITZERLAND

Your order
CONTRACT NO. F313/LHC/LHC

Our reference
607646

Invoice/data

Marks
ANSALDO ENERGIA SPA

Item	Product, Grade and Size			
003	OF-OK COPPER PROFILE NO 1679 DRAW. LHCMB-A00562 COPPER WEDGE BATCH NO.08, PROFILE 3 CAST NO. 153-1	815,0	KG	607646/003

Mechanical properties

Item	Tensile strengh R_m N/mm^2	0.2 % proof strength $R_{p0.2}$ N/mm^2	Elongation %		Hardness		Grain size mm
003	326	317	A5	13	HV10	99	
	317	316	A5	16	HV10	100	
	325	320	A5	13	HV10	101	

Chemical composition %
Cu min 99,99
O <0,0005

Electrical conductivity at 20 ° C % IACS (mass), annealed
100,2; 100,1; 100,2

We hereby certify, that the material described above complies with the order
OUTOKUMPU PORICOPPER OY

Matti Riihimäki
Authorized Inspector

Address P.O.Box 60 FIN-28101 PORI FINLAND
Telephone +358 2 626 6111
Telefax +358 2 626 5314

This document has been printed out throuh electronic mail.
A copy with original signature is available in our factory

outokumpu

CERTIFICATE OF CONFORMITY
INCL. THE TEST CERTIFICATE

MRi/LAL

8.6.2000

Customer	Cern,CH-1211 Geneve 23
Consignee	Ansaldo Energia SPA
Shipper	Outokumpu Copper Products
Contract	F 313/LHC/LHC
Commodity	OF-OK Copper wedge profile 1679
Drawing	LHCMB_ _A00562
Inspection certificate	607646/003 dtd 8.6.2000
Batch no.	08
Cast no.	153-1

Dimensions	conform
Straightness	conform
Hardness	conform
Surface, finish and cleaning	conform

For the measured values see the inspection certificate 607646/003 dtd 8.6.2000.

We hereby certify that the material described herein has been made in accordance with the rules of the contract.

OUTOKUMPU PORICOPPER OY

Matti Riihimäki
Authorized inspector

OUTOKUMPU COPPER RESEARCH & DEVELOPMEN

OUTOKUMPU PORICOPPER OY

Kuparitie, PO Box 60, FIN-28101, Pori, Finland
Tel. +358 2 626 6111, Fax +358 2 626 5314
Domicile: Pori, Finland. Trade register number: 412.903

COPPER PRODUCTS
BUSINESS AREA

CERN
CH-1211 Geneva 23
Switzerland

LHC Project Document No.
LHC-XXX-FR-0000 rev. **1.0**
EDMS Document No.
———

the **Large Hadron Collider** project

Certificate of Conformity
for CERN Delivered Components

Part name:	Copper Wedges type 3
Part ID:	HCMB__A056
Serial No. / Batch No.:	Batch n° 08
Manufacturer:	OUTOKUMPU
Contract / Order No.:	
Comment on delivery:	Quantity delivered to Ansaldo for coil number 25 to 34
Responsible person at CERN:	Diego Perini — ***Tel.*** +00 41 22 767 23 47 — ***E-mail.*** Diego.Perini @cern.ch
Related tech. specification:	LHC-MB_A-C1-0016
Related drawings:	LHC-MB__A0056
Acceptance test references:	See attachment paper
Acceptance test results:	Conform

CERN certifies that the delivered material is conform to the technical specification mentioned above.

Date:	***Name:***	***Signature***
2000-07-04	Diego Perini	

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EN 10 204 Page 1 (1)
INSPECTION CERTIFICATE 3.1.B
08.06.2000

CERN
FINANCE DIV. ACCOUNTS PAYABLE
CH-1211 GENEVE 23

SWITZERLAND

Your order
CONTRACT NO. F313/LHC/LHC

Our reference
607646

Invoice/data

Marks
ANSALDO ENERGIA SPA

Item	Product, Grade and Size		
002	OF-OK COPPER PROFILE NO 1678 DRAW. LHCMB-A00542 COPPER WEDGE BATCH NO.08, PROFILE 2 CAST NO. 151-1	731,0 KG	607646/002

Mechanical properties

Item	Tensile strengh R_m N/mm^2	0.2 % proof strength $R_{p0.2}$ N/mm^2	Elongation %		Hardness		Grain size mm	
002	332	322	A5	15	HV10	97		
	322	320	A5	14	HV10	100		
	322	318	A5	16	HV10	100		

Chemical composition %
Cu min 99,99
O <0,0005

Electrical conductivity at 20 ° C % IACS (mass), annealed
100,1; 100,1; 100,2

We hereby certify, that the material described above complies with the order
OUTOKUMPU PORICOPPER OY

Matti Riihimäki
Authorized Inspector

Address
P.O.Box 60 FIN-28101 PORI FINLAND
Telephone +358 2 626 6111
Telefax +358 2 626 5314

outokumpu

CERTIFICATE OF CONFORMITY
INCL. THE TEST CERTIFICATE

MRi/LAL

8.6.2000

Customer	Cern,CH-1211 Geneve 23
Consignee	Ansaldo Energia SPA
Shipper	Outokumpu Copper Products
Contract	F 313/LHC/LHC
Commodity	OF-OK Copper wedge profile 1678
Drawing	LHCMB_ _A00542
Inspection certificate	607646/002 dtd 8.6.2000
Batch no.	08
Cast no.	151-1

Dimensions	conform
Straightness	conform
Hardness	conform
Surface, finish and cleaning	conform

For the measured values see the inspection certificate 607646/002 dtd 8.6.2000.

We hereby certify that the material described herein has been made in accordance with the rules of the contract.

OUTOKUMPU PORICOPPER OY

Matti Riihimäki
Authorized inspector

OUTOKUMPU COPPER RESEARCH & DEVELOPMEN

OUTOKUMPU PORICOPPER OY

Kuparitie, PO Box 60, FIN-28101, Pori, Finland
Tel. +358 2 626 6111, Fax +358 2 626 5314
Domicile: Pori, Finland. Trade register number: 412.903

COPPER PRODUCTS
BUSINESS AREA

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXX-FR-0000 rev. **1.0**

EDMS Document No.

Certificate of Conformity
for CERN Delivered Components

Part name:	Copper Wedges type 2
Part ID:	HCMB__A054
Serial No. / Batch No.:	Batch n° 08
Manufacturer:	OUTOKUMPU
Contract / Order No.:	
Comment on delivery:	Quantity delivered to Ansaldo for coil number 25 to 34

Responsible person at CERN:	Diego Perini	***Tel.***	+00 41 22 767 23 47
		E-mail.	Diego.Perini @cern.ch

Related tech. specification:	LHC-MB_A-C1-0016
Related drawings:	LHC-MB__A0054
Acceptance test references:	See attachment paper
Acceptance test results:	Conform

CERN certifies that the delivered material is conform to the technical specification mentioned above.

Date:	***Name:***	***Signature***
2000-07-04	Diego Perini	

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EN 10 204 Page 1 (1)

INSPECTION CERTIFICATE 3.1.B

08.06.2000

TM

CERN
FINANCE DIV. ACCOUNTS PAYABLE
CH-1211 GENEVE 23

SWITZERLAND

Your order
CONTRACT NO. F313/LHC/LHC

Our reference
607646

Invoice/data

Marks
ANSALDO ENERGIA SPA

Item	Product, Grade and Size		
001	OF-OK COPPER PROFILE NO 1677 DRAW. LHCMB-A00522 COPPER WEDGE BATCH NO.08, PROFILE 1 CAST NO. 93-1	432,5 KG	607646/001

Mechanical properties

Item	Tensile strengh R_m N/mm^2	0.2 % proof strength $R_{p0.2}$ N/mm^2	Elongation %		Hardness		Grain size mm
001	328	320	A5	14	HV10	102	
	329	319	A5	15	HV10	101	
	331	321	A5	14	HV10	100	

Chemical composition %

Cu min 99,99
O <0,0005

Electrical conductivity at 20 ° C % IACS (mass), annealed

100,1; 100,1; 100,1

We hereby certify, that the material described above complies with the order
OUTOKUMPU PORICOPPER OY

Matti Riihimäki
Authorized Inspector

Address
P.O.Box 60 FIN-28101 PORI FINLAND
Telephone +358 2 626 6111
Telefax +358 2 626 5314

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EN 10 204 Page 1 (1)
INSPECTION CERTIFICATE 3.1.B
08.06.2000

CERN
FINANCE DIV. ACCOUNTS PAYABLE
CH-1211 GENEVE 23

SWITZERLAND

Your order
CONTRACT NO. F313/LHC/LHC

Our reference
607646

Invoice/data

Marks
ANSALDO ENERGIA SPA

Item	Product, Grade and Size		
004	OF-OK COPPER PROFILE NO 1680 DRAW. LHCMB-A00582 COPPER WEDGE BATCH NO.08, PROFILE 4 CAST NO. 91-2	656,0 KG	607646/004

Mechanical properties

Item	Tensile strengh R_m N/mm^2	0.2 % proof strength $R_{p0.2}$ N/mm^2	Elongation %		Hardness		Grain size mm	
004	321	312	A5	18	HV10	101		
	325	314	A5	15	HV10	102		
	324	313	A5	17	HV10	101		

Chemical composition %
Cu min 99,99
O <0,0005

Electrical conductivity at 20 ° C % IACS (mass), annealed
100,2; 100,2; 100,2

We hereby certify, that the material described above complies with the order
OUTOKUMPU PORICOPPER OY

Matti Riihimäki
Authorized Inspector

Address P.O.Box 60 FIN-28101 PORI FINLAND
Telephone +358 2 626 6111
Telefax +358 2 626 5314

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-MB-FR-0001

EDMS Document No.
MB_0001

Certificate of Conformity
for CERN Delivered Components

Part name:	Cable Stabilisation inner and outer layer
Part ID:	HCMB__A0049/50
Serial No. / Batch No.:	0_2
Manufacturer:	TREFIMETAUX
Contract / Order No.:	CA/1168503(1)
Comment on delivery:	Consists of. 26. sets. Cold masses 4 to 30
Responsible person at CERN:	Diego Perini — ***Tel.*** +00 41 22 767 2347 — ***E-mail.*** Diego.Perini@cern.ch
Related tech. specification:	LHC-MMS/98-198 rev. 1.1 (Doc. N° IT-2325)
Related drawings:	LHCMB_A0049/50 rev. as per Tech. Spec. mentioned above
Acceptance test references:	(Measured by Projector of profile BATY G=10x)
Acceptance test results:	CONFORM (dimensions are in the indicated tolerances)

CERN certifies that the delivered material is conform to the technical specification mentioned above.

Date:	***Name:***	***Signature***
2000-04-10	Carlos Lopez	

ANSALDO

Misure di permeabilità magnetica su AISI 316

Magnetic permeability meas. on AISI 316

num./rif.	spess. tot.	mu				
	(mm)	p. liscia		p. ondulata	piega a 90°	
		min.	max.	max.	min.	max.
Misure a T ambiente su campioni "vecchi" presi come riferimento						
Prot.sheet "vecchi"	0,3	1,0004	1,0006			
"	0,6		1,0020	1,0022		1,0020
"	1,2		1,0020	1,0030		1,0020
shim-retainer	0,9	1,0015	1,0030			1,0020
Misure a T ambiente prima a e dopo n.3 cicli in azoto liquido						
prot.sheet e shim-retainer						
prima dei 3 cicli in L-N2	0,6	1,0010	1,0015	1,0020	1,0020	1,0024
dopo i 3 cicli in L-N2	0,6	1,0010	1,0015	1,0025	1,0022	1,0024
lam. di prova AVESTA						
prima dei 3 cicli in L-N2	0,5		1,0012		1,0015	1,0020
dopo i 3 cicli in L-N2	0,5		1,0015		1,0015	1,0022

NOTE

Misure effettuate su più lamierini sovrapposti (in alcuni casi) e in almeno 3 punti per ciascun tipo superfi

Strumentazione: FOERSTER-Magnetoscop 1.068

Calibrazione strumento:val nominale 1.0035; valore misurato 1.0040

Fondo scala=1+0.003

Indeterminazione sulle misure= 1/10 f.s.=+/- 0.0003

Misure di permeabilità magnetica su AISI 316

Magnetic permeability meas. on AISI 316

num./rif.	spess. tot. (mm)	mu		f.s.
		min.	max.	
Misure a T ambiente **prima** della calibrazione dello strumento				
campione mu=1.021		1,019	1,020	*1,100*
campione mu=1.0035		1,0032	1,0035	*1,0100*
Noell	1	1,0029		*1,0100*
ASC	1	1,0010		*1,0030*
Precisinox AISI 316 ricotto sp.0.1	1	1,0010		*1,0030*
Precisinox AISI 316 ricotto sp.0.2	2	1,0010		*1,0030*
Precisinox AISI 316 ricotto sp.0.2	2	1,0008	1,0010	*1,0030*
Precisinox AISI 316 ricotto, dopo 3 cicli in azoto sp.0.2	2	1,0010		*1,0030*
AISI 316 ric. Precisinox				
Misure a T ambiente **dopo** la calibrazione dello strumento				
campione mu=1.021		1,021	1,022	*1,100*
campione mu=1.0035		1,0035	1,0038	*1,0100*
Precisinox AISI 316 ricotto sp.0.2	3	1,0021		*1,0030*

NOTE

Misure effettuate su più lamierini sovrapposti

Strumentazione: FOERSTER-Magnetoscope 1.068

Indeterminazione sulle misure= 1/10 f.s.

UDD-FIM département ISOLANTS

ATTESTATION DE CONFORMITE A LA COMMANDE
CERTIFICATE OF COMPLIANCE WITH THE ORDER
WERKSBESCHEINIGUNG

N° : 013197

EN 10204-2.1

Client Customer Kunde	152021 ANSALDO ENERGIA SPA VIA NICOLA LORENZI IT-16152 GENOVA ITALIE
Commande N° Order N° Bestellung Nr	BC 234572 — Date : 16/10/2000
Notre commande N° Our order N° Unsere Auftrags-Nr	128766/ 006

Désignation designation Bezeichnung	Référence ou type Reference or type Nummer oder Typ	Quantité Quantity Stückzahl	N° de série ou de lot Serial or batch number Serien oder Losnummer
BANDES G11 64170 BANDES G11 8000X15,6XEPAIS0,8	6 64175 0140046 99	40,00 P	

Nous certifions que la livraison est conforme aux stipulations de l'acceptation de la commande.
We certify, that the delivery complies with the terms of the order.
Es wird bestätigt, dass die Lieferung den Vereinbarungen bei der Bestellannahme entspricht.

Signature :
Unterschrift :

Date : 14/11/2000

UDD-FIM, S.A. - B.P. 49 - 90101 DELLE Cedex/France
Téléphone 03 84 36 84 36 - Télex 361 849 - Télécopie UDD 03 84 56 32 02
Capital 117 200 000 FRF, R.C. Belfort B 536 620 040, SIREN 536 620 040
N° ID. TVA FR20536620040

UDD-FIM département ISOLANTS

ATTESTATION DE CONFORMITE A LA COMMANDE
CERTIFICATE OF COMPLIANCE WITH THE ORDER
WERKSBESCHEINIGUNG

N° : 013138

EN 10204-2.1

Client Customer Kunde	152021 ANSALDO ENERGIA SPA VIA NICOLA LORENZI IT-16152 GENOVA ITALIE
Commande N° Order N° Bestellung Nr	BC 234572 — Date : 16/10/2000
Notre commande N° Our order N° Unsere Auftrags-Nr	128766/ 007

Désignation designation Bezeichnung	Référence ou type Reference or type Nummer oder Typ	Quantité Quantity Stückzahl	N° de série ou de lot Serial or batch number Serien oder Losnummer
BANDES G11 64170 BANDES G11 7000X15,6XEPAIS0,8	6 64175 0140045 99	40,00 P	

Nous certifions que la livraison est conforme aux stipulations de l'acceptation de la commande.
We certify, that the delivery complies with the terms of the order.
Es wird bestätigt, dass die Lieferung den Vereinbarungen bei der Bestellannahme entspricht.

Signature :
Unterschrift :

Date : 14/11/2000

UDD-FIM, S.A. - B.P. 49 - 90101 DELLE Cedex/France
Téléphone 03 84 36 84 36 - Télex 361 849 - Télécopie UDD 03 84 56 32 02
Capital 117 200 000 FRF, R.C. Belfort B 536 620 040, SIREN 536 620 040
N° ID. TVA FR20536620040

PRECISINOX S.R.L.

CERTIFICATO N° 6710/02

CERTIFICATO DI ANALISI PERCENTUALE DEL MATERIALE CONSEGNATOVI CON NOSTRO D.D.T. N° 409 DEL 19/03/02

Vs. ordine n°496 del 01/03/02

NASTRO ACCIAIO AISI 316/L RICOTTO DIMENSIONI mm 0,20x15,6 bordi s.vati

Codice collaudo: 11110

C	=	0.017
Si	=	0.585
Mn	=	1.550
P	=	0.026
S	=	0.003
Cr	=	16.688
Ni	=	10.195
Mo	=	2.064

R ≅ 618 N/mm2

COLATA N° 063896

LOTTO N° 23071B

Zingonia, 20 marzo 2002

PRECISINOX S.R.L.

Dalmine

CERTIFICATO DI COLLAUDO

(UNI EN 10204 3.1.B)

N. 00/10070

Pagina 1

RIF.ORD. CLIENTE 201573

COMMESSA / POS. 4791596/010

TUBI DI QUALITA' S.R.L.

P.ZA CADUTI 6 LUGLIO 1944
24044 DALMINE BG

PRODOTTO TUBI S.S. DI QUALITA' FINITI A FREDDO PER CILINDRI OLEODINAMICI NORMA DIN 2391/C E CAPITOLATO DALMINE STQ/SDF 114/1 REV.6 SERIE DL ACCIAIO ST 52 DIN 2391 TRATTAMENTO TERMICO DI DISTENSIONE OLEATI CON PT 7 LISCI ALLE ESTREMITA'

DIMENSIONI:	Lgh. Da	Lgh. A	D.E. mm	SP mm
	6500	8500	80,000	5,000

QUANTITA': Nr 106 Mt 848,29 Kg 8042 Ft 2783' 1" Lbs 17729,5

PROVA N. W3287 COLATA N. 902814

TRAZIONE + 20,0^C

PROVETTA	: LONGITUDINALE			SEZIONE	65,4 mm2
SNERVAMENTO 0,2%	(MPA):	rich. min	520	ottenuto	658,0
ROTTURA	(MPA):	rich. min	600	ottenuto	757,0
ALLUNGAMENTO	:	CALIBRATA SU 5D	45,0 mm		
	(%):	rich. min	14,0	ottenuto	19,3

COLATA N. 902814

ANALISI CHIMICA % DI COLATA

C	Mn	Si	P	S	Ti
0,19	1,43	0,28	0,012	0,002	0,016

Nb 0,003 V 0,008

(Nb+V +Ti) = 0,027

IL CONTROLLO VISIVO E DIMENSIONALE HA DATO ESITO SODDISFACENTE

Il presente certificato è valido per:

- CLIENTE TMS spa
- ORDINE N. VS N. FAX 690/01
- BOLLA 3565 DEL 5/12/01 Kg 6611

VALLESTURA TUBI

D A T A 26/09/2000

DALMINE Spa

IL CAPO DEL REPARTO COLLAUDO
Maurizio DI PIETRA

Fine

VALLESTURA SPA TUBI ACCIAIO P.O.
Job N. VM 317332 2001 Pos.00002 NR 0 MT 100,97 KG 2251,00
Heat/Colata N. 910751 Delivery/bolla 18695 To/del 11/09/01

Dalmine
24044 DALMINE (BG) P.Caduti 6 luglio 1944, 1
Telefono 0039 35 560111 - Fax 0039 35 560033
Internet site : www.dalmine.it
Stab./Mill ARCORE (IT)

CERTIFICATO DI COLLAUDO
INSPECTION CERTIFICATE
(UNI EN 10204 3.1.B)

N./N. 01/02975 Pagina/Page 001/002
Data/Date 19/02/2001

DST www.dst.com

Cliente/Customer	Rifer. Ordine Cl./Customer's order	Posiz. Cliente/Customer's Refer	Conferma / Posiz./Mill order
TUBI DI QUALITA' S.R.L.	C202000AT2039750000100000		3792712/030
Indirizzo/Address: P.ZA CADUTI 6 LUGLIO 1944 — Località/Town: 24044 DALMINE BG	Stato/Country: ITALIA	Riferimento EXP/EXP Reference	Avviso di spedizione/Shipping note: 084185 - 16/02/2001

Prodotto/Product
TUBI S.S. TAM NORMA DIN 1629 ACCIAIO ST 52.0 DIN 1629 GREZZI LISCI ALLE ESTREMITA'
SEAMLESS HOT ROLLED STEEL PIPES ACCORDING TO DIN 1629, IN STEEL ST 52.0, BLACK, WITH PLAIN ENDS

Dimensioni/Dimensions

Lgh Dalla From	Lgh Alla To	D.E. mm/O.D. mm	SP mm/W.T. mm	Pezzi/Pieces	Metri/M	Chili/Kg	Feet/Feet	Libbre/Lb
8900	11200	121,000	8,000	14	134,13	2972	440' 1"	6552,1

PROVA DI TRAZIONE/TENSILE TEST

Prova/Test	Colata/Heat	°C	T	L/T	Tipo/Type	Dimensioni/Dimensions		Sez./Sec. mm²	%	Rs N/MM2 Min	Max	Rm N/MM2 Min	Max	Cal	Allungam. (%)/Elongation (%) mm	Min	Ott./Obt.
C5132	910751	+ 20		L	Rec	16,10	8,60	138,5	0,20	355		500	650	5D	65,0	21,0	23,1
										396,0		600,0					

T • 1:0000 P.W.H.T. /AFTER P.W.H.T.; 2:0000 'STRAIN AGEING' /AFTER 'STRAIN AGEING'; 3:0000 P.W.H.T.+0000 'STRAIN AGEING' /AFTER P.W.H.T.+AFTER 'STRAIN AGEING'
L/T • L:LONGITUDINALE/LONGITUDINAL; T:TRASVERSALE/TRANSVERSE
Tipo • Ret:RETTANGOLARE/RECTANGULAR; Str:STRISCIA TUBOLARE/TUBULAR STRIP
Cil:CILINDRICA/ROUND; Tu:TUBOLARE/TUBULAR

PROVE TECNOL./TECHNOL. TESTS

Prova/Test	Col./Heat	T	Mandr. An./Ring exp. Test E	Q	Num.
C5132	910751		1	2	1
			Esito ok/Test ok		

T • 1:0000 P.W.H.T. /AFTER P.W.H.T.; 2:0000 'STRAIN AGEING' /AFTER 'STRAIN AGEING'; 3:0000 P.W.H.T.+0000 'STRAIN AGEING' /AFTER P.W.H.T.+AFTER 'STRAIN AGEING'
E • 1:AD UNA ESTREMITA' /AT ONE END; 2:ALLE 2 ESTREMITA' /AT BOTH ENDS
Q • 1:TUTTI I TUBI/EACH PIPE; 2:1% TUBI PER LOTTO/1% PIPE OF THE LOT; 3:1% TUBI PER LOTTO/1% PIPE OF THE LOT

ANALISI CHIMICHE/CHEMICAL ANALYSIS

			C x100	Si	Mn	P x1000	S	Al x1000
Colata Heat	H	Max	22	55	160	40	35	40
		Min						20
910751	C		18	31	140	14	3	31

PROVA DI TENUTA/LEAK TEST

Tipo/Type	U.M.	Sec.	Valore/Value
CND/NDT	BAR	5	50,0

IL CONTROLLO VISIVO E DIMENSIONALE HA DATO ESITO SODDISFACENTE
VISUAL AND DIMENSIONAL CONTROL HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT

L'ACCIAIO E' DI TIPO CALMATO PRODOTTO AL FORNO ELETTRICO
STEEL IS FULLY KILLED AND PRODUCED BY ELECTRIC FURNACS

Il presente certificato è valido per:
— CLIENTE TMS SRL
— ORDINE N. VS N. FAX 690/01
— BOLLA 3565 Kg#1344
DEL 5/12/01
VALLESTURA TUBI

VALLESTURA SPA TUBI ACCIAIO P.O.
Job N. VM 317332 2001 Pos.00002 NR 0 MT 100,97 KG 2251,00
Heat/Colata N. 910751 Delivery/bolla 18695 To/del 11/09/01

Dalmine

24044 DALMINE (BG) P. Caduti 6 luglio 1944, 1
Stab./Mill ARCORE (1)

CERTIFICATO DI COLLAUDO
INSPECTION CERTIFICATE
(UNI EN 10204 3.1.B)

N./Nr. 01/02975 Pagina/Page 002/002
Data/Date 19/02/2001

www.dst.com

Cliente/Customer: TUBI DI QUALITA' S.R.L.
Indirizzo/Address: P.ZA CADUTI 6 LUGLIO 1944
Località/Town: 24044 DALMINE BG
Stato/Country: ITALIA
Rifer. Ordine Cli/Customer's order: C202000AT20397500000100000
Conferma / Posiz. / Mill order: 3792712/030
Avviso di spedizione/Shipping Note: 084185 - 16/02/2001

Prodotto/Product:
TUBI S.S. TAM NORMA DIN 1629 ACCIAIO ST 52.0 DIN 1629 GREZZI LISCI ALLE ESTREMITA'
SEAMLESS HOT ROLLED STEEL PIPES ACCORDING TO DIN 1629, IN STEEL ST 52.0, BLACK, WITH PLAIN ENDS

Dimensioni/Dimensions

Lgh. Da/Lg. From	Lgh. A/Lg. To	DE mm/O.D. mm	SP mm/W.T. mm	Pezzi/Pieces	Metri/M	Chili/Kg	Feet	Libre/Lb
8900	11200	121,000	8,000	14	134,13	2972	440' 1"	6552,1

FIRME/SIGNATURE

IL CAPO DEL REPARTO COLLAUDO
CHIEF OF INSPECTION DPT
Marco BRAMBILLA

PALINI E BERTOLI S.p.A.

Via E.Fermi 28 33058 SAN GIORGIO DI NOGARO (UD) -ITALY- Tel.0039/0431/621111 Fax. 0039/0431/621244 Cod.Fisc. 12891400157 - Part.IVA 02127490304
CAP.SOC. 32.500.000.000 INT.VERSATO SEDE LEGALE: Via E. Fermi, 28 33058 San Giorgio di Nogaro (Udine) - REGISTRO IMPRESE UDINE n° 8286/2000

CERTIFICATO DI COLLAUDO / INSPECTION CERTIFICATE (EN 10204 3.1.B / DIN 50049 3.1.B)

Fgl.Car. 54.657

Certificato Nn / Data : 50.767 - 20-Mar-2002
Cliente / Customer... : EUSIDER SIDERURGICA SPA - (Ind./ Address) » VIA CARROCCIO,8
CAP, Città / Town.... : 20123 MILANO Pv. MI
Bolla Nm. / Del-Of... : (1.953) 20-Mar-2002
Cliente/Customer Ord. : (627/2002-7435-V1°)
Standard..... : EN 10025

Stato di Fornitura / State of Supply : NATURALE DI LAMINAZIONE / AS ROLLED

Qualità Quality	ID.Placca ID.Plate	Dimensioni Dimension mm.	Col./Lotto Heat/Lot	Provino Test	ANALISI CHIMICA / CHEMICAL ANALYSIS %C	%Si	%Mn	%P	%S	%Cr	%Ni	%Cu	%Al	%Mo	%Nb	%V	%N	CEQ.	CARATT.MECCANICHE/MECHANICAL TEST- Rm/Rt N/mm2	ReH/y N/mm2	A %	KV °C	1ª J	2ª J	3ª J
S275JR...	9G.1327.02.....	20x2500x12000...	220815/A0..	CB6547	0,180	0,210	0,960	0,017	0,015	.....	.....	.....	0,033	.....	.....	.....	.....	.....	...466	...313	..32,0	...	...	...	...
S275JR...	9G.1329.01.....	20x2500x12000...	120849/AA..	.....	0,180	0,210	0,920	0,018	0,017	.....	.....	.....	0,032	.....	.....	.....	.....	.....	...473	...305	..31,1	...	...	...	...
S275JR...	9G.1331.04.....	20x2500x12000...	120849/AA..	.....	0,180	0,210	0,920	0,018	0,017	.....	.....	.....	0,032	.....	.....	.....	.....	.....	...473	...305	..31,1	...	...	...	...
S275JR...	9G.1333.01.....	20x2500x12000...	220814/AA..	.....	0,180	0,210	0,920	0,018	0,018	.....	.....	.....	0,032	.....	.....	.....	.....	.....	...473	...305	..31,1	...	...	...	...
S275JR...	9G.1284.02/A...	12x2500x12000...	220802/AB..	CB6473	0,170	0,240	1,000	0,017	0,015	.....	.....	.....	0,039	.....	.....	.....	.....	.....	...469	...325	..31,5	...	...	...	...
S275JR...	9G.1284.02/B...	12x2500x12000...	220802/AB..	CB6473	0,170	0,240	1,000	0,017	0,015	.....	.....	.....	0,039	.....	.....	.....	.....	.....	...469	...325	..31,5	...	...	...	...
S275JR...	9G.1284.03/B...	12x2500x12000...	220802/AB..	.....	0,170	0,240	1,000	0,017	0,015	.....	.....	.....	0,039	.....	.....	.....	.....	.....	...469	...325	..31,5	...	...	...	...

CERTIFICHIAMO CHE IL PRODOTTO SOPRA ELENCATO E' CONFORME ALLA PRESCRIZIONE DELL'ORDINE E CHE I CONTROLLI DELL'ASPETTO SUPERFICIALE E DIMENSIONALE HANNO DATO ESITO POSITIVO.
WE PALINI & BERTOLI HEREBY CERTIFY THAT THE ABOVE MENTIONED PRODUCTS ARE IN COMPLIANCE WITH ORDER PRESCRIPTIONS AND THAT TESTS OF SURFACE AND DIMENSIONAL ASPECTS WERE SUCCESFUL.

QUALITY CONTROL

Cert.Nm. : 50.767
Pag. Nm. : 1
Rapp.268

p.c. POBOLLE

QUA_891

Ansaldo Superconduttori	**RAPPORTO DI CONTROLLO** *inspection report*	n° MA 021647

☐ IN APPROVVIGIONAMENTO *on purchasing* ☒ IN FABBRICAZIONE *on manufacturing* — Pag. : 1 di : 1

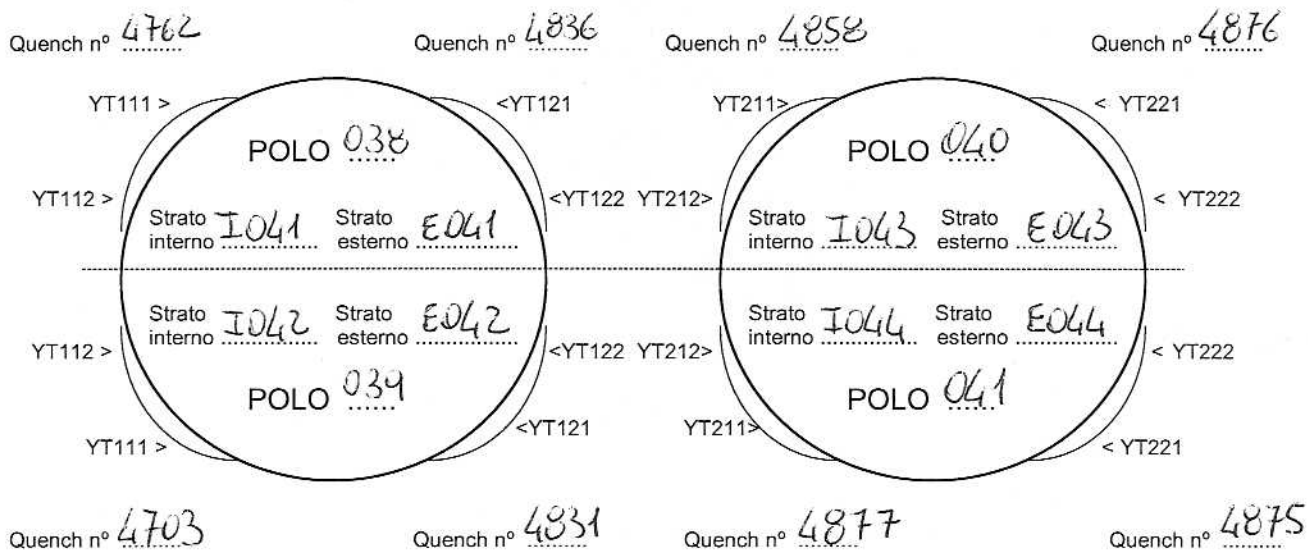
COMMESSA/*Job*	LOTTO/*Lot*	COMPONENTE/*Item code*	DISEGNO/*Drawing*	POS/*Item*	REV./*Rev.*	
F10209EM			620RM08234	/	L	/

IMPIANTO./*Plant*	CLIENTE /*customer*		
LHC 30 COLD MASSES	CERN	/	/

DESCRIZIONE PRODOTTO/*Item Description*	
MAGNETE	M010

SCHEMA DELLE PARTI PRINCIPALI DEL MAGNETE

DIPOLO 1 — DIPOLO 2



Vista dal lato connessioni

COGNOME *Name*	SAPOLLI					
FIRMA *Signature*	Sapolli					
DATA *Date*	18-04-02					
ENTE *Department*	PRC					

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXXXX-QA-123456

EDMS Document No.
666666

Certificate of Conformity

for CERN supplied components

1. ***Part description***	2. ***CERN Part ID*** *(19 chars)*			5. ***Other identification***
	3. ***Part No.*** *(10 chars)*	-	4. ***Serial No.*** *(8 chars)*	
Quench Heaters	HCMB__A025	-	10004723	10004723
Quench Heaters	HCMB__A025	-	10004703	10004703 M010
Quench Heaters	HCMB__A025	-	10004768	10004768 M008
Quench Heaters	HCMB__A025	-	10004767	10004767
Quench Heaters	HCMB__A025	-	10004704	10004704
Quench Heaters	HCMB__A025	-	10004746	10004746
Quench Heaters	HCMB__A025	-	10004771	10004771 M012
Quench Heaters	HCMB__A025	-	10004751	10004751
	-			
	-			

6. ***Recipient contractor:***	ANSALDO ENERGIA Spa		
7. ***Contract / Order No :***	F-302/LHC/LHC for magnet 21		
8. ***Responsible person at CERN:***	F.R. Mateos	***Tel.***	00 41 22 767 53 28
		E-mail.	Felix.Rodriguezmateos@cern.ch
9. ***Reference specification:***	LHC-DQH-CI-001 Rev.1		
10. ***Reference drawings:***	LHCMB_A0125 Rev. A ; LHCMB_A0124 Rev. B		
11. ***Part manufactured by:***	AXON		
12. ***Acceptance test refs:***	See attachment paper		
13. ***Acceptance test results:***	Conform to Technical Specification		
14. ***Comments:***			

CERN certifies that the supplied material is conform to the reference specification.

Date :	***Name :***	***Signature:***
04 – 10 – 2001	F.R. Mateos	

R : 12/10/01

axon' CABLE & INTERCONNECTIQUE

CERN

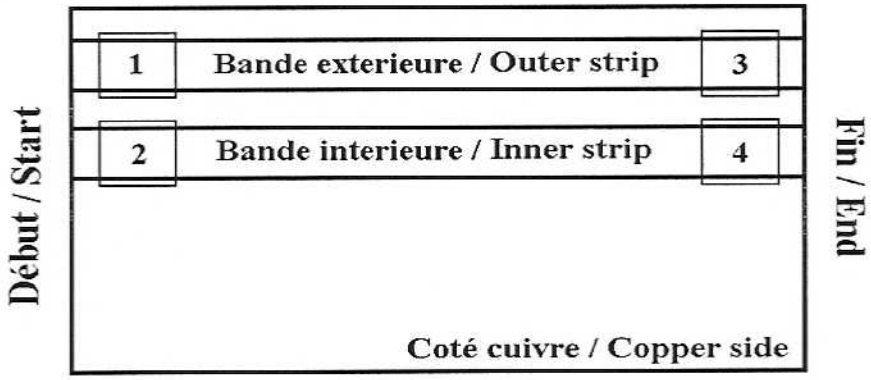
TRAVELLER

VERSION 2 (August 2000)

HCMB-A025-10004703

Dipole Magnet Identification				
Customer	CERN			
CERN order number				
AXON' order number	11013611			
CERN Specification number	LHC-DQH-CI-0001 Rev. 1			
AXON' part-number	P517776B			
Production batch number	D30347			
Spool conductor number	011919 01/014 I/S			
Spool polymide number	010975 I/P 1021-32 B 1 et 2			
Date of control	05/07/01			
Conformity	**YES**	X	**NO**	

CHECKS		Measured values (from/to)		Date	Initials
Temperature	° C	27		03/08/01	TM
Hygrometry	%	40		03/08/01	TM
Length	14557+-2mm	14 557		03/08/01	TM
Width at start	102.45+-0.15mm	102.43		03/08/01	TM
Width at end	102.45+-0.15mm	102.44		03/08/01	TM
Thickness on insulation start / end	0.20+-0.01mm	0.200	0.200	03/08/01	TM
Thickness on outer strip start / end	0.22+-0.02mm	0.232	0.229	03/08/01	TM
Thickness on inner strip start / end	0.22+-0.02mm	0.233	0.234	03/08/01	TM
Resistance of outer strip	Ohm	9.92		28/08/01	FD
Resistance of inner strip	Ohm	9.72		28/08/01	FD
Outer strip margin at start	5.7+-0.5mm	6.07		03/08/01	TM
Outer strip margin at end	5.7+-0.5mm	6.23		03/08/01	TM
Inner strip margin at start	29.95+-1mm	30.09		03/08/01	TM
Inner strip margin at end	29.95+-1mm	30.39		03/08/01	TM
Dielectric test at 3kV		OK		28/08/01	FD
Positions and dimensions of the four windows **		OK		21/08/01	LG
Perpendicularities start and end		0.04	0.227	03/08/01	TM
Visual inspection		OK		03/08/01	TM



** conform to tolerances (1.0 mm +/- 0,5 mm) approved by Mr F.Bourgeois the 24/07/01

Quality contacts :Pierre Castets phone N° 00-33-3-26-81-70-81 or Francois Lebourcq phone N° 00-33-3-26-81-70-82

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXXXX-QA-123456

EDMS Document No.
666666

Certificate of Conformity

for CERN supplied components

1. ***Part description***	2. ***CERN Part ID*** *(19 chars)*			5. ***Other identification***
	3. ***Part No.*** *(10 chars)*	-	4. ***Serial No.*** *(8 chars)*	
Quench Heaters	HCMB__A025	-	10004694	10004694
Quench Heaters	HCMB__A025	-	10004692	10004692
Quench Heaters	HCMB__A025	-	10004762	10004762 M010
Quench Heaters	HCMB__A025	-	10004728	10004728 M008
Quench Heaters	HCMB__A025	-	10004685	10004685
Quench Heaters	HCMB__A025	-	10004684	10004684
Quench Heaters	HCMB__A025	-	10004761	10004761
Quench Heaters	HCMB__A025	-	10004759	10004759 M011
		-		
		-		

6. ***Recipient contractor:***	ANSALDO ENERGIA Spa		
7. ***Contract / Order No :***	F-302/LHC/LHC for magnet 19		
8. ***Responsible person at CERN:***	F.R. Mateos	***Tel.***	00 41 22 767 53 28
		E-mail.	Felix.Rodriguezmateos@cern.ch
9. ***Reference specification:***	LHC-DQH-CI-001 Rev.1		
10. ***Reference drawings:***	LHCMB_A0125 Rev. A ; LHCMB_A0124 Rev. B		
11. ***Part manufactured by:***	AXON		
12. ***Acceptance test refs:***	See attachment paper		
13. ***Acceptance test results:***	Conform to Technical Specification		
14. ***Comments:***			

CERN certifies that the supplied material is conform to the reference specification.

Date :	***Name :***	***Signature:***
04 – 10 – 2001	F.R. Mateos	

12/10/01

axon' CABLE & INTERCONNECTIQUE

CERN

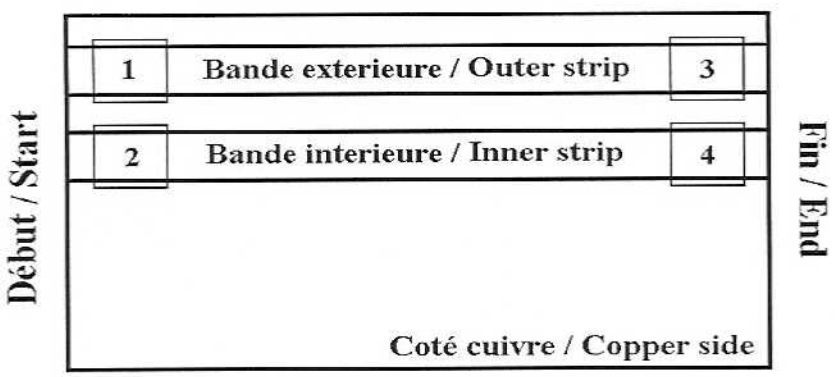
TRAVELLER

VERSION 2 (August 2000)

HCMB-A025-10004762

Dipole Magnet Identification				
Customer	CERN			
CERN order number				
AXON' order number	11013611			
CERN Specification number	LHC-DQH-CI-0001 Rev. 1			
AXON' part-number	P517776B			
Production batch number	D30347			
Spool conductor number	011919 01/015 I/S			
Spool polymide number	010975 I/P 1021 32 B 3 et 4			
Date of control	7/9/2001			
Conformity	**YES**	X	**NO**	

CHECKS		Measured values (from/to)		Date	Initials
Temperature	° C	24		8/8/2001	TM
Hygrometry	%	30		8/8/2001	TM
Length	14557+-2mm	14,557		8/8/2001	TM
Width at start	102.45+-0.15mm	102.389		8/8/2001	TM
Width at end	102.45+-0.15mm	102.374		8/8/2001	TM
Thickness on insulation start / end	0.20+-0.01mm	0.199	0.201	8/8/2001	TM
Thickness on outer strip start / end	0.22+-0.02mm	0.228	0.229	8/8/2001	TM
Thickness on inner strip start / end	0.22+-0.02mm	0.232	0.230	8/8/2001	TM
Resistance of outer strip	Ohm	10.01		8/24/2001	FD
Resistance of inner strip	Ohm	9.82		8/24/2001	FD
Outer strip margin at start	5.7+-0.5mm	5.35		8/8/2001	TM
Outer strip margin at end	5.7+-0.5mm	5.39		8/8/2001	TM
Inner strip margin at start	29.95+-1mm	29.43		8/8/2001	TM
Inner strip margin at end	29.95+-1mm	29.58		8/8/2001	TM
Dielectric test at 3kV		OK		8/24/2001	FD
Positions and dimensions of the four windows **		OK		8/21/2001	LG
Perpendicularities start and end		0.05	0.241	8/8/2001	TM
Visual inspection		OK		8/8/2001	TM



** conform to tolerances (1.0 mm +/- 0,5 mm) approved by Mr F.Bourgeois the 24/07/0

Quality contacts :Pierre Castets phone N° 00-33-3-26-81-70-81 or Francois Lebourcq phone N° 00-33-3-26-81-70-82

CERN
CH-1211 Geneva 23
Switzerland

LHC Project Document No.
LHC-XXXXX-QA-123456

EDMS Document No.
666666

the **Large Hadron Collider** project

Certificate of Conformity

for CERN supplied components

1. ***Part description***	2. ***CERN Part ID*** *(19 chars)*			5. ***Other identification***
	3. ***Part No.*** *(10 chars)*	-	4. ***Serial No.*** *(8 chars)*	
Quench Heaters	HCMB__A025	-	10004836	10004836 M010
Quench Heaters	HCMB__A025	-	10004831	10004831 M010
Quench Heaters	HCMB__A025	-	10004830	10004830 M008
Quench Heaters	HCMB__A025	-	10004808	10004808
Quench Heaters	HCMB__A025	-	10004872	10004872 M012
Quench Heaters	HCMB__A025	-	10004864	10004864
Quench Heaters	HCMB__A025	-	10004833	10004833
Quench Heaters	HCMB__A025	-	10004813	10004813 M008
	-			
	-			

6. ***Recipient contractor:***	ANSALDO ENERGIA Spa		
7. ***Contract / Order No :***	F-302/LHC/LHC for magnet 18		
8. ***Responsible person at CERN:***	F.R. Mateos	***Tel.***	00 41 22 767 53 28
		E-mail.	Felix.Rodriguezmateos@cern.ch
9. ***Reference specification:***	LHC-DQH-CI-001 Rev.1		
10. ***Reference drawings:***	LHCMB_A0125 Rev. A ; LHCMB_A0124 Rev. B		
11. ***Part manufactured by:***	AXON		
12. ***Acceptance test refs:***	See attachment paper		
13. ***Acceptance test results:***	Conform to Technical Specification		
14. ***Comments:***			

CERN certifies that the supplied material is conform to the reference specification.

Date :	***Name :***	***Signature:***
04 – 10 – 2001	F.R. Mateos	

RS 12/10/01

axon' CABLE & INTERCONNECTIQUE

CERN

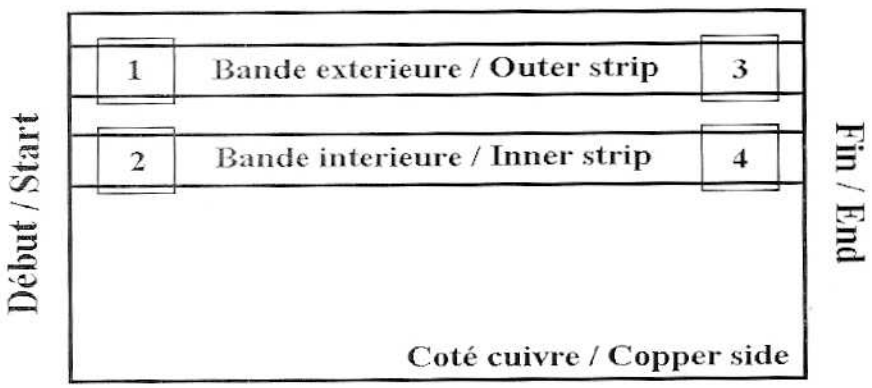
TRAVELLER

VERSION 2 (August 2000)

HCMB-A025-10004836

Dipole Magnet Identification				
Customer	CERN			
CERN order number				
AXON' order number	11013611			
CERN Specification number	LHC-DQH-CI-0001 Rev. 1			
AXON' part-number	P517776B			
Production batch number	D30347			
Spool conductor number	011919 01/018 I/S			
Spool polymide number	014761 I/P10416 B 7 et 8			
Date of control	12/07/01			
Conformity	**YES**	X	**NO**	

CHECKS		Measured values (from/to)		Date	Initials
Temperature	° C	23		04/09/01	VP
Hygrometry	%	38		04/09/01	VP
Length	14557+-2mm	14,557		04/09/01	VP
Width at start	102.45+-0.15mm		102.49	04/09/01	VP
Width at end	102.45+-0.15mm		102.51	04/09/01	VP
Thickness on insulation start / end	0.20+-0.01mm	0.197	0.200	04/09/01	VP
Thickness on outer strip start / end	0.22+-0.02mm	0.226	0.229	04/09/01	VP
Thickness on inner strip start / end	0.22+-0.02mm	0.230	0.229	04/09/01	VP
Resistance of outer strip	Ohm	10.00		13/09/01	VP
Resistance of inner strip	Ohm	9.60		13/09/01	VP
Outer strip margin at start	5.7+-0.5mm	6.07		04/09/01	VP
Outer strip margin at end	5.7+-0.5mm	6.07		04/09/01	VP
Inner strip margin at start	29.95+-1mm	30.10		04/09/01	VP
Inner strip margin at end	29.95+-1mm	30.04		04/09/01	VP
Dielectric test at 3kV		OK		14/09/01	VP
Positions and dimensions of the four windows **		OK		11/09/01	LG
Perpendicularities start and end		0.17	0.24	04/09/01	VP
Visual inspection		OK		04/09/01	VP



** conform to tolerances (1.0 mm +/- 0,5 mm) approved by Mr F.Bourgeois the 24/07/01

Quality contacts :Pierre Castets phone N° 00-33-3-26-81-70-81 or Francois Lebourcq phone N° 00-33-3-26-81-70-82

axon' CABLE & INTERCONNECTIQUE

CERN

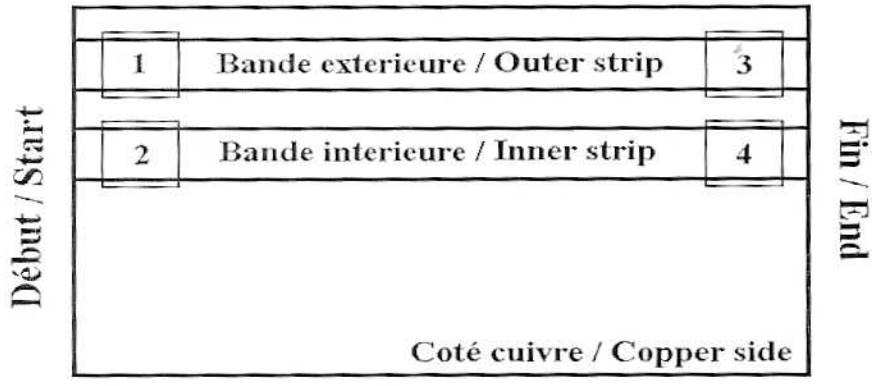
TRAVELLER

VERSION 2 (August 2000)

HCMB-A025-10004831

Dipole Magnet Identification				
Customer	CERN			
CERN order number				
AXON' order number	11013611			
CERN Specification number	LHC-DQH-CI-0001 Rev. 1			
AXON' part-number	P517776B			
Production batch number	D30347			
Spool conductor number	011919 01/018 I/S			
Spool polymide number	014761 I/P10416 B 7 et 8			
Date of control	12/07/01			
Conformity	**YES**	X	**NO**	

CHECKS		Measured values (from/to)		Date	Initials
Temperature	° C	25		04/09/01	VP
Hygrometry	%	40		04/09/01	VP
Length	14557+-2mm	14,557		04/09/01	VP
Width at start	102.45+-0.15mm	102.53		04/09/01	VP
Width at end	102.45+-0.15mm	102.49		04/09/01	VP
Thickness on insulation start / end	0.20+-0.01mm	0.199	0.198	04/09/01	VP
Thickness on outer strip start / end	0.22+-0.02mm	0.223	0.227	04/09/01	VP
Thickness on inner strip start / end	0.22+-0.02mm	0.221	0.226	04/09/01	VP
Resistance of outer strip	Ohm	10.00		13/09/01	VP
Resistance of inner strip	Ohm	9.50		13/09/01	VP
Outer strip margin at start	5.7+-0.5mm	6.05		04/09/01	VP
Outer strip margin at end	5.7+-0.5mm	6.05		04/09/01	VP
Inner strip margin at start	29.95+-1mm	30.08		04/09/01	VP
Inner strip margin at end	29.95+-1mm	30.09		04/09/01	VP
Dielectric test at 3kV		OK		14/09/01	VP
Positions and dimensions of the four windows **		OK		11/09/01	LG
Perpendicularities start and end		0.07	0.01	04/09/01	VP
Visual inspection		OK		04/09/01	VP



** conform to tolerances (1.0 mm +/- 0,5 mm) approved by Mr F.Bourgeois the 24/07/01

Quality contacts :Pierre Castets phone N° 00-33-3-26-81-70-81 or Francois Lebourcq phone N° 00-33-3-26-81-70-82

CERN
CH-1211 Geneva 23
Switzerland

LHC Project Document No.
LHC-XXXXX-QA-123456

EDMS Document No.
666666

the **Large Hadron Collider** project

Certificate of Conformity

for CERN supplied components

1. ***Part description***	2. ***CERN Part ID*** *(19 chars)*			5. ***Other identification***
	3. ***Part No.*** *(10 chars)*	-	4. ***Serial No.*** *(8 chars)*	
Quench Heaters	HCMB__A025	-	10004823	10004823 M008
Quench Heaters	HCMB__A025	-	10004858	10004858 M010
Quench Heaters	HCMB__A025	-	10004866	10004866
Quench Heaters	HCMB__A025	-	10004852	10004852 M012
Quench Heaters	HCMB__A025	-	10004877	10004877 M010
Quench Heaters	HCMB__A025	-	10004876	10004876 M010
Quench Heaters	HCMB__A025	-	10004875	10004875 M010
Quench Heaters	HCMB__A025	-	10004835	10004835
	-			
	-			

6. ***Recipient contractor:***	ANSALDO ENERGIA Spa		
7. ***Contract / Order No :***	F-302/LHC/LHC for magnet 16		
8. ***Responsible person at CERN:***	F.R. Mateos	***Tel.***	00 41 22 767 53 28
		E-mail.	Felix.Rodriguezmateos@cern.ch
9. ***Reference specification:***	LHC-DQH-CI-001 Rev.1		
10. ***Reference drawings:***	LHCMB_A0125 Rev. A ; LHCMB_A0124 Rev. B		
11. ***Part manufactured by:***	AXON		
12. ***Acceptance test refs:***	See attachment paper		
13. ***Acceptance test results:***	Conform to Technical Specification		
14. ***Comments:***			

CERN certifies that the supplied material is conform to the reference specification.

Date :	***Name :***	***Signature:***
04 – 10 – 2001	F.R. Mateos	

R1. 12/10/01 JR

axon' CABLE & INTERCONNECTIQUE

CERN

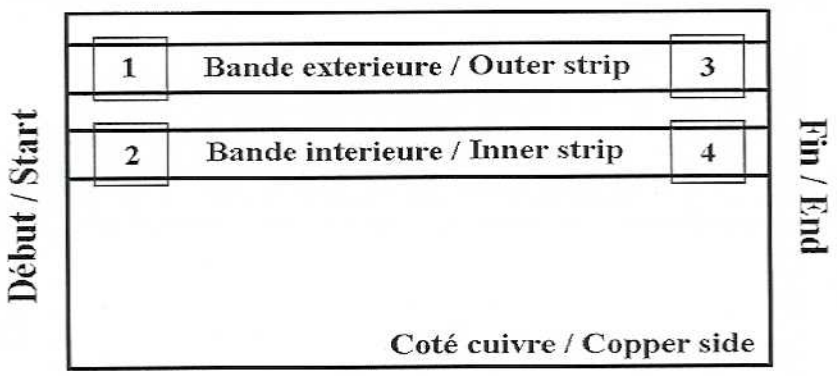
TRAVELLER

VERSION 2 (August 2000)

HCMB-A025-10004858

Dipole Magnet Identification				
Customer	CERN			
CERN order number				
AXON' order number	11013611			
CERN Specification number	LHC-DQH-CI-0001 Rev. 1			
AXON' part-number	P517776B			
Production batch number	D30347			
Spool conductor number	011919 01/024A I et S			
Spool polymide number	014761 I/P10416 B 23 et 24			
Date of control	7/24/2001			
Conformity	**YES**	X	**NO**	

CHECKS		Measured values (from/to)		Date	Initials
Temperature	° C	23		9/6/2001	JN
Hygrometry	%	39		9/6/2001	JN
Length	14557+-2mm	14,557		9/6/2001	JN
Width at start	102.45+-0.15mm	102.35		9/6/2001	JN
Width at end	102.45+-0.15mm	102.37		9/6/2001	JN
Thickness on insulation start / end	0.20+-0.01mm	0.206	0.204	9/9/2001	JN
Thickness on outer strip start / end	0.22+-0.02mm	0.234	0.236	9/6/2001	JN
Thickness on inner strip start / end	0.22+-0.02mm	0.236	0.234	9/6/2001	JN
Resistance of outer strip	Ohm	10.00		9/13/2001	SR
Resistance of inner strip	Ohm	9.80		9/13/2001	SR
Outer strip margin at start	5.7+-0.5mm	5.71		9/6/2001	JN
Outer strip margin at end	5.7+-0.5mm	5.74		9/6/2001	JN
Inner strip margin at start	29.95+-1mm	29.82		9/6/2001	JN
Inner strip margin at end	29.95+-1mm	29.72		9/6/2001	JN
Dielectric test at 3kV		OK		9/13/2001	SR
Positions and dimensions of the four windows **		OK		9/11/2001	LG
Perpendicularities start and end		0.08	0.14	9/6/2001	JN
Visual inspection		OK		9/6/2001	JN



** conform to tolerances (1.0 mm +/- 0,5 mm) approved by Mr F.Bourgeois the 24/07/0

Quality contacts :Pierre Castets phone N° 00-33-3-26-81-70-81 or Francois Lebourcq phone N° 00-33-3-26-81-70-82

axon' CABLE & INTERCONNECTIQUE

CERN

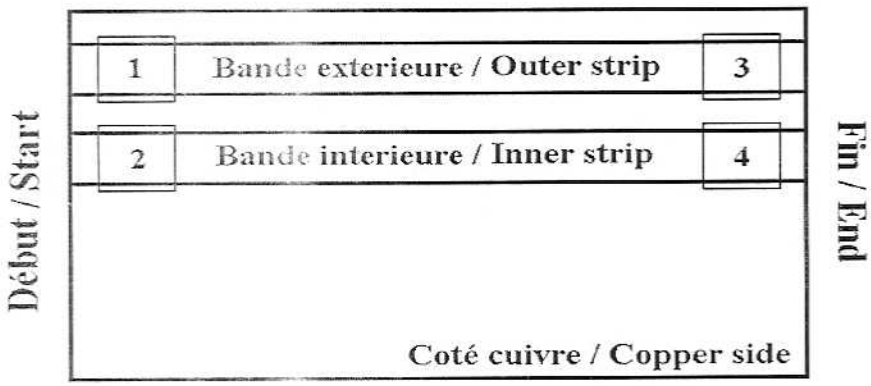
TRAVELLER

VERSION 2 (August 2000)

HCMB-A025-10004877

Dipole Magnet Identification				
Customer	CERN			
CERN order number				
AXON' order number	11013611			
CERN Specification number	LHC-DQH-CI-0001 Rev. 1			
AXON' part-number	P517776B			
Production batch number	D30347			
Spool conductor number	011919 01/024A I et S			
Spool polymide number	14761 I/P1041-6 B 25 et 26			
Date of control	25/07/01			
Conformity	**YES**	X	**NO**	

CHECKS		Measured values (from/to)		Date	Initials
Temperature	° C	23		11/09/01	VP
Hygrometry	%	33		11/09/01	VP
Length	14557+-2mm	14,557		11/09/01	VP
Width at start	102.45+-0.15mm	102.52		11/09/01	VP
Width at end	102.45+-0.15mm	102.51		11/09/01	VP
Thickness on insulation start / end	0.20+-0.01mm	0.203	0.202	11/09/01	VP
Thickness on outer strip start / end	0.22+-0.02mm	0.232	0.231	11/09/01	VP
Thickness on inner strip start / end	0.22+-0.02mm	0.228	0.226	11/09/01	VP
Resistance of outer strip	Ohm	9.95		20/09/01	SR
Resistance of inner strip	Ohm	9.72		20/09/01	SR
Outer strip margin at start	5.7+-0.5mm	5.79		11/09/01	VP
Outer strip margin at end	5.7+-0.5mm	5.70		11/09/01	VP
Inner strip margin at start	29.95+-1mm	29.84		11/09/01	VP
Inner strip margin at end	29.95+-1mm	29.72		11/09/01	VP
Dielectric test at 3kV		OK		20/09/01	SR
Positions and dimensions of the four windows **		OK		19/09/01	LG
Perpendicularities start and end		0.09	0.2	11/09/01	VP
Visual inspection		OK		11/09/01	VP



** conform to tolerances (1.0 mm +/- 0,5 mm) approved by Mr F.Bourgeois the 24/07/01

Quality contacts :Pierre Castets phone N° 00-33-3-26-81-70-81 or Francois Lebourcq phone N° 00-33-3-26-81-70-82

axon' CABLE & INTERCONNECTIQUE

CERN

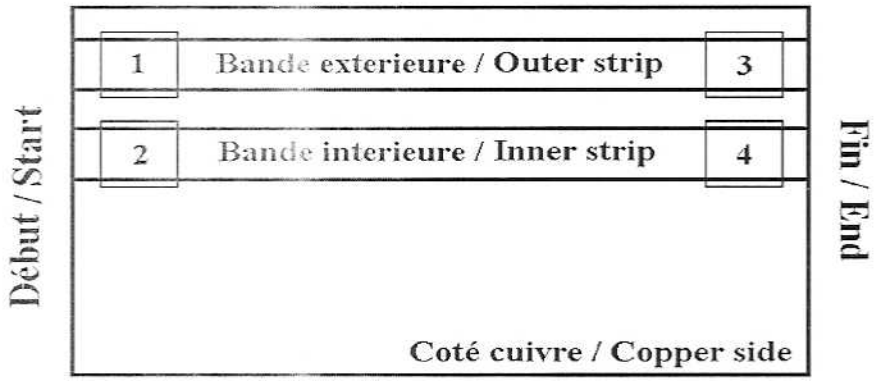
TRAVELLER

VERSION 2 (August 2000)

HCMB-A025-10004876

Dipole Magnet Identification				
Customer	CERN			
CERN order number				
AXON' order number	11013611			
CERN Specification number	LHC-DQH-CI-0001 Rev. 1			
AXON' part-number	P517776B			
Production batch number	D30347			
Spool conductor number	011919 01/023A I et S			
Spool polymide number	14761 I/P1041-6 B 16 et 17			
Date of control	23/07/01			
Conformity	**YES**	X	**NO**	

CHECKS		Measured values (from/to)		Date	Initials
Temperature	° C	23		11/09/01	SR
Hygrometry	%	33		11/09/01	SR
Length	14557+-2mm	14,557		11/09/01	SR
Width at start	102.45+-0.15mm		102.38	11/09/01	SR
Width at end	102.45+-0.15mm		102.41	11/09/01	SR
Thickness on insulation start / end	0.20+-0.01mm	0.191	0.191	11/09/01	SR
Thickness on outer strip start / end	0.22+-0.02mm	0.222	0.224	11/09/01	SR
Thickness on inner strip start / end	0.22+-0.02mm	0.222	0.220	11/09/01	SR
Resistance of outer strip	Ohm	10.10		20/09/01	SR
Resistance of inner strip	Ohm	9.91		20/09/01	SR
Outer strip margin at start	5.7+-0.5mm	5.48		11/09/01	SR
Outer strip margin at end	5.7+-0.5mm	5.48		11/09/01	SR
Inner strip margin at start	29.95+-1mm	29.52		11/09/01	SR
Inner strip margin at end	29.95+-1mm	29.53		11/09/01	SR
Dielectric test at 3kV		OK		20/09/01	SR
Positions and dimensions of the four windows **		OK		20/09/01	LG
Perpendicularities start and end		0.06	0.3	11/09/01	SR
Visual inspection		OK		11/09/01	SR



** conform to tolerances (1.0 mm +/- 0,5 mm) approved by Mr F.Bourgeois the 24/07/01

Quality contacts :Pierre Castets phone N° 00-33-3-26-81-70-81 or Francois Lebourcq phone N° 00-33-3-26-81-70-82

axon' CABLE & INTERCONNECTIQUE

CERN

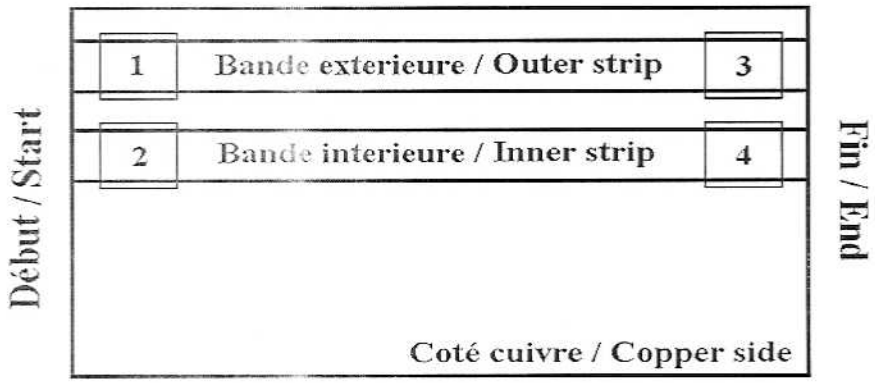
TRAVELLER

VERSION 2 (August 2000)

HCMB-A025-10004875

Dipole Magnet Identification				
Customer	CERN			
CERN order number				
AXON' order number	11013611			
CERN Specification number	LHC-DQH-CI-0001 Rev. 1			
AXON' part-number	P517776B			
Production batch number	D30347			
Spool conductor number	011919 01/023C I et S			
Spool polymide number	14761 I/P1041-6 B 21 et 22			
Date of control	24/07/01			
Conformity	**YES**	X	**NO**	

CHECKS		Measured values (from/to)		Date	Initials
Temperature	° C	23		11/09/01	SR
Hygrometry	%	33		11/09/01	SR
Length	14557+-2mm	14,557		11/09/01	SR
Width at start	102.45+-0.15mm		102.41	11/09/01	SR
Width at end	102.45+-0.15mm		102.41	11/09/01	SR
Thickness on insulation start / end	0.20+-0.01mm	0.203	0.201	11/09/01	SR
Thickness on outer strip start / end	0.22+-0.02mm	0.233	0.230	11/09/01	SR
Thickness on inner strip start / end	0.22+-0.02mm	0.234	0.232	11/09/01	SR
Resistance of outer strip	Ohm	9.94		20/09/01	SR
Resistance of inner strip	Ohm	9.84		20/09/01	SR
Outer strip margin at start	5.7+-0.5mm	5.77		11/09/01	SR
Outer strip margin at end	5.7+-0.5mm	5.77		11/09/01	SR
Inner strip margin at start	29.95+-1mm	29.79		11/09/01	SR
Inner strip margin at end	29.95+-1mm	29.78		11/09/01	SR
Dielectric test at 3kV		OK		20/09/01	SR
Positions and dimensions of the four windows **		OK		20/09/01	LG
Perpendicularities start and end		0.12	0.02	11/09/01	SR
Visual inspection		OK		11/09/01	SR



** conform to tolerances (1.0 mm +/- 0,5 mm) approved by Mr F.Bourgeois the 24/07/01

Quality contacts :Pierre Castets phone N° 00-33-3-26-81-70-81 or Francois Lebourcq phone N° 00-33-3-26-81-70-82

CERN
CH-1211 Geneva 23
Switzerland

LHC Project Document No.
LHC-XXXXX-QA-123456

EDMS Document No.
666666

the
Large Hadron Collider
project

Certificate of Conformity

for CERN supplied components

1. ***Part description***	2. ***CERN Part ID*** *(19 chars)*			5. ***Other identification***
	3. ***Part No.*** *(10 chars)*	-	4. ***Serial No.*** *(8 chars)*	
Cable Supra inner layer	HCMB__A046	-	1B10037B	01B10037B
Cable Supra inner layer	HCMB__A046	-	1B10037A	01B10037A
Cable Supra inner layer	HCMB__A046	-	1B10036B	01B10036B
Cable Supra inner layer	HCMB__A046	-	1B10036A	01B10036A
		-		
		-		
		-		
		-		
		-		
		-		

6. ***Recipient contractor:*** ANSALDO ENERGIA Spa

7. ***Contract / Order No :*** F-302/LHC/LHC for magnet 10

8. ***Responsible person at CERN:*** Luc Oberli
Tel. 00 41 22 767 53 92
E-mail. Luc.Oberli@cern.ch

9. ***Reference specification:*** LHC-MMS/97-152

10. ***Reference drawings:***

11. ***Part manufactured by:*** ALSTOM Magnets and Superconductors

12. ***Acceptance test refs:*** See Attachment paper

13. ***Acceptance test results:*** Conform to Technical Specification

14. ***Comments:***

CERN certifies that the supplied material is conform to the reference specification.

Date :	***Name :***	***Signature :***
02 – 10 – 2001	Luc Oberli	

R. 12/10/01

Report n° 01B10037B

CERTIFICATE OF CONFORMITY

Customer : **CERN**		Contrat N° :	**F264**
Name of the product	**Cable 01**		
Cable Identification Code:	**01B10037B**	Cable Length :	**462**

Measured data

Average width (mm)	15,0912
Average mid-thickness corrected (mm)	1,9004
Average Keystone (°)	1,278
Mid-thickness at 50 MPa (mm)	1,8983
Transposition direction	Left
Transposition pitch (mm)	114
Cable bend test	Passed
Sharp edge test	Passed
Minimum Ic among the extracted strand at 4,222K and 7T (A)	514,0
Heat treatment duration and temperature	3h at 200°C
Remarks	

We certify that, apart from exception having obtained the written approval from CERN, the cable n° 01B10037B has been manufactured and qualified according to the requirements of the contract n° F264 and that all the test and measurements results reported into the data base are correct and complete.

Date : 23/04/2001 Quality Manager

MATERIAL APPROVED
AND ACCEPTED BY
CERN
NAME OBERLI
DATE 31/8/2001

Report n° 01B10037A

CERTIFICATE OF CONFORMITY

Customer : CERN		Contrat N° :	F264
Name of the product	Cable 01		
Cable Identification Code:	01B10037A	Cable Length :	463

Measured data

Average width (mm)	15,0899
Average mid-thickness corrected (mm)	1,8998
Average Keystone (°)	1,276
Mid-thickness at 50 MPa (mm)	1,8983
Transposition direction	Left
Transposition pitch (mm)	114
Cable bend test	Passed
Sharp edge test	Passed
Minimum Ic among the extracted strand at 4,222K and 7T (A)	514,0
Heat treatment duration and temperature	3h at 200°C
Remarks	

We certify that, apart from exception having obtained the written approval from CERN, the cable n° 01B10037A has been manufactured and qualified according to the requirements of the contract n° F264 and that all the test and measurements results reported into the data base are correct and complete.

Date : 23/04/2001

Quality Manager

MATERIAL APPROVED
AND ACCEPTED BY
CERN
NAME OBERLI
DATE 31/8/2001

Report n° 01B10036B

CERTIFICATE OF CONFORMITY

Customer : CERN		Contrat N° :	F264
Name of the product	Cable 01		
Cable Identification Code:	01B10036B	Cable Length :	463

Measured data

Average width (mm)	15,0898
Average mid-thickness corrected (mm)	1,8998
Average Keystone (°)	1,273
Mid-thickness at 50 MPa (mm)	1,8998
Transposition direction	Left
Transposition pitch (mm)	115
Cable bend test	Passed
Sharp edge test	Passed
Minimum Ic among the extracted strand at 4,222K and 7T (A)	506,0
Heat treatment duration and temperature	3h at 200°C
Remarks	

We certify that, apart from exception having obtained the written approval from CERN, the cable n° 01B10036B has been manufactured and qualified according to the requirements of the contract n° F264 and that all the test and measurements results reported into the data base are correct and complete.

Date : 23/04/2001

Quality Manager

MATERIAL APPROVED
AND ACCEPTED BY
CERN
NAME OBERLI
DATE 31/8/2001

Report n° 01B10036A

CERTIFICATE OF CONFORMITY

Customer : CERN		Contrat N° :	F264
Name of the product	Cable 01		
Cable Identification Code:	01B10036A	Cable Length :	463

Measured data

Average width (mm)	15,0904
Average mid-thickness corrected (mm)	1,8997
Average Keystone (°)	1,269
Mid-thickness at 50 MPa (mm)	1,8998
Transposition direction	Left
Transposition pitch (mm)	115
Cable bend test	Passed
Sharp edge test	Passed
Minimum Ic among the extracted strand at 4,222K and 7T (A)	506,0
Heat treatment duration and temperature	3h at 200°C
Remarks	

We certify that, apart from exception having obtained the written approval from CERN, the cable n° 01B10036A has been manufactured and qualified according to the requirements of the contract n° F264 and that all the test and measurements results reported into the data base are correct and complete.

Date : 23/04/2001

Quality Manager

MATERIAL APPROVED
AND ACCEPTED BY
CERN
NAME OBERLI
DATE 31/8/2001

CERN
CH-1211 Geneva 23
Switzerland

LHC Project Document No.
LHC-XXXXX-QA-123456

EDMS Document No.
666666

the **Large Hadron Collider** project

Certificate of Conformity

for CERN supplied components

1. ***Part description***	2. ***CERN Part ID*** *(19 chars)*			5. ***Other identification***
	3. ***Part No.*** *(10 chars)*	-	4. ***Serial No.*** *(8 chars)*	
Cable Supra outer layer	HCMB__A047	-	2C00031A	02C00031A
Cable Supra outer layer	HCMB__A047	-	2C00032A	02C00032A
Cable Supra outer layer	HCMB__A047	-	2C00034A	02C00034A
Cable Supra outer layer	HCMB__A047	-	2C00040A	02C00040A
		-		
		-		
		-		
		-		
		-		
		-		

6. ***Recipient contractor:*** Ansaldo Energia SPA

7. ***Contract / Order No :*** F-302/LHC/LHC

8. ***Responsible person at CERN:*** Luc Oberli
Tel. 00 41 22 767 53 92
E-mail. Luc.Oberli@cern.ch

9. ***Reference specification:*** LHC-MMS/97-153

10. ***Reference drawings:***

11. ***Part manufactured by:*** Europa Metalli s.p.a

12. ***Acceptance test refs:*** See attachment paper

13. ***Acceptance test results:*** Conform to Technical Specification

14. ***Comments:*** For magnet 10

CERN certifies that the supplied material is conform to the reference specification.

Date :	***Name :***	***Signature :***
10 - 12 – 2001	Luc Oberli	

EM	Europa Metalli s.p.a. Superconductors Division **CERTIFICATE OF CONFORMITY**	
Customer: **CERN**		Contract no: F267
Name of the Product:	LHC outer cable	
Cable Identification Code:	02C00031A	Cable length (m): 755
Measured data		
Average width (mm)		15.0933
Average mid-thickness corrected for 50 MPa (mm)		1.4812
Average keystone angle (°)		0.902
Mid thickness at 50 MPa		1.4835
Transpositon direction		Left handed screw thread
Transposition pitch (mm)		102.3
Cable bend test		passed
Cable visual examination		passed
Minimum Ic among extracted strand at 4.222K and 6T (A)		386.1
Heat treatment duration and temperature		ramp 160C-180C, 2 h plateau 180C, ramp 180C-200C, 2 h plateau 200C
Remarks		

We certify that, apart from exception having the written approval from CERN, the cable has been manufactured and qualified according to the requirements of the Contract mentioned above and that all test and measurement results reported into the database are correct and complete

Date

02/10/2001

Approved by

Fausto Pasotti

MATERIAL APPROVED AND ACCEPTED BY CERN
NAME Verweij
DATE 3/10/2001

EM	Europa Metalli s.p.a. Superconductors Division **CERTIFICATE OF CONFORMITY**	
Customer: **CERN**		Contract no: F267
Name of the Product:	LHC outer cable	
Cable Identification Code:	02C00032A	Cable length (m): 755
Measured data		
Average width (mm)		15.0917
Average mid-thickness corrected for 50 MPa (mm)		1.482
Average keystone angle (°)		0.902
Mid thickness at 50 MPa		1.4852
Transpositon direction		Left handed screw thread
Transposition pitch (mm)		102.3
Cable bend test		passed
Cable visual examination		passed
Minimum Ic among extracted strand at 4.222K and 6T (A)		372.2
Heat treatment duration and temperature		ramp 160C-180C, 2 h plateau 180C, ramp 180C-200C, 2 h plateau 200C
Remarks		

We certify that, apart from exception having the written approval from CERN, the cable has been manufactured and qualified according to the requirements of the Contract mentioned above and that all test and measurement results reported into the database are correct and complete

Date

02/10/2001

Approved by

Fausto Pasotti

MATERIAL APPROVED AND ACCEPTED BY CERN
NAME Verweij
DATE 3/10/2001

EM	Europa Metalli s.p.a. Superconductors Division **CERTIFICATE OF CONFORMITY**	
Customer: **CERN**		Contract no: F267
Name of the Product:	LHC outer cable	
Cable Identification Code:	02C00034A	Cable length (m): 751
Measured data		
Average width (mm)		15.0895
Average mid-thickness corrected for 50 MPa (mm)		1.4814
Average keystone angle (°)		0.902
Mid thickness at 50 MPa		1.4818
Transpositon direction		Left handed screw thread
Transposition pitch (mm)		102.3
Cable bend test		passed
Cable visual examination		passed
Minimum Ic among extracted strand at 4.222K and 6T (A)		374.3
Heat treatment duration and temperature		ramp 160C-180C, 2 h plateau 180C, ramp 180C-200C, 2 h plateau 200C
Remarks		

We certify that, apart from exception having the written approval from CERN, the cable has been manufactured and qualified according to the requirements of the Contract mentioned above and that all test and measurement results reported into the database are correct and complete

Date

02/10/2001

Approved by

Fausto Pasotti

MATERIAL APPROVED AND ACCEPTED BY CERN
NAME Verweij
DATE 3/10/2001

EM

Europa Metalli s.p.a.
Superconductors Division

CERTIFICATE OF CONFORMITY

Customer: CERN		Contract no: F267	
Name of the Product:	LHC outer cable		
Cable Identification Code:	02C00040A	Cable length (m):	760
Measured data			
Average width (mm)		15.0903	
Average mid-thickness corrected for 50 MPa (mm)		1.4797	
Average keystone angle (°)		0.901	
Mid thickness at 50 MPa		1.4807	
Transpositon direction		Left handed screw thread	
Transposition pitch (mm)		102.3	
Cable bend test		passed	
Cable visual examination		passed	
Minimum Ic among extracted strand at 4.222K and 6T (A)			390.0
Heat treatment duration and temperature		ramp 160C-180C, 2 h plateau 180C, ramp 180C-200C, 2 h plateau 200C	
Remarks			

We certify that, apart from exception having the written approval from CERN, the cable has been manufactured and qualified according to the requirements of the Contract mentioned above and that all test and measurement results reported into the database are correct and complete

Date

26/10/2001

Approved by

Fausto Pasotti

MATERIAL APPROVED AND ACCEPTED BY CERN
NAME Verweij
DATE 26/10/2001

Pirelli Cavi e Sistemi S.p.A.
Divisione Italia
Business Unit Fili Isolati Speciali

LHC DIPOLE INSULATION -CONFORMITY CERTIFICATE

Re.: INVEX Material Requirements Card for LHC

CERTIFICATE No 2245 - 7

ANSALDO ORDER: BC228665 rev. 3 commessa F10209EM

PRODUCT

- ☆ LHC CABLE FOR DIPOLE - LHCMBPA 00143 ind. B INTERNAL LAYER
- ☐ LHC CABLE FOR DIPOLE LHCMBPA 00153 ind. B EXTERNAL LAYER
- ☐ ANGULAR WEDGES TYPE 1 - LHCMBPA 00032 ind. 0
- ☐ ANGULAR WEDGES TYPE 2 - - LHCMBPA 00042 ind. 0
- ☐ ANGULAR WEDGES TYPE 3 - - LHCMBPA 00052 ind. 0
- ☐ ANGULAR WEDGES TYPE 4 - - LHCMBPA 00062 ind. 0

IDENTIFICATION

PRODUCT	BARE MATERIAL IDENTIFICATION	INSULATED MATERIAL IDENTIFICATION	No OF SPOOLS/WEDGES
CABLE INTERNAL LAYER	01B10036A	01B10036A	7
CABLE EXTERNAL LAYER			
WEDGES TYPE 1 3 m			
WEDGES TYPE 2 3 m			
WEDGES TYPE 3 3 m			
WEDGES TYPE 4 3 m			

INSULATING MATERIALS CARD No 2245-7

DATE 25-10-2001

TESTS	WINDING FORCE	TOLERANCE	WINDING REGULARITY	TOLERANCE
SPEC.				
KAPTON KAPTON -200HCI 11 mm		1-1.5% MAX	119	± 2 mm
Adhesive KAPTON 270LCI-1 9 mm		1-1.5% MAX	113	± 2 mm

IN LINE ELECTRICAL TEST	No OF REPAIRED FAULTS
1000 V 50 Hz	NO

AFTER FINAL INSPECTION WE CERTIFY THAT THIS MATERIAL HAS BEEN PRODUCED ACCORDING TO PIRELLI OPERATIVE INSTRUCTION IO/DBFIS/SQ2/01 LAST REVISION AND COMPLIES WITH ANSALDO ENERGIA SPECIFICATIONS 700RM08199 (CABLE) AND 700RM08200 (WEDGES).

SLPC2 RESPONSIBLE PISANI ENNIO	DATE 25/10/2001
I Sani Ennio	

PIRELLI

Pirelli Cavi e Sistemi S.p.A.
Divisione Italia
Business Unit Fili Isolati Speciali

INVEX

SCHEDA DI CONTROLLO DI PROCESSO

Re.: INVEX Material Requirements Card for LHC

SPOOL NO Bobina N° 27
DATE-Data
R

MATERIALE: LHC CABLE FOR DIPOLE LHCMBPA 00143 ind. B INTERNAL LAYER-STRATO INTERNO

IDENTIFICAZIONE

MATERIALE	IDENTIFICAZIONE	PRODOTTO	IDENTIFICAZIONE
Adhesive KAPTON 270LCI- 9 mm Kapton autocementante			
Controllo lato adesivo Kapton	Fatto Firma (*) [illegible]		
KAPTON -200HCI 11 mm			
CAVO NUDO STRATO INTERNO	04 B100364	CAVO ISOLATO STRATO INTERNO	

CONTROLLO	Turno 1	Turno 2
Cavo nudo	☒ Regolare ☐ Fili rotti [ ] fili lenti [ ] paglie [ ] altro	☐ Regolare ☐ Fili rotti [ ] fili lenti [ ] paglie [ ] altro
KAPTON 200HCI accostato (-0 + 0.1 mm) e sfalsato 50%	OK ☐ Problemi _____	OK ☐ Problemi _____
Adhesive KAPTON GAP (2±0.2)mm	OK ☐ Problemi _____	OK ☐ Problemi _____
Falle spark tester 1000 V	METRI _____ _____	METRI _____ _____ _____ _____
Cavo collassato e riparato	METRI	METRI
Fili lenti segnalati	METRI	METRI
Difetti di calandratura - segnalati	METRI	METRI

Cambi	Turno 1	FIRMA	Turno 2	FIRMA
	METRI da testa interna		METRI da testa interna	
KAPTON 200HCI 1	235			
KAPTON 200HCI 2				
Adhesive KAPTON 270LCI		(*)		(*)
Ti	340	(*)		(*)
		(*)		(*)
		(*)		(*)
		(*)		(*)

(*) L'operatore deve firmare in corrispondenza ad ogni riquadro per conferma dell'avvenuta operazione di controllo della posizione corretta dell'adesivo.

OPERATORE	TURNO 1	TURNO 2
METRI PER TURNO		
Firma [illegible]	25-10-2001	[illegible] 457

L'Operatore firmando la presente scheda di controllo certifica di conoscere la Scheda Requisiti Prodotto per LHC e di aver seguito le metodologie ivi contenute.

kaneka APICAL®
HIGH-TECH MATERIALS, INC. Polyimide Film

FILM TYPE:	200AV
THICKNESS:	50.8 uM
LOT #:	20041471 -11
WIDTH:	11.0mm
NET WGT.:	1.02 KG
LENGTH:	1123M
PO#:	F-333/LHC/LHC
PART NO.	P1
SPLICES:	0

kaneka APICAL®
HIGH-TECH MATERIALS, INC. Polyimide Film

FILM TYPE:	200AV
THICKNESS:	50.8 uM
LOT #:	20041471 -23
WIDTH:	11.0mm
NET WGT.:	1.02 KG
LENGTH:	1123M
PO#:	F-333/LHC/LHC
PART NO.	P1
SPLICES:	0

PIRELLI
Pirelli Cavi e Sistemi S.p.A.
Divisione Italia
Business Unit Fili Isolati Speciali

INVEX

LHC DIPOLE INSULATION -CONFORMITY CERTIFICATE

Re.: INVEX Material Requirements Card for LHC

CERTIFICATE No 2245 - 6

ANSALDO ORDER: BC228665 rev. 3 commessa F10209EM

PRODUCT
- [x] LHC CABLE FOR DIPOLE - LHCMBPA 00143 ind. B INTERNAL LAYER
- [ ] LHC CABLE FOR DIPOLE LHCMBPA 00153 ind. B EXTERNAL LAYER
- [ ] ANGULAR WEDGES TYPE 1 - LHCMBPA 00032 ind. 0
- [ ] ANGULAR WEDGES TYPE 2 - - LHCMBPA 00042 ind. 0
- [ ] ANGULAR WEDGES TYPE 3 - - LHCMBPA 00052 ind. 0
- [ ] ANGULAR WEDGES TYPE 4 - - LHCMBPA 00062 ind. 0

IDENTIFICATION

PRODUCT	BARE MATERIAL IDENTIFICATION	INSULATED MATERIAL IDENTIFICATION	No OF SPOOLS/WEDGES
CABLE INTERNAL LAYER	01B10036B	01B10036B	6
CABLE EXTERNAL LAYER			
WEDGES TYPE 1 3 m			
WEDGES TYPE 2 3 m			
WEDGES TYPE 3 3 m			
WEDGES TYPE 4 3 m			

INSULATING MATERIALS CARD No 2245 - 6

DATE 24 - 10 - 2001

TESTS	WINDING FORCE	TOLERANCE	WINDING REGULARITY	TOLERANCE
SPEC.				
KAPTON KAPTON -200HCI 11 mm		1-1.5% MAX	119	± 2 mm
Adhesive KAPTON 270LCI-1 9 mm		1-1.5% MAX	113	± 2 mm

IN LINE ELECTRICAL TEST	No OF REPAIRED FAULTS
1000 V 50 Hz	No

AFTER FINAL INSPECTION WE CERTIFY THAT THIS MATERIAL HAS BEEN PRODUCED ACCORDING TO PIRELLI OPERATIVE INSTRUCTION IO/DBFIS/SQ2/01 LAST REVISION AND COMPLIES WITH ANSALDO ENERGIA SPECIFICATIONS 700RM08199 (CABLE) AND 700RM08200 (WEDGES).

SLPC2 RESPONSIBLE	DATE
RISAMI ENNIO Risami Ennio	24/10/2001

PIRELLI

Pirelli Cavi e Sistemi S.p.A.
Divisione Italia
Business Unit Fili Isolati Speciali

INVEX

SCHEDA DI CONTROLLO DI PROCESSO

Rc.: INVEX Material Requirements Card for LHC

SPOOL NO Bobina N° 6
DATE-Data 24/10/2002

MATERIALE: LHC CABLE FOR DIPOLE LHCMBPA 00143 ind. B INTERNAL LAYER-STRATO INTERNO

IDENTIFICAZIONE

MATERIALE	IDENTIFICAZIONE	PRODOTTO	IDENTIFICAZIONE
Adhesive KAPTON 270LCI- 9 mm Kapton autocementante			
Controllo lato adesivo Kapton	Fatto Firma (*)		
KAPTON -200HCI 11 mm			
CAVO NUDO STRATO INTERNO	07 B100368	CAVO ISOLATO STRATO INTERNO	

CONTROLLO	Turno 1	Turno 2
Cavo nudo	☒ Regolare ☐ Fili rotti [ ] fili lenti [ ] paglie [ ] altro	☐ Regolare ☐ Fili rotti [ ] fili lenti [ ] paglie [ ] altro
KAPTON 200HCI accostato (-0 + 0.1 mm) e sfalsato 50%	OK ☐ Problemi _____	OK ☐ Problemi _____
Adhesive KAPTON GAP (2±0.2)mm	OK ☐ Problemi _____	OK ☐ Problemi _____
Falle spark tester 1000 V	METRI _____ _____ _____	METRI _____ _____ _____
Cavo collassato e riparato	METRI	METRI
Fili lenti segnalati	METRI	METRI
Difetti di calandratura - segnalati	METRI	METRI

Cambi	Turno 1	FIRMA	Turno 2	FIRMA
	METRI da testa interna		METRI da testa interna	
KAPTON 200HCI TE	180			
KAPTON 200HCI 2				
Adhesive KAPTON 270LCI Ti		(*)		(*)
	420 / 70	(*)		(*)
		(*)		(*)
		(*)		(*)
		(*)		(*)

(*) L'operatore deve firmare in corrispondenza ad ogni riquadro per conferma dell'avvenuta operazione di controllo della posizione corretta dell'adesivo.

OPERATORE	TURNO 1	TURNO 2
METRI PER TURNO		
Firma	24/10/07	457

L'Operatore firmando la presente scheda di controllo certifica di conoscere la Scheda Requisiti Prodotto per LHC e di aver seguito le metodologie ivi contenute.

kaneka APICAL®
HIGH-TECH MATERIALS, INC. Polyimide Film

FILM TYPE:	200AV
THICKNESS:	50.8 uM
LOT #:	20041471 [illegible]
WIDTH:	11.0mm
NET WGT.:	1.02 KG
LENGTH:	1123M
PO#:	F-333/LHC/LHC
PART NO.	P1
SPLICES:	0

kaneka APICAL®
HIGH-TECH MATERIALS, INC. Polyimide Film

FILM TYPE:	200AV
THICKNESS:	50.8 uM
LOT #:	20041471 20
WIDTH:	11.0mm
NET WGT.:	1.02 KG
LENGTH:	1123M
PO#:	F-333/LHC/LHC
PART NO.	P1
SPLICES:	0

PIRELLI
Pirelli Cavi e Sistemi S.p.A.
Divisione Italia
Business Unit Fili Isolati Speciali

INVEX

LHC DIPOLE INSULATION -CONFORMITY CERTIFICATE

Re.: INVEX Material Requirements Card for LHC

CERTIFICATE No 2245-9

ANSALDO ORDER: BC228665 rev. 3 commessa F10209EM

PRODUCT

- [x] LHC CABLE FOR DIPOLE - LHCMBPA 00143 ind. B INTERNAL LAYER
- [ ] LHC CABLE FOR DIPOLE LHCMBPA 00153 ind. B EXTERNAL LAYER
- [ ] ANGULAR WEDGES TYPE 1 - LHCMBPA 00032 ind. 0
- [ ] ANGULAR WEDGES TYPE 2 - - LHCMBPA 00042 ind. 0
- [ ] ANGULAR WEDGES TYPE 3 - - LHCMBPA 00052 ind. 0
- [ ] ANGULAR WEDGES TYPE 4 - - LHCMBPA 00062 ind. 0

IDENTIFICATION

PRODUCT	BARE MATERIAL IDENTIFICATION	INSULATED MATERIAL IDENTIFICATION	No OF SPOOLS/WEDGES
CABLE INTERNAL LAYER	01B10037A	01B10037A	9
CABLE EXTERNAL LAYER			
WEDGES TYPE 1 3 m			
WEDGES TYPE 2 3 m			
WEDGES TYPE 3 3 m			
WEDGES TYPE 4 3 m			

INSULATING MATERIALS CARD No 2245-9 DATE 26-10-2001

TESTS	WINDING FORCE	TOLERANCE	WINDING REGULARITY	TOLERANCE
SPEC.				
KAPTON KAPTON -200HCI 11 mm		1-1.5% MAX	119	± 2 mm
Adhesive KAPTON 270LCI-1 9 mm		1-1.5% MAX	113	± 2 mm

IN LINE ELECTRICAL TEST	No OF REPAIRED FAULTS
1000 V 50 Hz	NO

AFTER FINAL INSPECTION WE CERTIFY THAT THIS MATERIAL HAS BEEN PRODUCED ACCORDING TO PIRELLI OPERATIVE INSTRUCTION IO/DBFIS/SQ2/01 LAST REVISION AND COMPLIES WITH ANSALDO ENERGIA SPECIFICATIONS 700RM08199 (CABLE) AND 700RM08200 (WEDGES).

SLPC2 RESPONSIBLE	PISANI EMILIO	DATE	26/10/2001
	PISANI EMILIO		

PIRELLI

Pirelli Cavi e Sistemi S.p.A.
Divisione Italia
Business Unit Fili Isolati Speciali

INVEX

SCHEDA DI CONTROLLO DI PROCESSO

Re.: INVEX Material Requirements Card for LHC

SPOOL NO Bobina N° 9
DATE-Data

MATERIALE: LHC CABLE FOR DIPOLE LHCMBPA 00143 ind. B INTERNAL LAYER-STRATO INTERNO R

IDENTIFICAZIONE

MATERIALE	IDENTIFICAZIONE	PRODOTTO	IDENTIFICAZIONE
Adhesive KAPTON 270LCI- 9 mm Kapton autocementante			
Controllo lato adesivo Kapton	Fatto Firma (*)		
KAPTON -200HCI 11 mm			
CAVO NUDO STRATO INTERNO	01 B100374	CAVO ISOLATO STRATO INTERNO	

CONTROLLO	Turno 1	Turno 2
Cavo nudo	☒ Regolare ☐ Fili rotti [ ] fili lenti [ ] paglie [ ] altro	☐ Regolare ☐ Fili rotti [ ] fili lenti [ ] paglie [ ] altro
KAPTON 200HCI accostato (-0 + 0.1 mm) e sfalsato 50%	OK ☐ Problemi _____	OK ☐ Problemi _____
Adhesive KAPTON GAP (2±0.2)mm	OK ☐ Problemi _____	OK ☐ Problemi _____
Falle spark tester 1000 V	METRI _____ _____	METRI _____ _____
Cavo collassato e riparato	METRI	METRI
Fili lenti segnalati	METRI	METRI
Difetti di calandratura - segnalati	METRI	METRI

Cambi	Turno 1	FIRMA	Turno 2	FIRMA
	METRI da testa interna		METRI da testa interna	
KAPTON 200HCI 1	325			
KAPTON 200HCI 2				
Adhesive KAPTON 270LCI		(*)		(*)
	370 / 180	(*)		(*)
		(*)		(*)
	20	(*)		(*)
		(*)		(*)

(*) L'operatore deve firmare in corrispondenza ad ogni riquadro per conferma dell'avvenuta operazione di controllo della posizione corretta dell'adesivo.

OPERATORE	TURNO 1	TURNO 2
METRI PER TURNO		
Firma	25 - 10 - 01	451

L'Operatore firmando la presente scheda di controllo certifica di conoscere la Scheda Requisiti Prodotto per LHC e di aver seguito le metodologie ivi contenute.

kaneka APICAL®
HIGH-TECH MATERIALS, INC. Polyimide Film

FILM TYPE:	200AV
THICKNESS:	50.8 uM
LOT #:	20041474-S2
WIDTH:	11.0mm
NET WGT.:	1.03 KG
LENGTH:	1283M
PO#:	F-333/LHC/LHC
PART NO.	P1
SPLICES:	0

kaneka APICAL®
HIGH-TECH MATERIALS, INC. Polyimide Film

FILM TYPE:	200AV
THICKNESS:	50.8 uM
LOT #:	20041471-24
WIDTH:	11.0mm
NET WGT.:	1.02 KG
LENGTH:	1123M
PO#:	F-333/LHC/LHC
PART NO.	P1
SPLICES:	0

PIRELLI
Pirelli Cavi e Sistemi S.p.A.
Divisione Italia
Business Unit Fili Isolati Speciali

INVEX

LHC DIPOLE INSULATION -CONFORMITY CERTIFICATE

Re.: INVEX Material Requirements Card for LHC

CERTIFICATE No 2245-8

ANSALDO ORDER: BC228665 rev. 3 commessa F10209EM

PRODUCT

- [x] LHC CABLE FOR DIPOLE - LHCMBPA 00143 ind. B INTERNAL LAYER
- [ ] LHC CABLE FOR DIPOLE LHCMBPA 00153 ind. B EXTERNAL LAYER
- [ ] ANGULAR WEDGES TYPE 1 - LHCMBPA 00032 ind. 0
- [ ] ANGULAR WEDGES TYPE 2 - - LHCMBPA 00042 ind. 0
- [ ] ANGULAR WEDGES TYPE 3 - - LHCMBPA 00052 ind. 0
- [ ] ANGULAR WEDGES TYPE 4 - - LHCMBPA 00062 ind. 0

IDENTIFICATION

PRODUCT	BARE MATERIAL IDENTIFICATION	INSULATED MATERIAL IDENTIFICATION	No OF SPOOLS/WEDGES
CABLE INTERNAL LAYER	01B10037B	01B10037B	8
CABLE EXTERNAL LAYER			
WEDGES TYPE 1 3 m			
WEDGES TYPE 2 3 m			
WEDGES TYPE 3 3 m			
WEDGES TYPE 4 3 m			

INSULATING MATERIALS CARD No 2245-8 DATE 25-10-2001

TESTS	WINDING FORCE	TOLERANCE	WINDING REGULARITY	TOLERANCE
SPEC.				
KAPTON KAPTON -200HCI 11 mm		1-1.5% MAX	119	± 2 mm
Adhesive KAPTON 270LCI-1 9 mm		1-1.5% MAX	113	± 2 mm

IN LINE ELECTRICAL TEST	No OF REPAIRED FAULTS
1000 V 50 Hz	NO

AFTER FINAL INSPECTION WE CERTIFY THAT THIS MATERIAL HAS BEEN PRODUCED ACCORDING TO PIRELLI OPERATIVE INSTRUCTION IO/DBFIS/SQ2/01 LAST REVISION AND COMPLIES WITH ANSALDO ENERGIA SPECIFICATIONS 700RM08199 (CABLE) AND 700RM08200 (WEDGES).

SLPC2 RESPONSIBLE	PISANI ENNIO	DATE	25/10/2001
	Pisani Ennio		

PIRELLI

Pirelli Cavi e Sistemi S.p.A.
Divisione Italia
Business Unit Fili Isolati Speciali

INVEX

SCHEDA DI CONTROLLO DI PROCESSO

Re.: INVEX Material Requirements Card for LHC

SPOOL NO Bobina N° 8
DATE-Data 12

MATERIALE: LHC CABLE FOR DIPOLE LHCMBPA 00143 ind. B INTERNAL LAYER-STRATO INTERNO

IDENTIFICAZIONE

MATERIALE	IDENTIFICAZIONE	PRODOTTO	IDENTIFICAZIONE
Adhesive KAPTON 270LCI- 9 mm Kapton autocementante			
Controllo lato adesivo Kapton	Fatto mor Firma (*)		
KAPTON -200HCI 11 mm			
CAVO NUDO STRATO INTERNO	01 B100378	CAVO ISOLATO STRATO INTERNO	

CONTROLLO	Turno 1	Turno 2
Cavo nudo	☒ Regolare ☐ Fili rotti [ ] fili lenti [ ] paglie [ ] altro	☐ Regolare ☐ Fili rotti [ ] fili lenti [ ] paglie [ ] altro
KAPTON 200HCI accostato (-0 + 0.1 mm) e sfalsato 50%	OK ☐ Problemi _____	OK ☐ Problemi _____
Adhesive KAPTON GAP (2±0.2)mm	OK ☐ Problemi _____	OK ☐ Problemi _____
Falle spark tester 1000 V	METRI _____ _____	METRI _____ _____
Cavo collassato e riparato	METRI	METRI
Fili lenti segnalati	METRI	METRI
Difetti di calandratura - segnalati	METRI	METRI

Cambi	Turno 1	FIRMA	Turno 2	FIRMA
	METRI da testa interna		METRI da testa interna	
KAPTON 200HCI 1	280			
KAPTON 200HCI 2				
Adhesive KAPTON 270LCI	250 / 60	(*)		(*)
		(*)		(*)
		(*)		(*)
		(*)		(*)
		(*)		(*)

(*) L'operatore deve firmare in corrispondenza ad ogni riquadro per conferma dell'avvenuta operazione di controllo della posizione corretta dell'adesivo.

OPERATORE	TURNO 1	TURNO 2
METRI PER TURNO		
Firma mor	25-10-04	mt 454

L'Operatore firmando la presente scheda di controllo certifica di conoscere la Scheda Requisiti Prodotto per LHC e di aver seguito le metodologie ivi contenute.

Kaneka APICAL®
HIGH-TECH MATERIALS, INC. Polyimide Film

FILM TYPE:	200AV
THICKNESS:	50.8 uM
LOT #:	20041471 -22
WIDTH:	11.0mm
NET WGT.:	1.02 KG
LENGTH:	1123M
PO#:	F-333/LHC/LHC
PART NO.	P1
SPLICES:	0

Kaneka APICAL®
HIGH-TECH MATERIALS, INC. Polyimide Film

FILM TYPE:	200AV
THICKNESS:	50.8 uM
LOT #:	20041471 -16
WIDTH:	11.0mm
NET WGT.:	1.02 KG
LENGTH:	1123M
PO#:	F-333/LHC/LHC
PART NO.	P1
SPLICES:	0

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXXXX-QA-123456

EDMS Document No.
666666

Certificate of Conformity

for CERN supplied components

1. ***Part description***	2. ***CERN Part ID*** *(19 chars)*			5. ***Other identification***
	3. ***Part No.*** *(10 chars)*	-	4. ***Serial No.*** *(8 chars)*	
Interlayers	LHCMB__A093	-	0932-044	Lot n° 44
	LHCMB__A094	-	0941-038	Lot n° 38E

6. ***Recipient contractor:*** ANSALDO ENERGIA Spa

7. ***Contract / Order No :*** F-302/LHC/LHC

8. ***Responsible person at CERN:*** Michele Modena
Tel. 00 41 22 767 34 69
E-mail. Michele.Modena@cern.ch

9. ***Reference specification:*** LHC-MMS/98-198 Rev.1.1

10. ***Reference drawings:*** LHCMB__A0093 Rev.B, LHCMB__A0094 Rev.A

11. ***Part manufactured by:*** TOSTI

12. ***Acceptance test refs:*** See attachment paper

13. ***Acceptance test results:*** Conform to Technical Specification

14. ***Comments:*** Quantity delivered : 10 over 30

CERN certifies that the supplied material is conform to the reference specification.

Date :	***Name :***	***Signature:***
23 – 01 - 2002	Michele Modena Katleen Coeck	

Certificate of Conformity

Shipper: Tosti SAS
Contract: CD 1000444 Customer: CERN
Commodity: Standard coil interlayers
Drawing: LHCMB__A0093
Certificate N: CC153-00932-044 Date of issue: 28.11.2001

Lot number: 44

Raw material certificates: 9467 of 18/09/2001

Dimensions: conform

Surface finish and cleaning: conform

For the measured values see inspection certificate N: 44
date of issue: 28.11.2001

We hereby certify that the material described herein has been made in accordance with the rules of the contract and according to the above-mentioned drawing.

Seal and signature

VISTO
S.A.Q.

Foglio di ispezione n° 44- Inspection certificate n° 44 **Castel del Piano** 28.11.2001

	Lettura A : Dimensione nominale 15.90 mm; Limiti 15.50 – 16.45 mm				Lettura A + B : Passa – Non Passa		Lunghezza bandella
Lotto n° 44	Punto 1	Punto 2	Punto 3	Punto 4	Punto 4	Punto 1	
Bandella 1	15.95	16.04	16.16	16.26	passa	passa	1000
Bandella 2	15.95	15.90	16.04	16.11	passa	passa	1000
Bandella 3	16.05	16.00	15.91	15.96	passa	passa	1000
Bandella 4	16.22	16.17	16.05	16.15	passa	passa	1000
Bandella 5	15.94	15.85	15.96	16.00	passa	passa	1000
Bandella 6	15.94	15.91	15.70	15.87	passa	passa	1000
Bandella 7	16.00	16.12	16.20	16.03	passa	passa	1000
Bandella 8	15.98	15.90	16.03	15.98	passa	passa	1000
Bandella 9	16.00	16.10	16.17	16.22	passa	passa	1000
Bandella 10	16.21	16.10	16.08	16.00	passa	passa	1000
Bandella 11	15.90	15.80	15.96	15.85	passa	passa	1000
Bandella 12	16.10	16.05	16.07	16.00	passa	passa	1000
Bandella 13	15.99	15.88	15.90	15.91	passa	passa	1000
Bandella 14	15.81	15.94	15.99	15.89	passa	passa	1000
Bandella 15	16.04	16.12	16.20	16.08	passa	passa	1000
Bandella 16	16.04	16.11	15.98	15.89	passa	passa	1000
Bandella 17	15.90	15.80	15.74	15.84	passa	passa	1000
Bandella 18	16.02	16.16	16.11	16.03	passa	passa	1000
Bandella 19	15.91	15.92	16.05	16.12	passa	passa	1000
Bandella 20	15.97	16.03	16.11	16.23	passa	passa	1000

Firma Collaudatore _____

Certificate of Conformity

Shipper: Tosti SAS
Contract: CD 1000444
Commodity: End coil interlayers
Drawing: LHCMB__A0094
Certificate N: CC153-00941-038

Customer: CERN

Date of issue: 30.10.2001

Lot number: 38

Raw material certificates: 23 92303820 of 18/05/00

Dimensions: conform

Surface finish and cleaning: conform

For the measured values see inspection certificate N: 38E
date of issue: 30.10.2001

We hereby certify that the material described herein has been made in accordance with the rules of the contract and according to the above-mentioned drawing.

Seal and signature

VISTO S.A.Q.

Foglio di ispezione n° 38E - Inspection certificate n° 38E **Castel del Piano** 30.10.2001

	Larghezza (Width)	**Lunghezza (Length)**	Spessore (thickness)
Lotto n° 38	136.13±0.3 (mm)	205 (mm)	**0.5** (mm)
Bandella 1	136.17	205.04	0.5
Bandella 2	136.07	205.00	0.5

Le misure sono riportate in millimetri. La numerosità del lotto è di 8 end coil intrlayers.
Certificato di collaudo allegato alla dichiarazione di conformità CC153-00941-038.

Firma Collaudatore

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.	**LHC-MB**
CERN Div./Group or Supplier/Contractor Document No.	**MB**
EDMS Document No	

Certificate of Conformity
for CERN Delivered Components

Delivery composition

Part name	***Part ID***	*In the Delivery*	*Number of delivered sets if present in the delivery*
Inner layer sets	HCMB_A0059 to 68	**X**	**10**
Outer layer sets	HCMB_A0076 to 83 and 88	**NO**	**-**

Delivery To:	ANSALDO ENERGIA		
Expedition date :	19/04/2001		
Serial No. / Batch production No.:	Tosti 22		
Manufacturer:	Tosti SAS		
Contract / Order No.:	CD/1000506		
Comment on delivery:	Magnet n 9,10,+2 set to replace the broken parts (Inner only)		
Responsible person at CERN:	Paolo Fessia	***Tel.***	00 41 22 767 3291
		E-mail.	Paolo.Fessia@cern.ch
Responsible person at the producer of this delivery:	Giuseppe Franceschelli	***Tel.***	00 39 0564 955358
		E-mail.	Tostisas@tin.it
Related tech. Specification:	LHC-MMS/98-198 rev. 1.1 (EDMS No. 107759)		
End spacer tech. Specification	LHC-MMS/99-209 (IT-2615) (EDMS No. 108110)		
Related drawings:	LHCMB_A0059 to 68 and LHCMB_A0076 to 83 plus 88. Find the detailed list attached		
Raw material producer	Isola Composites		
Ref. N. of the raw material order.	07018.91.200		
Acceptance test references:	Measurements with gauges performed at Tosti's premises		
Acceptance test results:	**CONFORM (dimensions are in the indicated tolerances)**		
Notes			

CERN certifies that the delivered material is conform to the technical specification mentioned above and that the material can be shipped to the CMA.

Date:	***Name:***	***Signature***
2001-03-29	Simon Cuzin	

R. 15/05/01

Inner layer

DRAWING NUMBER	REVISION INDEX
LHCMB__A0059	A
LHCMB__A0060	A
LHCMB__A0061	B
LHCMB__A0062	A
LHCMB__A0063	A
LHCMB__A0064	A
LHCMB__A0065	B
LHCMB__A0066	A
LHCMB__A0067	B
LHCMB__A0068	C
LHCMB__A0069	-
LHCMB__A0070	A
LHCMB__A0071	A
LHCMB__A0072	B
LHCMB__A0073	B

Outer Layer

DRAWING NUMBER	REVISION INDEX
LHCMB__A0076	-
LHCMB__A0077	B
LHCMB__A0078	C
LHCMB__A0079	B
LHCMB__A0080	C
LHCMB__A0081	B
LHCMB__A0082	B
LHCMB__A0083	D
LHCMB__A0084	-
LHCMB__A0087	B
LHCMB__A0088	-

Certificate of Conformity

Shipper: Tosti SAS
Contract: CD 1000506
Commodity: Coil Inner Layer
Drawing: see below
Certificate N: CC153-0059/68-022

Customer: CERN

Date of issue: 30.03.2001

Lot number: Tosti 22

Raw material certificates: 704084/2 of 22.11.00

Dimensions: conform

Surface finish and cleaning: conform

For the measured values see inspection certificates relative to pieces:

LHCMB__A0059: from 59-09-01 to 59-09-20 of 20/03/01;
LHCMB__A0060: from 60-09-01 to 60-09-20 of 20/03/01;
LHCMB__A0061: from 61-09-01 to 61-09-20 of 20/03/01;
LHCMB__A0062: from 62-09-01 to 62-09-20 of 20/03/01;
LHCMB__A0063: from 63-09-01 to 63-09-20 of 20/03/01;
LHCMB__A0064: from 64-09-01 to 64-09-20 of 20/03/01;
LHCMB__A0065: from 65-09-01 to 65-09-20 of 20/03/01;
LHCMB__A0066: from 66-09-01 to 66-09-20 of 20/03/01;
LHCMB__A0067: from 67-09-01 to 67-09-20 of 20/03/01;
LHCMB__A0068: from 68-09-01 to 68-09-20 of 20/03/01;

We hereby certify that the material described herein has been made in accordance with the rules of the contract and according to the above-mentioned drawing.

Signature

Tosti

SINCERT

Casteldelpiano lì 29/03/01

Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

REPORT DI COLLAUDO

Cliente: CERN **Ordine: CD1000506** **del:** **Disegno n.: LHCMB__A0068** **N° Pezzi collaudato: 20**

N.B. le quote sono espresse in millimetri

Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

Nominale	15.4 –0.1							
Pezzo 68-09-01	15.36							
Pezzo 68-09-02	15.38							
Pezzo 68-09-03	15.37							
Pezzo 68-09-04	15.35							
Pezzo 68-09-05	15.35							
Pezzo 68-09-06	15.33							
Pezzo 68-09-07	15.34							
Pezzo 68-09-08	15.35							
Pezzo 68-09-09	15.37							
Pezzo 68-09-10	15.35							
Pezzo 68-09-11	15.36							
Pezzo 68-09-12	15.33							
Pezzo 68-09-13	15.34							
Pezzo 68-09-14	15.38							
Pezzo 68-09-15	15.34							
Pezzo 68-09-16	15.36							
Pezzo 68-09-17	15.31							
Pezzo 68-09-18	15.36							
Pezzo 68-09-19	15.35							
Pezzo 68-09-20	15.36							

IL COLLAUDATORE

Tosti
SINCERT
Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

Casteldelpiano lì 29/03/01

REPORT DI COLLAUDO
Cliente: CERN **Ordine: CD1000506** **del: 31/10/00** **Disegno n.: LHCMB__A0067** **N° Pezzi collaudato: 20**

N.B. le quote sono espresse in millimetri
Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

Nominale	142.55	27.10	52°	84.22	5.38dx			
Pezzo 67-09-01	142.51	27.01	52°	83.99	5.39			
Pezzo 67-09-02	142.51	26.97	52°	84.07	5.41			
Pezzo 67-09-03	142.40	26.90	52°	83.99	5.36			
Pezzo 67-09-04	142.16	26.90	52°	84.07	5.38			
Pezzo 67-09-05	142.11	26.90	52°	84.04	5.36			
Pezzo 67-09-06	142.37	26.90	52°	84.04	5.36			
Pezzo 67-09-07	142.56	26.94	52°	84.05	5.40			
Pezzo 67-09-08	142.65	27.04	52°	84.04	5.39			
Pezzo 67-09-09	142.63	27.06	52°	84.03	5.35			
Pezzo 67-09-10	142.75	26.95	52°	84.09	5.36			
Pezzo 67-09-11	142.92	27.12	52°	84.07	5.40			
Pezzo 67-09-12	142.95	27.00	52°	84.13	5.36			
Pezzo 67-09-13	142.95	27.07	52°	83.99	5.34			
Pezzo 67-09-14	142.95	27.11	52°	84.00	5.37			
Pezzo 67-09-15	142.95	27.05	52°	84.13	5.41			
Pezzo 67-09-16	142.95	27.08	52°	84.12	5.41			
Pezzo 67-09-17	142.29	26.98	52°	84.08	5.41			
Pezzo 67-09-18	142.63	27.11	52°	84.13	5.42			
Pezzo 67-09-19	142.40	27.03	52°	84.02	5.39			
Pezzo 67-09-20	142.37	27.05	52°	84.04	5.40			

IL COLLAUDATORE

Tosti
SINCERT

Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

Casteldelpiano lì 29/03/01

REPORT DI COLLAUDO
Cliente: CERN **Ordine: CD1000506** **del: 31/10/00** **Disegno n.: LHCMB__A0066** **N° Pezzi collaudato: 20**

N.B. le quote sono espresse in millimetri
Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

Nominale	99.65	30.10	61°	7.23	Δ			
Pezzo 66-09-01	99.31	30.03	61°	7.22	0.05			
Pezzo 66-09-02	99.30	29.97	61°	7.20	0.10			
Pezzo 66-09-03	99.50	30.16	61°	7.24	0.08			
Pezzo 66-09-04	99.51	30.10	61°	7.22	0.05			
Pezzo 66-09-05	99.56	30.04	61°	7.18	0.02			
Pezzo 66-09-06	99.48	30.16	61°	7.23	0.03			
Pezzo 66-09-07	99.39	30.08	61°	7.22	0.05			
Pezzo 66-09-08	99.57	30.18	61°	7.22	0.03			
Pezzo 66-09-09	99.62	30.21	61°	7.23	0.02			
Pezzo 66-09-10	99.67	30.25	61°	7.23	0.02			
Pezzo 66-09-11	99.67	30.26	61°	7.24	0.01			
Pezzo 66-09-12	99.59	30.28	61°	7.20	0.01			
Pezzo 66-09-13	99.66	30.23	61°	7.21	0.05			
Pezzo 66-09-14	99.58	30.30	61°	7.18	0.05			
Pezzo 66-09-15	99.60	30.26	61°	7.19	0.10			
Pezzo 66-09-16	99.72	30.30	61°	7.20	0.00			
Pezzo 66-09-17	99.71	30.29	61°	7.19	0.03			
Pezzo 66-09-18	99.57	30.24	61°	7.20	0.06			
Pezzo 66-09-19	99.73	30.30	61°	7.20	0.04			
Pezzo 66-09-20	99.70	30.30	61°	7.20	0.04			

Il COLLAUDATORE

Tosti
SINCERT
Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

Casteldelpiano lì 29/03/01

REPORT DI COLLAUDO
Cliente: CERN **Ordine: CD1000506** **del: 31/10/00** **Disegno n.: LHCMB__A0065** **N° Pezzi collaudato: 20**

N.B. le quote sono espresse in millimetri
Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

Nominale	60.77	26.30	70.7°	49.22	7.73 dx	Δ		
Pezzo 65-09-01	60.93	26.37	70.7°	48.96	7.69	0.06		
Pezzo 65-09-02	60.87	26.34	70.7°	48.98	7.73	0.05		
Pezzo 65-09-03	60.89	26.29	70.7°	49.05	7.70	0.03		
Pezzo 65-09-04	60.88	26.33	70.7°	48.98	7.74	0.06		
Pezzo 65-09-05	60.87	26.34	70.7°	49.00	7.76	0.06		
Pezzo 65-09-06	60.89	26.38	70.7°	49.13	7.75	0.06		
Pezzo 65-09-07	60.78	26.27	70.7°	49.12	7.75	0.03		
Pezzo 65-09-08	60.79	26.27	70.7°	49.02	7.78	0.05		
Pezzo 65-09-09	60.86	26.32	70.7°	49.08	7.76	0.05		
Pezzo 65-09-10	60.77	26.30	70.7°	49.00	7.74	0.03		
Pezzo 65-09-11	60.91	26.38	70.7°	49.06	7.75	0.05		
Pezzo 65-09-12	60.83	26.34	70.7°	49.15	7.75	0.03		
Pezzo 65-09-13	60.81	26.34	70.7°	49.08	7.75	0.02		
Pezzo 65-09-14	60.80	26.36	70.7°	49.08	7.75	0.04		
Pezzo 65-09-15	60.85	26.29	70.7°	49.06	7.75	0.05		
Pezzo 65-09-16	60.81	26.27	70.7°	49.00	7.76	0.06		
Pezzo 65-09-17	60.83	26.40	70.7°	48.96	7.76	0.06		
Pezzo 65-09-18	60.84	26.24	70.7°	49.18	7.76	0.05		
Pezzo 65-09-19	60.95	26.22	70.7°	48.92	7.68	0.03		
Pezzo 65-09-20	60.81	26.30	70.7°	49.00	7.74	0.02		

IL COLLAUDATORE

Tosti
SINCERT
Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

Casteldelpiano lì 29/03/01

REPORT DI COLLAUDO
Cliente: CERN **Ordine: CD 1000506** **del: 31/10/00** **Disegno n.: LHCMB__A0064** **N° Pezzi collaudato: 20**

N.B. le quote sono espresse in millimetri
Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

Nominale	23.3	78°	26.90	16.54	Δ		
Pezzo 64-09-01	23.18	78°	26.79	16.52	0.05		
Pezzo 64-09-02	23.17	78°	26.92	16.60	0.03		
Pezzo 64-09-03	23.27	78°	26.87	16.63	0.03		
Pezzo 64-09-04	23.27	78°	26.88	16.61	0.03		
Pezzo 64-09-05	23.24	78°	26.85	16.54	0.03		
Pezzo 64-09-06	23.23	78°	26.88	16.64	0.05		
Pezzo 64-09-07	23.21	78°	26.86	16.64	0.04		
Pezzo 64-09-08	23.25	78°	26.86	16.64	0.04		
Pezzo 64-09-09	23.21	78°	26.87	16.66	0.04		
Pezzo 64-09-10	23.24	78°	26.90	16.62	0.04		
Pezzo 64-09-11	23.19	78°	26.82	16.59	0.04		
Pezzo 64-09-12	23.17	78°	26.88	16.58	0.05		
Pezzo 64-09-13	23.24	78°	26.87	16.62	0.05		
Pezzo 64-09-14	23.23	78°	26.85	16.63	0.04		
Pezzo 64-09-15	23.20	78°	26.86	16.61	0.05		
Pezzo 64-09-16	23.21	78°	26.82	16.59	0.10		
Pezzo 64-09-17	23.23	78°	26.81	16.61	0.10		
Pezzo 64-09-18	23.24	78°	26.84	16.56	0.04		
Pezzo 64-09-19	23.26	78°	26.85	16.63	0.04		
Pezzo 64-09-20	23.22	78°	26.86	16.65	0.04		

IL COLLAUDATORE

Tosti
SINCERT

Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

Casteldelpiano lì 29/03/01

REPORT DI COLLAUDO
Cliente: CERN **Ordine: CD 1000506** **del: 31/10/00** **Disegno n.: LHCMB__A0063** **N° Pezzi collaudato: 20**

N.B. le quote sono espresse in millimetri
Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

Nominale	15.4 –0.1							
Pezzo 63-09-01	15.32							
Pezzo 63-09-02	15.34							
Pezzo 63-09-03	15.31							
Pezzo 63-09-04	15.35							
Pezzo 63-09-05	15.35							
Pezzo 63-09-06	15.39							
Pezzo 63-09-07	15.33							
Pezzo 63-09-08	15.36							
Pezzo 63-09-09	15.32							
Pezzo 63-09-10	15.36							
Pezzo 63-09-11	15.35							
Pezzo 63-09-12	15.32							
Pezzo 63-09-13	15.34							
Pezzo 63-09-14	15.33							
Pezzo 63-09-15	15.38							
Pezzo 63-09-16	15.33							
Pezzo 63-09-17	15.30							
Pezzo 63-09-18	15.38							
Pezzo 63-09-19	15.31							
Pezzo 63-09-20	15.33							

IL COLLAUDATORE

Tosti
SINCERT
Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

Casteldelpiano lì 29/03/01

REPORT DI COLLAUDO
Cliente: CERN **Ordine: CD 1000506** **del:31/10/2000** **Disegno n.: LHCMB__A0062** **N° Pezzi collaudato: 20**

N.B. le quote sono espresse in millimetri
Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

Nominale	142.57	27.10	52°	83.67	51.92	5.38sx	5.38dx	
Pezzo 62-09-01	142.56	27.09	52°	83.68	52.20	5.40	5.40	
Pezzo 62-09-02	142.66	27.24	52°	83.50	51.98	5.39	5.39	
Pezzo 62-09-03	142.77	27.19	52°	83.52	51.99	5.35	5.39	
Pezzo 62-09-04	142.86	27.14	52°	83.45	51.92	5.36	5.39	
Pezzo 62-09-05	142.84	27.24	52°	83.61	52.09	5.38	5.39	
Pezzo 62-09-06	142.75	27.23	52°	83.55	51.97	5.38	5.35	
Pezzo 62-09-07	142.87	27.16	52°	83.49	52.06	5.37	5.40	
Pezzo 62-09-08	142.83	27.21	52°	83.62	52.06	5.39	5.39	
Pezzo 62-09-09	142.75	27.13	52°	83.66	52.13	5.38	5.39	
Pezzo 62-09-10	142.79	27.18	52°	83.69	52.10	5.40	5.38	
Pezzo 62-09-11	142.83	27.20	52°	83.47	51.91	5.40	5.41	
Pezzo 62-09-12	142.72	27.16	52°	83.56	52.04	5.39	5.40	
Pezzo 62-09-13	142.69	27.11	52°	83.55	52.00	5.38	5.39	
Pezzo 62-09-14	142.86	27.17	52°	83.43	51.95	5.37	5.37	
Pezzo 62-09-15	142.95	27.14	52°	83.40	51.90	5.39	5.39	
Pezzo 62-09-16	142.55	27.08	52°	83.39	51.90	5.39	5.40	
Pezzo 62-09-17	142.51	27.01	52°	83.32	51.91	5.41	5.36	
Pezzo 62-09-18	142.61	27.15	52°	83.31	51.86	5.38	5.36	
Pezzo 62-09-19	142.90	27.21	52°	83.44	51.91	5.38	5.40	
Pezzo 62-09-20	142.70	27.20	52°	83.44	51.92	5.39	5.38	

IL COLLAUDATORE

Tosti
SINCERT

Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

Casteldelpiano lì 29/03/01

REPORT DI COLLAUDO
Cliente: CERN **Ordine: CD1000506** **del: 31/10/00** **Disegno n.: LHCMB__A0061** **N° Pezzi collaudato: 20**

N.B. le quote sono espresse in millimetri
Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

Nominale	99.62	30.10	61°	68.38	37.69	7.23sx	7.23dx	Δ
Pezzo 61-09-01	99.57	30.12	61°	68.20	37.67	7.18	7.23	0.20
Pezzo 61-09-02	99.63	30.13	61°	68.28	37.69	7.20	7.22	0.14
Pezzo 61-09-03	99.59	30.14	61°	68.30	37.67	7.20	7.21	0.10
Pezzo 61-09-04	99.56	30.15	61°	68.14	37.68	7.19	7.24	0.15
Pezzo 61-09-05	99.61	30.15	61°	68.29	37.64	7.23	7.25	0.11
Pezzo 61-09-06	99.55	30.13	61°	68.20	37.62	7.20	7.25	0.12
Pezzo 61-09-07	99.55	30.14	61°	68.22	37.67	7.18	7.23	0.05
Pezzo 61-09-08	99.58	30.10	61°	68.25	37.65	7.19	7.22	0.05
Pezzo 61-09-09	99.51	30.13	61°	68.23	37.68	7.23	7.22	0.03
Pezzo 61-09-10	99.48	30.11	61°	68.37	37.64	7.21	7.23	0.01
Pezzo 61-09-11	99.55	30.16	61°	68.24	37.61	7.23	7.24	0.02
Pezzo 61-09-12	99.54	30.07	61°	68.27	37.63	7.20	7.22	0.02
Pezzo 61-09-13	99.54	30.17	61°	68.27	37.67	7.20	7.25	0.01
Pezzo 61-09-14	99.43	30.09	61°	68.25	37.71	7.22	7.24	0.05
Pezzo 61-09-15	99.48	30.08	61°	68.24	37.66	7.22	7.23	0.02
Pezzo 61-09-16	99.52	30.11	61°	68.25	37.66	7.23	7.24	0.04
Pezzo 61-09-17	99.45	30.10	61°	68.20	37.71	7.21	7.22	0.08
Pezzo 61-09-18	99.48	30.13	61°	68.28	37.69	7.22	7.24	0.07
Pezzo 61-09-19	99.54	30.12	61°	68.29	37.73	7.20	7.21	0.10
Pezzo 61-09-20	99.59	30.02	61°	68.28	37.63	7.19	7.23	0.08

IL COLLAUDATORE

Tosti
SINCERT
Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

Casteldelpiano lì 29/03/01

REPORT DI COLLAUDO
Cliente: CERN **Ordine: CD 1000506** **del: 31/10/00** **Disegno n.: LHCMB__A0060** **N° Pezzi collaudato: 20**

N.B. le quote sono espresse in millimetri
Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

Nominale	60.77	26.30	70°	47.31	22.11	7.73 sx	7.73 dx	Δ
Pezzo 60-09-01	60.73	26.31	70°	47.15	22.02	7.73	7.71	0.12
Pezzo 60-09-02	60.75	26.27	70°	47.15	22.03	7.73	7.75	0.05
Pezzo 60-09-03	60.79	26.35	70°	47.15	22.02	7.74	7.74	0.20
Pezzo 60-09-04	60.72	26.34	70°	47.15	21.99	7.73	7.75	0.20
Pezzo 60-09-05	60.70	26.37	70°	47.23	22.03	7.73	7.72	0.13
Pezzo 60-09-06	60.78	26.24	70°	47.19	22.03	7.75	7.74	0.05
Pezzo 60-09-07	60.73	26.22	70°	47.10	21.99	7.71	7.75	0.15
Pezzo 60-09-08	60.73	26.30	70°	47.11	22.01	7.74	7.76	0.16
Pezzo 60-09-09	60.76	26.27	70°	47.13	21.97	7.74	7.75	0.10
Pezzo 60-09-10	60.68	26.40	70°	47.09	22.03	7.73	7.74	0.15
Pezzo 60-09-11	60.78	26.29	70°	47.15	22.03	7.74	7.73	0.11
Pezzo 60-09-12	60.74	26.30	70°	47.09	22.02	7.72	7.71	0.13
Pezzo 60-09-13	60.73	26.28	70°	47.11	22.01	7.72	7.74	0.16
Pezzo 60-09-14	60.76	26.28	70°	47.12	22.00	7.69	7.78	0.16
Pezzo 60-09-15	60.79	26.28	70°	47.10	21.99	7.73	7.74	0.10
Pezzo 60-09-16	60.72	26.34	70°	47.14	21.99	7.72	7.75	0.15
Pezzo 60-09-17	60.71	26.21	70°	47.15	22.00	7.75	7.72	0.04
Pezzo 60-09-18	60.76	26.38	70°	47.19	22.00	7.69	7.74	0.07
Pezzo 60-09-19	60.73	26.26	70°	47.23	22.06	7.73	7.74	0.07
Pezzo 60-09-20	60.78	26.28	70°	47.17	22.05	7.75	7.70	0.03

IL COLLAUDATORE

Tosti

SINCERT

Casteldelpiano lì 29/03/01

Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

REPORT DI COLLAUDO

Cliente: CERN **Ordine : CD1000506** **del: 31/10/2000** **Disegno n.: LHCMB__A0059** **N° Pezzi collaudato: 20**

N.B. le quote sono espresse in millimetri

Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

Nominale	23.3 ±0.4	78°	24.71	14.66	Δ		
Pezzo 59-09-01	23.13	78°	24.70	14.73	0.10		
Pezzo 59-09-02	23.17	78°	24.74	14.69	0.07		
Pezzo 59-09-03	23.31	78°	24.67	14.74	0.05		
Pezzo 59-09-04	23.17	78°	24.68	14.74	0.03		
Pezzo 59-09-05	23.18	78°	24.71	14.75	0.05		
Pezzo 59-09-06	23.15	78°	24.70	14.75	0.04		
Pezzo 59-09-07	23.16	78°	24.73	14.76	0.04		
Pezzo 59-09-08	23.09	78°	24.73	14.79	0.04		
Pezzo 59-09-09	23.20	78°	24.65	14.70	0.02		
Pezzo 59-09-10	23.15	78°	24.70	14.70	0.02		
Pezzo 59-09-11	23.18	78°	24.70	14.74	0.03		
Pezzo 59-09-12	23.18	78°	24.64	14.72	0.04		
Pezzo 59-09-13	23.17	78°	24.70	14.73	0.03		
Pezzo 59-09-14	23.17	78°	24.67	14.74	0.04		
Pezzo 59-09-15	23.13	78°	24.70	14.76	0.02		
Pezzo 59-09-16	23.15	78°	24.69	14.64	0.03		
Pezzo 59-09-17	23.14	78°	24.68	14.72	0.02		
Pezzo 59-09-18	23.18	78°	24.67	14.65	0.01		
Pezzo 59-09-19	23.18	78°	24.68	14.75	0.01		
Pezzo 59-09-20	23.21	78°	24.67	14.76	0.02		

IL COLLAUDATORE

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-MB
CERN Div./Group or Supplier/Contractor Document No.
MB
EDMS Document No

Certificate of Conformity
for CERN Delivered Components

Delivery composition			
Part name	***Part ID***	*In the Delivery*	*Number of delivered sets if present in the delivery*
Inner layer sets	HCMB_A0059 to 68	**NO**	**-**
Outer layer sets	HCMB_A0077 to 83	**X**	**12**

Delivery To:	ANSALDO ENERGIA		
Expedition date :	21/11/2001		
Serial No. / Batch production No.:	Tosti 24+25		
Manufacturer:	Tosti SAS		
Contract / Order No.:	CD/1000506		
Comment on delivery:	Magnet n 9,10,11		
Responsible person at CERN:	Paolo Fessia	***Tel.***	00 41 22 767 3291
		E-mail.	Paolo.Fessia@cern.ch
Responsible person at the producer of this delivery:	Giuseppe Franceschelli	***Tel.***	00 39 0564 955358
		E-mail.	Tostisas@tin.it
Related tech. Specification:	LHC-MMS/98-198 rev. 1.1 (EDMS No. 107759)		
End spacer tech. Specification	LHC-MMS/99-209 (IT-2615) (EDMS No. 108110)		
Related drawings:	LHCMB_A0059 to 68 and LHCMB_A0076 to 83 plus 88. Find the detailed list attached		
Raw material producer	Isola Composites		
Ref. N. of the raw material order.	07018.91.200		
Acceptance test references:	Measurements with gauges performed at Tosti's premises		
Acceptance test results:	**CONFORM (dimensions are in the indicated tolerances)** **The pieces 80 and 83 will be send later with the new dimension**		
Notes			

CERN certifies that the delivered material is conform to the technical specification mentioned above and that the material can be shipped to the CMA.

Date:	***Name:***	***Signature***
2001-11-21	Cuzin Simon	

Inner layer

DRAWING NUMBER	REVISION INDEX
LHCMB__A0059	A
LHCMB__A0060	A
LHCMB__A0061	B
LHCMB__A0062	A
LHCMB__A0063	A
LHCMB__A0064	A
LHCMB__A0065	B
LHCMB__A0066	A
LHCMB__A0067	B
LHCMB__A0068	C
LHCMB__A0069	-
LHCMB__A0070	A
LHCMB__A0071	A
LHCMB__A0072	B
LHCMB__A0073	B

Outer Layer

DRAWING NUMBER	REVISION INDEX
LHCMB__A0076	-
LHCMB__A0077	B
LHCMB__A0078	C
LHCMB__A0079	B
LHCMB__A0080	C
LHCMB__A0081	B
LHCMB__A0082	B
LHCMB__A0083	D
LHCMB__A0084	-
LHCMB__A0087	B
LHCMB__A0088	-

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXXXX-QA-123456

EDMS Document No.
666666

Certificate of Conformity

for CERN supplied components

1. ***Part description***	2. ***CERN Part ID*** *(19 chars)*			5. ***Other identification***
	3. ***Part No.*** *(10 chars)*	-	4. ***Serial No.*** *(8 chars)*	
Collar A type 1	HCMB_ _ A099	-	MAL20034	Batch N° MAL20034
Collar A type 2	HCMB_ _ A100	-	MAL20034	
Collar B type 1	HCMB_ _ A102	-	MAL20034	
Collar B type 2	HCMB_ _ A103	-	MAL20034	
Collar C type 1	HCMB_ _ A105	-	MAL20034	
Collar C type 2	HCMB_ _ A100	-	MAL20034	
	-			
	-			

6. ***Recipient contractor:***	ANSALDO ENERGIA S.P.A.		
7. ***Contract / Order No :***	F-302/LHC/LHC		
8. ***Responsible person at CERN:***	Aniello RUSSO	***Tel.***	00 41 22 767 2977
		E-mail.	Aniello.Russo@cern.ch
9. ***Reference specification:***	LHC-MB_A-C1-0018		
10. ***Reference drawings:***	LHCMB_ _A0099 Rev. B, LHCMB_ _A0100 Rev. B, LHCMB_ _A0102 Rev. A, LHCMB_ _A0103 Rev. A, LHCMB_ _A0105 Rev. A, LHCMB_ _A0106 Rev. A.		
11. ***Part manufactured by:***	Ernesto Malvestiti s.p.a (IT)		
12. ***Acceptance test refs:***	See attachment paper		
13. ***Acceptance test results:***	Conform to Technical Specification		
14. ***Comments:***	MAL20034 for ANSALDO 10 Collars delivered 16/10/2001 From CERN to ANSALDO		

CERN certifies that the supplied material is conform to the reference specification.

Date :	***Name :***	***Signature :***
16 – 10 - 2001	Aniello RUSSO	

A : 22/10/01 QA

ERNESTO MALVESTITI SPA
STAMPI
DI PRECISIONE

CERTIFICATE OF CONFORMITY FOR FINE BLANKED AUSTENITIC STEEL COLLARS FOR DIPOLES LHC

ORDER/CONTRACT N° **F-316/LHC/LHC**

Batch id: M A L 2 0 0 3 4

Boxes id: 0 1 / 0 2

Batch Consisting of 2 BOXES with 2250 pieces = 4500 pcs.

Steel Sheet Pallet Number: 13-42916; 13-42914

Batch Type: COLLIER A type 1, LHCMB_ _A0099

Date of Batch Production: September / 2001

Firm Destination:

ANSALDO (IT)

TEST RESULTS

Sample n°	Test Level	Report N°*	Date	Responsible	Signature
1	A	A034/1	3-Oct-01	Name: Umberto Raggio	Umberto Raggio
2	A	A034/2	3-Oct-01	Name: Umberto Raggio	Umberto Raggio
3	A	A034/3	3-Oct-01	Name: Umberto Raggio	Umberto Raggio

*This Cerficate and results are saved on file download on CERN Website and available through CERN project Ingeneer.

We certify that the quality control and the results are conforming to the requirements of CERN order/contract mentioned above.

Date: 9/10/2001

Seal/Segnature Umberto Raggio

ERNESTO MALVESTITI SPA
STAMPI
DI PRECISIONE

CERTIFICATE OF CONFORMITY FOR FINE BLANKED AUSTENITIC STEEL COLLARS FOR DIPOLES LHC

ORDER/CONTRACT N° **F-316/LHC/LHC**

Batch id: M A L 2 0 0 3 4

Boxes id: 0 1 / 0 2

Batch Consisting of 2 BOXES with 2250 pieces = 4500 pcs.

Steel Sheet Pallet Number: 13-42625; 13-42601

Batch Type: COLLIER A type 2, LHCMB_ _A0100

Date of Batch Production: August & October / 2001 **Firm Destination: ANSALDO (IT)**

TEST RESULTS

Sample n°	Test Level	Report N°*	Date	Responsible	Signature
1	A	A034/1	9-Oct-01	Name: Umberto Raggio	Umberto Raggio
2	A	A034/2	9-Oct-01	Name: Umberto Raggio	Umberto Raggio
3	A	A034/3	9-Oct-01	Name: Umberto Raggio	Umberto Raggio

*This Cerficate and results are saved on file download on CERN Website and available through CERN project Ingeneer.

We certify that the quality control and the results are conforming to the requirements of CERN order/contract mentioned above.

Date: 9/10/2001

Seal/Segnature Umberto Raggio

ERNESTO MALVESTITI SPA
STAMPI
DI PRECISIONE

CERTIFICATE OF CONFORMITY FOR FINE BLANKED AUSTENITIC STEEL COLLARS FOR DIPOLES LHC

ORDER/CONTRACT N° **F-316/LHC/LHC**

Batch id: M A L 2 0 0 3 4 **Box id:** 0 1

Batch Consisting of 1 BOX with 130 pieces

Steel Sheet Pallet Number: 04-40684

Batch Type: COLLIER B type 1, LHCMB_ _A0102

Date of Batch Production: May / 2001 **Firm Destination:**

ANSALDO (IT)

TEST RESULTS

Sample n°	Test Level	Report N°*	Date	Responsible	Signature
First	A	A034/1	31-May-01	Name: Umberto Raggio	Umberto Raggio

*This Cerficate and results are saved on file download on CERN Website and available through CERN project Ingeneer.

We certify that the quality control and the results are conforming to the requirements of CERN order/contract mentioned above.

Date: 9/10/2001 **Seal/Segnature** Umberto Raggio

ERNESTO MALVESTITI SPA
STAMPI
DI PRECISIONE

CERTIFICATE OF CONFORMITY FOR FINE BLANKED AUSTENITIC STEEL COLLARS FOR DIPOLES LHC

ORDER/CONTRACT N° **F-316/LHC/LHC**

Batch id: M A L 2 0 0 3 4 **Box id:** 0 1

Batch Consisting of 1 BOX with 130 pieces

Steel Sheet Pallet Number:9X-40365

Batch Type: **COLLIER B type 2, LHCMB_ _A0103**

Date of Batch Production: **June / 2001** **Firm Destination:** **ANSALDO (IT)**

TEST RESULTS

Sample n°	Test Level	Report N°*	Date	Responsible	Signature
First	A	A034/1	5-Jun-01	Name: Umberto Raggio	Umberto Raggio

*This Cerficate and results are saved on file download on CERN Website and available through CERN project Ingeneer.

We certify that the quality control and the results are conforming to the requirements of CERN order/contract mentioned above.

Date: 9/10/2001 **Seal/Segnature** Umberto Raggio

ERNESTO MALVESTITI SPA
STAMPI
DI PRECISIONE

CERTIFICATE OF CONFORMITY FOR FINE BLANKED AUSTENITIC STEEL COLLARS FOR DIPOLES LHC

ORDER/CONTRACT N° **F-316/LHC/LHC**

Batch id: M A L 2 0 0 3 4 **Box id:** 0 1

Batch Consisting of 1 BOX with 100 pieces

Steel Sheet Pallet Number: 13-42599

Batch Type: COLLIER C type 1, LHCMB_ _A0105

Date of Batch Production: October / 2001 **Firm Destination:**

ANSALDO (IT)

TEST RESULTS

Sample n°	Test Level	Report N°*	Date	Responsible	Signature
First	A	A034/1	3-Oct-01	Name: Umberto Raggio	Umberto Raggio

*This Cerficate and results are saved on file download on CERN Website and available through CERN project Ingeneer.

We certify that the quality control and the results are conforming to the requirements of CERN order/contract mentioned above.

Date: 9/10/2001 **Seal/Segnature** Umberto Raggio

ERNESTO MALVESTITI SPA
STAMPI
DI PRECISIONE

CERTIFICATE OF CONFORMITY FOR FINE BLANKED AUSTENITIC STEEL COLLARS FOR DIPOLES LHC

ORDER/CONTRACT N° **F-316/LHC/LHC**

Batch id: M A L 2 0 0 3 4 **Box id:** 0 1

Batch Consisting of 1 BOX with 100 pieces

Steel Sheet Pallet Number:07-43417

Batch Type: **COLLIER C type 2, LHCMB_ _A0106**

Date of Batch Production: **May / 2001** **Firm Destination** **ANSALDO (IT)**

TEST RESULTS

Sample n°	Test Level	Report N°*	Date	Responsible	Signature
First	A	A034/1	31-May-01	Name: Umberto Raggio	Umberto Raggio

*This Cerficate and results are saved on file download on CERN Website and available through CERN project Ingeneer.

We certify that the quality control and the results are conforming to the requirements of CERN order/contract mentioned above.

Date: 9/10/2001 **Seal/Segnature** Umberto Raggio

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXX-FR-0000 rev. **1.0**

EDMS Document No.
———

Certificate of Conformity
for CERN Delivered Components

Part name :	LAYER JUMP FILLING PIECES
Part ID :	LHCMB__A090 / A092
Delivery to :	ANSALDO
Serial No / Batch No :	Tosti 4 – Pièces longues : n° 25 à 48 Pièces courtes : n° 25 à 48
Manufacturer :	TOSTI
Contract / Order No :	F302/LHC/LHC
Comment on delivery :	For magnet 10 to 15

Responsible person at CERN :	Diego Perini	***Tel.***	+00 41 22 767 23 47
		E-mail.	Diego.Perini @cern.ch

Related tech. Specification :	LHC-MMS/98-198 Rev. 1.1
Related drawings :	LHCMB_A0090 – REV. A LHCMB_A0092 – REV. A
Acceptance test references :	See attachment paper
Acceptance test results :	Conform to Technical Specification

CERN certifies that the delivered material is conform to the technical specification mentioned above.

Date :	***Name :***	***Signature :***
29 – 03- 2001	Diego Perini	

R. 13/04/01

Certificate of Conformity

Shipper: Tosti SAS
Contract: CA 1172056
Commodity: long layer jump spacer
Drawing: LHCMBA0090
Certificate N: CC153-0090-004

Customer: CERN

Date of issue: 12.03.2001

Lot number: Tosti 4

Raw material certificates: 704084.003 of 11.09.00

Dimensions: conform

Surface finish and cleaning: conform

For the measured values see inspection certificate relative to pieces from 1 to 72 of 09/03/2001

We hereby certify that the material described herein has been made in accordance with the rules of the contract and according to the above-mentioned drawing.

Signature

Tosti — SINCERT — DNV

Casteldelpiano lì 09/03/01

Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

REPORT DI COLLAUDO
Cliente: CERN **Ordine: CA1172056** **del 20/05/00** **Disegno n.: LHCMB__A0090** **N° Pezzi collaudato: 72**

N.B. le quote sono espresse in millimetri
Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

JEUMONT →

Pezzo 21	0.040	0.040	0.034
Pezzo 22	0.032	0.022	0.028
Pezzo 23	0.032	0.030	0.004
Pezzo 24	0.032	0.040	0.002
Pezzo 25	0.030	0.020	0.020
Pezzo 26	0.028	0.034	0.030
Pezzo 27	0.024	0.026	0.026
Pezzo 28	0.030	0.036	0.036
Pezzo 29	0.020	0.030	0.036
Pezzo 30	0.002	0.004	0.004
Pezzo 31	0.040	0.030	0.040
Pezzo 32	0.010	0.010	0.020
Pezzo 33	0.028	0.040	0.030
Pezzo 34	0.036	0.036	0.026
Pezzo 35	0.036	0.032	0.028
Pezzo 36	0.036	0.030	0.024
Pezzo 37	0.030	0.028	0.030
Pezzo 38	0.040	0.032	0.034
Pezzo 39	0.040	0.030	0.028
Pezzo 40	0.040	0.036	0.040

ANSALDO

Tosti
SINCERT

Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

Casteldelpiano lì 09/03/01

REPORT DI COLLAUDO
Cliente: CERN **Ordine: CA1172056** **del 20/05/00** **Disegno n.: LHCMB__A0090** **N° Pezzi collaudato: 72**

N.B. le quote sono espresse in millimetri
Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

Pezzo 41	0.040	0.034	0.038
Pezzo 42	0.024	0.026	0.010
Pezzo 43	0.024	0.006	0.004
Pezzo 44	0.016	0.002	0.012
Pezzo 45	0.020	0.030	0.010
Pezzo 46	0.036	0.024	0.014
Pezzo 47	0.030	0.032	0.012
Pezzo 48	0.034	0.036	0.008
Pezzo 49	0.036	0.022	0.028
Pezzo 50	0.030	0.028	0.008
Pezzo 51	0.036	0.016	0.020
Pezzo 52	0.024	0.028	0.018
Pezzo 53	0.022	0.032	0.038
Pezzo 54	0.034	0.036	0.022
Pezzo 55	0.036	0.034	0.004
Pezzo 56	0.032	0.014	0.010
Pezzo 57	0.030	0.034	0.034
Pezzo 58	0.034	0.032	0.040
Pezzo 59	0.040	0.030	0.030
Pezzo 60	0.032	0.036	0.036

AUSILIO

NOELL

Certificate of Conformity

Shipper: Tosti SAS
Contract: CA 1172056
Commodity: short layer jump spacer
Drawing: LHCMBA0092
Certificate N: CC153-0092-004

Customer: CERN

Date of issue: 12.03.2001

Lot number: Tosti 4

Raw material certificates: 704084.003 of 11.09.00

Dimensions: conform

Surface finish and cleaning: conform

For the measured values see inspection certificate relative to pieces from 1 to 72 of 09/03/2001

We hereby certify that the material described herein has been made in accordance with the rules of the contract and according to the above-mentioned drawing.

Signature

Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

Casteldelpiano li 09/03/01

REPORT DI COLLAUDO
Cliente: CERN **Ordine: CA 1172168** **del 28/04/00** **Disegno n.: LHCMB__A0092** **N° Pezzi collaudato: 72**

N.B. le quote sono espresse in millimetri
Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

4 TEMPI

Pezzo 21	0.004	0.004	0.002
Pezzo 22	0.006	0.002	0.014
Pezzo 23	0.002	0.010	0.016
Pezzo 24	0.006	0.002	0.006
Pezzo 25	0.010	0.012	0.006
Pezzo 26	0.030	0.038	0.038
Pezzo 27	0.026	0.020	0.018
Pezzo 28	0.030	0.030	0.026
Pezzo 29	0.036	0.034	0.028
Pezzo 30	0.030	0.034	0.032
Pezzo 31	0.030	0.028	0.022
Pezzo 32	0.016	0.024	0.028
Pezzo 33	0.024	0.024	0.020
Pezzo 34	0.032	0.030	0.026
Pezzo 35	0.030	0.034	0.028
Pezzo 36	0.020	0.032	0.030
Pezzo 37	0.034	0.032	0.030
Pezzo 38	0.016	0.018	0.026
Pezzo 39	0.024	0.028	0.016
Pezzo 40	0.020	0.022	0.026

ANNALDO

Tosti
SINCERT
Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

Casteldelpiano lì 09/03/01

REPORT DI COLLAUDO
Cliente: CERN Ordine: CA 1172168 del 28/04/00 Disegno n.: LHCMB__A0092 N° Pezzi collaudato: 72

N.B. le quote sono espresse in millimetri
Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

ANSALDO

MODELL

Pezzo 41	0.030	0.028	0.028
Pezzo 42	0.034	0.028	0.020
Pezzo 43	0.040	0.030	0.030
Pezzo 44	0.030	0.032	0.034
Pezzo 45	0.030	0.032	0.028
Pezzo 46	0.024	0.026	0.020
Pezzo 47	0.038	0.036	0.038
Pezzo 48	0.032	0.032	0.030
Pezzo 49	0.026	0.024	0.030
Pezzo 50	0.030	0.032	0.024
Pezzo 51	0.030	0.030	0.024
Pezzo 52	0.032	0.032	0.024
Pezzo 53	0.016	0.018	0.016
Pezzo 54	0.032	0.030	0.024
Pezzo 55	0.034	0.032	0.028
Pezzo 56	0.026	0.024	0.020
Pezzo 57	0.018	0.022	0.010
Pezzo 58	0.012	0.016	0.018
Pezzo 59	0.026	0.026	0.022
Pezzo 60	0.020	0.016	0.014

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXX-FR-0000 rev. **1.0**

EDMS Document No.

Certificate of Conformity
for CERN Delivered Components

Part name:	LAYER JUMP BOXES
Part ID:	LHCMB__A089
Serial No. / Batch No.:	Tosti 2 : Pièces A63, B63, C63 à A86, B86, C86 + A87 en remplacement de la pièce C79
Manufacturer:	TOSTI
Contract / Order No.:	CA 1169157 pour contrat F302/LHC/LHC
Comment on delivery:	Layer Jump Boxes for coil number 4 to 21 to Ansaldo
Responsible person at CERN:	Diego Perini — ***Tel.*** +00 41 22 767 23 47 — ***E-mail.*** Diego.Perini @cern.ch
Related tech. specification:	LHC-MMS/98-198 Rev. 1.1
Related drawings:	LHCMB_A0089 – REV. B
Acceptance test references:	See attachment paper
Acceptance test results:	Conform to Technical Specification

CERN certifies that the delivered material is conform to the technical specification mentioned above.

Date:	***Name:***	***Signature***
15-11-2000	Diego Perini	

Q. 12/00

ANSALDO

Certificate of Conformity

Shipper: Tosti SAS
Contract: CA 1169157
Commodity: Layer jump box
Drawing: LHCMBA0089
Certificate N: CC153-0089-003

Customer: CERN

Date of issue: 29.09.2000

Lot number: Tosti 2

Raw material certificates: material supplied by CERN reference pro forma invoice EP 705848

Dimensions: conform

Surface finish and cleaning: conform

For the measured values see inspection certificate relative to pieces from A15 to C86 of 27/09/00

We hereby certify that the material described herein has been made in accordance with the rules of the contract and according to the above-mentioned drawing.

Signature

Tosti
SINCERT
Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

Casteldelpiano lì 27/09/00

REPORT DI COLLAUDO
Cliente: CERN **Ordine: CA 1169157** **del 09/02/2000** **Disegno n.: LHCMBA0089** **N° Pezzi collaudato: 216**

N.B. le quote sono espresse in millimetri
Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

	1	2	3	4	5	6	Collaudatore	Data
A63	1.055	1.052	1.044	4.047	4.027	4.040	Andrea Valvano	08/05/00
B63	1.059	1.040	1.042	4.044	4.032	4.045	Andrea Valvano	08/05/00
C63	1.057	1.046	1.038	4.063	4.033	4.035	Andrea Valvano	08/05/00
A64	1.061	1.032	1.047	4.047	4.031	4.043	Andrea Valvano	08/05/00
B64	1.047	1.040	1.031	4.039	4.026	4.041	Andrea Valvano	08/05/00
C64	1.050	1.038	1.038	4.036	4.032	4.030	Andrea Valvano	08/05/00
A65	1.058	1.040	1.042	4.048	4.027	4.038	Andrea Valvano	08/05/00
B65	1.049	1.030	1.043	4.042	4.033	4.033	Andrea Valvano	08/05/00
C65	1.054	1.041	1.037	4.041	4.033	4.033	Andrea Valvano	08/05/00
A66	1.051	1.046	1.046	4.044	4.031	4.037	Andrea Valvano	08/05/00
B66	1.048	1.050	1.041	4.048	4.030	4.040	Andrea Valvano	08/05/00
C66	1.051	1.036	1.035	4.036	4.024	4.035	Andrea Valvano	08/05/00
A67	1.057	1.048	1.040	4.045	4.030	4.038	Andrea Valvano	08/05/00
B67	1.061	1.041	1.039	4.040	4.037	4.033	Andrea Valvano	08/05/00
C67	1.053	1.030	1.038	4.045	4.030	4.026	Andrea Valvano	08/05/00
A68	1.067	1.051	1.050	4.058	4.038	4.056	Andrea Valvano	08/05/00
B68	1.063	1.046	1.051	4.052	4.039	4.043	Andrea Valvano	08/05/00
C68	1.043	1.048	1.075	4.050	4.034	4.048	Andrea Valvano	08/05/00
A69	1.063	1.047	1.051	4.050	4.039	4.051	Alessandro Laghi	08/05/00
B69	1.064	1.046	1.048	4.040	4.038	4.037	Alessandro Laghi	08/05/00
C69	1.061	1.049	1.056	4.044	4.029	4.035	Alessandro Laghi	08/05/00
A70	1.064	1.048	1.050	4.044	4.033	4.051	Alessandro Laghi	08/05/00
B70	1.059	1.047	1.044	4.042	4.036	4.049	Alessandro Laghi	08/05/00
C70	1.062	1.045	1.042	4.037	4.028	4.050	Alessandro Laghi	08/05/00

Tosti
SINCERT
Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

Casteldelpiano lì 27/09/00

REPORT DI COLLAUDO
Cliente: CERN **Ordine: CA 1169157** **del 09/02/2000** **Disegno n.: LHCMBA0089** **N° Pezzi collaudato: 216**

N.B. le quote sono espresse in millimetri
Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

	1	2	3	4	5	6	Collaudatore	Data
A71	1.066	1.053	1.046	4.052	4.043	4.048	Alessandro Laghi	08/05/00
B71	1.062	1.049	1.052	4.049	4.033	4.046	Alessandro Laghi	08/05/00
C71	1.058	1.046	1.048	4.049	4.041	4.043	Alessandro Laghi	08/05/00
A72	1.065	1.049	1.043	4.048	4.032	4.039	Alessandro Laghi	08/05/00
B72	1.056	1.046	1.046	4.044	4.032	4.040	Alessandro Laghi	08/05/00
C72	1.061	1.046	1.043	4.049	4.032	4.043	Alessandro Laghi	08/05/00
A73	1.062	1.047	1.043	4.053	4.033	4.039	Alessandro Laghi	08/05/00
B73	1.055	1.049	1.046	4.048	4.032	4.041	Alessandro Laghi	08/05/00
C73	1.056	1.049	1.041	4.040	4.033	4.038	Alessandro Laghi	08/05/00
A74	1.063	1.048	1.043	4.050	4.033	4.041	Alessandro Laghi	08/05/00
B74	1.064	1.047	1.041	4.040	4.035	4.037	Alessandro Laghi	08/05/00
C74	1.063	1.044	1.040	4.046	4.027	4.040	Alessandro Laghi	08/05/00
A75	1.064	1.048	1.039	4.049	4.027	4.044	Alessandro Laghi	08/05/00
B75	1.057	1.052	1.042	4.051	4.032	4.037	Alessandro Laghi	08/05/00
C75	1.061	1.046	1.036	4.043	4.028	4.036	Alessandro Laghi	08/05/00
A76	1.062	1.045	1.032	4.050	4.024	4.042	Alessandro Laghi	08/05/00
B76	1.058	1.042	1.035	4.045	4.034	4.041	Alessandro Laghi	08/05/00
C76	1.050	1.046	1.037	4.041	4.030	4.032	Alessandro Laghi	08/05/00
A77	1.062	1.040	1.035	4.052	4.024	4.040	Alessandro Laghi	08/05/00
B77	1.050	1.041	1.036	4.047	4.031	4.038	Alessandro Laghi	08/05/00
C77	1.058	1.038	1.039	4.046	4.029	4.030	Alessandro Laghi	08/05/00
A78	1.065	1.041	1.037	4.048	4.028	4.023	Alessandro Laghi	08/05/00
B78	1.061	1.040	1.039	4.036	4.025	4.036	Alessandro Laghi	08/05/00
C78	1.059	1.038	1.037	4.050	4.020	4.032	Alessandro Laghi	08/05/00

C79 out of tolerance REJECT IT

Tosti SINCERT

Tel. 0564-955358 (5 linee r.a.)
Fax " 956681

Casteldelpiano lì 27/09/00

REPORT DI COLLAUDO
Cliente: CERN **Ordine: CA 1169157** **del 09/02/2000** **Disegno n.: LHCMBA0089** **N° Pezzi collaudato: 216**
N.B. le quote sono espresse in millimetri
Tutte le altre quote misurate sono risultate conformi al disegno. Le tolleranze dimensionali e geometriche non indicate a disegno sono conformi a quanto previsto dalla norma ISO 2768/1 grado m per dimensioni lineari.

	1	2	3	4	5	6	Collaudatore	Data
A79	1.065	1.033	1.032	4.046	4.016	4.031	Alessandro Laghi	08/05/00
B79	1.056	1.032	1.037	4.038	4.015	4.036	Alessandro Laghi	08/05/00
C79 A87	1.071	1.092	1.080	4.035	4.043	4.061	Alessandro Laghi	08/05/00
A80	1.058	1.032	1.035	4.048	4.020	4.035	Alessandro Laghi	08/05/00
B80	1.055	1.034	1.037	4.041	4.020	4.030	Alessandro Laghi	08/05/00
C80	1.050	1.029	1.031	4.027	4.025	4.032	Alessandro Laghi	08/05/00
A81	1.058	1.032	1.030	4.044	4.018	4.031	Alessandro Laghi	08/05/00
B81	1.057	1.037	1.036	4.034	4.024	4.025	Alessandro Laghi	08/05/00
C81	1.058	1.026	1.049	4.040	4.020	4.030	Alessandro Laghi	08/05/00
A82	1.058	1.024	1.036	4.039	4.020	4.032	Alessandro Laghi	08/05/00
B82	1.050	1.036	1.033	4.033	4.015	4.025	Alessandro Laghi	08/05/00
C82	1.059	1.032	1.033	4.035	4.022	4.032	Alessandro Laghi	08/05/00
A83	1.058	1.027	1.037	4.037	4.023	4.026	Alessandro Laghi	08/05/00
B83	1.055	1.031	1.026	4.033	4.022	4.016	Alessandro Laghi	08/05/00
C83	1.047	1.032	1.036	4.029	4.025	4.015	Alessandro Laghi	08/05/00
A84	1.056	1.028	1.032	4.038	4.015	4.030	Alessandro Laghi	08/05/00
B84	1.045	1.030	1.041	4.027	4.024	4.025	Alessandro Laghi	08/05/00
C84	1.053	1.031	1.032	4.033	4.020	4.024	Alessandro Laghi	08/05/00
A85	1.052	1.034	1.031	4.036	4.020	4.032	Alessandro Laghi	08/05/00
B85	1.055	1.030	1.035	4.038	4.019	4.026	Alessandro Laghi	08/05/00
C85	1.048	1.032	1.034	4.040	4.020	4.025	Alessandro Laghi	08/05/00
A86	1.050	1.034	1.035	4.033	4.023	4.022	Alessandro Laghi	08/05/00
B86	1.051	1.032	1.030	4.030	4.018	4.021	Alessandro Laghi	08/05/00
C86	1.047	1.038	1.027	4.040	4.016	4.025	Alessandro Laghi	08/05/00

Annabella

N.B. I punti in cui è stata effettuata la misura sono riportati, evidenziati, nel disegno allegato.

A87

I COLLAUDATORI

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXXXX-QA-123456

EDMS Document No.
666666

Certificate of Conformity

for CERN supplied components

1. ***Part description***	2. ***CERN Part ID*** *(19 chars)*			5. ***Other identification***
	3. ***Part No.*** *(10 chars)*	-	4. ***Serial No.*** *(8 chars)*	
Cold Bore Tube	HCVCC_001	-	DICB0045	DICB0045 M010
Cold Bore Tube	HCVCC_001	-	DICB0048	DICB0048 M010
Cold Bore Tube	HCVCC_001	-	DICB0054	DICB0054
Cold Bore Tube	HCVCC_001	-	DICB0066	DICB0066
Cold Bore Tube	HCVCC_001	-	DICB0067	DICB0067
Cold Bore Tube	HCVCC_001	-	DICB0069	DICB0069 M012
Cold Bore Tube	HCVCC_001	-	DICB0071	DICB0071 M012
Cold Bore Tube	HCVCC_001	-	DICB0075	DICB0075
Cold Bore Tube	HCVCC_001	-	DICB0078	DICB0078
Cold Bore Tube	HCVCC_001	-	DICB0080	DICB0080

6. ***Recipient contractor:*** ANSALDO ENERGIA Spa

7. ***Contract / Order No :*** F-302/LHC/LHC for magnet 10 to 14

8. ***Responsible person at CERN:*** Frédéric Savary
Tel. 00 41 22 767 82 96
E-mail. Frederic.Savary@cern.ch

9. ***Reference specification:*** LHC-MMS/99-207

10. ***Reference drawings:***

11. ***Part manufactured by:*** D.M.V. Stainless Italy

12. ***Acceptance test refs:*** LHC-MMS/99-207 and LHC-MMS/98-198 Rev1.1 Annexe G5, Annexe C12

13. ***Acceptance test results:*** Conform to Technical Specification

14. ***Comments:***

CERN certifies that the supplied material is conform to the reference specification.

Date : 14.08.2001	***Name :*** Frédéric Savary	***Signature :***

Cold Bore Tube
(Delivered at Ansaldo)

Part ID: HCVCC-001
Serial Number: DICB0009
DICB0012
DICB0015
DICB0018
DICB0021
DICB0032
DICB0035
DICB0040
DICB0045
DICB0048
DICB0054
DICB0066
DICB0067
DICB0069
DICB0071
DICB0075
DICB0078
DICB0080

Manufacturer: D.M.V. Stainless Italy

Steel grade	AISI 316 LN
Raw Material certificate (EN 10204 3.1.B)	N 00/03128
Heat number	34446
Cleaning	Ok, done at CERN
Room temperature pressure and helium leak test	Ok
Wall thickness: 1.5 ± 0.1 [mm]	Ok
External diameter of bare tube 53 ± 0.15 [mm]	Ok
Minimum inner diameter of bare tube > 49.65 [mm]	Ok
Length	Ok
Insulated length 15158 ± 10 [mm]	Ok
Maximum external diameter after insulation < 54.30 [mm]	Ok
Insulation test, R > 1GΩ at 5000 V	Ok

Ricevuto 23/09/00 fri.

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXX-FR-0000 rev. **1.0**

EDMS Document No.
———

Copia a Tortelli

Certificate of Conformity
for CERN Delivered Components

Part name:	Polyimide film for cable insulation
Part ID:	Plain tape P1
CERN Serial No.:	20041471KP1-1
Manufacturer:	Kaneka
Contract / Order No.:	F333/LHC/LHC
Comment on delivery:	Number of pad rolls:28
Responsible person at CERN:	Hans Kummer — ***Tel.*** +00 41 22 767 4878 — ***E-mail.*** Hans.Kummer@cern.ch
Related tech. specification:	LHC/MMS/DT 5788 (rev. of annex C2 of LHC-MMS/98-198)
Acceptance test references:	LHC-MMS 2000-03
Acceptance test results:	Conform to Technical Specification

CERN certifies that the delivered material is conform to the technical specification mentioned above.

Date:	***Name:***	***Signature***
2000-08-14	Hans Kummer	H. Kummer

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXX-FR-0000 rev. **1.0**

EDMS Document No.

Certificate of Conformity
for CERN Delivered Components

Part name:	Polyimide film for cable insulation
Part ID:	Plain tape P1
CERN Serial No.:	20041471KP1-2
Manufacturer:	Kaneka
Contract / Order No.:	F333/LHC/LHC
Comment on delivery:	Number of pad rolls:28
Responsible person at CERN:	Hans Kummer
Tel.	+00 41 22 767 4878
E-mail.	Hans.Kummer@cern.ch
Related tech. specification:	LHC/MMS/DT 5788 (rev. of annex C2 of LHC-MMS/98-198)
Acceptance test references:	LHC-MMS 2000-03
Acceptance test results:	Conform to Technical Specification

CERN certifies that the delivered material is conform to the technical specification mentioned above.

Date:	***Name:***	***Signature***
2000-08-14	Hans Kummer	

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXX-FR-0000 rev. **1.0**

EDMS Document No.

Certificate of Conformity
for CERN Delivered Components

Part name:	Polyimide film for cable insulation
Part ID:	Plain tape P1
CERN Serial No.:	20041471KP1-3
Manufacturer:	Kaneka
Contract / Order No.:	F333/LHC/LHC
Comment on delivery:	Number of pad rolls:28

Responsible person at CERN:	Hans Kummer	***Tel.***	+00 41 22 767 4878
		E-mail.	Hans.Kummer@cern.ch

Related tech. specification:	LHC/MMS/DT 5788 (rev. of annex C2 of LHC-MMS/98-198)
Acceptance test references:	LHC-MMS 2000-03
Acceptance test results:	Conform to Technical Specification

CERN certifies that the delivered material is conform to the technical specification mentioned above.

Date:	***Name:***	***Signature***
2000-08-14	Hans Kummer	

CERN
CH-1211 Geneva 23
Switzerland

the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXX-FR-0000 rev. **1.0**

EDMS Document No.
———

Certificate of Conformity
for CERN Delivered Components

Part name:	Polyimide film for cable insulation
Part ID:	Plain tape P1
CERN Serial No.:	20041471KP1-4
Manufacturer:	Kaneka
Contract / Order No.:	F333/LHC/LHC
Comment on delivery:	Number of pad rolls:28
Responsible person at CERN:	Hans Kummer
Tel.	+00 41 22 767 4878
E-mail.	Hans.Kummer@cern.ch
Related tech. specification:	LHC/MMS/DT 5788 (rev. of annex C2 of LHC-MMS/98-198)
Acceptance test references:	LHC-MMS 2000-03
Acceptance test results:	Conform to Technical Specification

CERN certifies that the delivered material is conform to the technical specification mentioned above.

Date:	***Name:***	***Signature***
2000-08-14	Hans Kummer	

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the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXX-FR-0000 rev. **1.0**

EDMS Document No.

Certificate of Conformity
for CERN Delivered Components

Part name:	Polyimide film for cable insulation
Part ID:	Plain tape P1
CERN Serial No.:	20041474KP1-1
Manufacturer:	Kaneka
Contract / Order No.:	F333/LHC/LHC
Comment on delivery:	Number of pad rolls:28

Responsible person at CERN:	Hans Kummer	***Tel.***	+00 41 22 767 4878
		E-mail.	Hans.Kummer@cern.ch

Related tech. specification:	LHC/MMS/DT 5788 (rev. of annex C2 of LHC-MMS/98-198)
Acceptance test references:	LHC-MMS 2000-03
Acceptance test results:	Conform to Technical Specification

CERN certifies that the delivered material is conform to the technical specification mentioned above.

Date:	***Name:***	***Signature***
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the **Large Hadron Collider** project

LHC Project Document No.
LHC-XXX-FR-0000 rev. **1.0**

EDMS Document No.
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Certificate of Conformity
for CERN Delivered Components

Part name:	Polyimide film for cable insulation
Part ID:	Plain tape P1
CERN Serial No.:	20041474KP1-2
Manufacturer:	Kaneka
Contract / Order No.:	F333/LHC/LHC
Comment on delivery:	Number of pad rolls:28
Responsible person at CERN:	Hans Kummer
Tel.	+00 41 22 767 4878
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Related tech. specification:	LHC/MMS/DT 5788 (rev. of annex C2 of LHC-MMS/98-198)
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2000-08-10	Hans Kummer	