

Abnahmeprüfzeugnis

Inspection Certificate DIN 50 049-3.1.C
Certificat de Réception EN 10204-3.1.C
Certificato Collaudo Materiali

Besteller - Customer - Acheteur - Committente:
Jakob Hulsen GMBH & CO KG
Maysweg 14
St Toenis
47918 Toenisvorst, Germany

Prüf-Nr. - Inspection No.: 9616-15-SW
Certificat No. - No di collaudo:

Teil - Part - Partie - Parte:
Blatt-Nr - Sheet No. - Page No. - Pag No.: 1 of 1

Bestell-Nr. - Order No.: -240077
No de la commande - No dell'ordine:

Vom - dated - - 03.03.04
date - in data :

Hersteller - Manufacturer - Fabricant - Produttore:
B A Tubes
Studley Road, Redditch
Worcestershire, B98 7HN, England

Werks-Nr - Works No. - No usina - Commessa No.:
87371/2

Prüfgegenstand - Article - Produit - Prodotto : Seamless Aluminium Tube

Prüfgrundlagen/Anforderungen - Technical requirements/Demand - Spécifications techniques/Exigences - Norma di controllo/Requisiti :
AD 2000 - Merkblatt W6/1 (Einzelgutachten)

Werkstoff - Material - Matière - Materiale entsprechend - according to suivant- secondo Ausgabe Edition - Edizione:
EN AW-5083 -O EN573-3/754-2 1994/1997
SB 241 5083 ASME 1996

Lieferzustand - State of delivery - Etat de livraison - Stato di fornitura: Soft Annealed

Erschmelzungsart - Melting process - Procédé d'élaboration - Procedimento di elaborazione : Electric.

Kennzeichnung - Marking - Marquage - Punzonature :
Material: - ASME SB241 5083 - O
EN AW 5083 -O , Cast No,
Tube Nrs : Tube Nr 267252,267254,267256,267258
267260,267262,267264

Herstellerzeichen - Brand of the manufacturer -BAT
Marque du fabricant - Marchio del produttore :

Stempel des Sachverständigen - Inspectors stamp
Poinçon de l'expert - Punzone dell'ispettore.

T4Ü

Pos.- Nr./Item No. Poste-No No.pos	Stückzahl Number of Quote Numero pezzi	Gegenstand - Article Désignation du produit - Tipo di prodotto	Schmelze-Nr. Heat No. No Coulée No Colata	Probe-Nr. Test No. No d'éprouvette No di prova
02	02	274,0 mm O/D. x 7,0mm WT x 5,400 mtrs	1K067	267252/253 (267252)
02	02	274,0 mm O/D. x 7,0mm WT x 5,400 mtrs	1K067	267254/255 (267254)
02	02	274,0 mm O/D. x 7,0mm WT x 5,400 mtrs	1K067	267256/257 (267256)
02	02	274,0 mm O/D. x 7,0mm WT x 5,400 mtrs	1K067	267258/259 (267258)
02	02	274,0 mm O/D. x 7,0mm WT x 5,400 mtrs	1K067	267260/261 (267260)
02	01	274,0 mm O/D. x 7,0mm WT x 5,400 mtrs	1J341	267262/263 (267262)
02	02	274,0 mm O/D. x 7,0mm WT x 5,400 mtrs	1J341	267264/265 (267264)

Zusätzliche Angaben - Additional remarks - Autres remarques - Osservazione:

Die gestellten Anforderungen sind lt. Anlagen erfüllt.

The requirements are fulfilled as per annex
Les conditions imposées sont satisfaites suivant annexes -
I risultati sono conformi ai requisiti richiesti come da allegati.

(Ort - Location - Lieu - Località)

LONDON

(Datum - Date - Data)

28/05/2004

Prüfstelle für Druckgeräte
der RWTUV Systems GmbH
H. Eggenstein

Anlagen - Annexes - Annexes Allegati : 2

1) Ergebnis der Prüfungen - Test results - Résultats des essais - Risultati della prova
Weitere Anlagen in 1 - Other annexes in 1 - Autres annexes en 1 - Altri allegati in 1

9284

Ergebnis der Prüfungen
Test Results
Risultati delle Prove

Anlage - Annex - Allegato

RWTÜV

Prüf-Nr.: 9616-15 SW

Teil

Inspection No.

Part

Certificat N°

Partie

N° di collaudo

Parte

Blatt-Nr. 1 of 1

Sheet-No.

Page N°

Pag N°

Mechanische Prüfungen - Mechanical tests - Essais mécaniques - Prove meccaniche

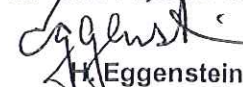
Prüfart - Test type - Tipo di prova: Probenart - Specimen size Type de l'éprouvette Tipo di provetta: Probenzustand - Specimen condition - Etat d'éprouvette - Stato della provetta:			ZUGVERSUCH / TENSILE TEST								HARDNESS HB						
Probe-Nr. Test No. N° d'éprouvette N° di prova.	Probenabmessung Dim. of specimen Dim. de l'éprouvette Dim. della provetta		Probenentnahme Specimen Prélevement Prelevamento			Prüftemperatur Test temperature Température d'essai Temperatura di prova °C	Streck-/Dehngrenze Yield strength Limite d'élasticité Lim. di snervamento N/mm²	Zugfestigkeit Tensile strength Résistance à la traction Carico di rottura N/mm²	Bruchdehnung Elongation Allongement A Lo= 5.65 √so	Bruchreduktion Reduction of area Striction/Strizione Z	1 = [J] Schlagarbeit - Energy of impact Energie de rupture - Energia di rottura 2 = [J/cm²] Kerbschlagzähigkeit-Impact Strength Résilience - Resilienza 3 = [%] Krist.Bruchanteil - Cryst. proportion Partie cristalline - Proporzione cristallina 4 = [mm10 ⁻²] Breitung - Expansion 5 = [%] Elargissement - Espansione 6 = Härte (Einheiten) - Hardness - Dureté - Durezza						Bemerkung Remarks Remarques Osservazioni
Schmelze-Nr. Heat No. N° Coulée Colata N°	Dicke Thickness Epaisseur Spessore	Breite, Ø Width, Ø Largeur Ø Largh. Ø	Ort - Location Lieu - Zona	Richtung Direction - Senso	Lage - Position Posizione						Werte -Values- 1 2 3 Σ/n						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
gts / Anforderungen Analysis			1	2	3	20	min 110	min 270/ 350	min 14		6	≈ 60 HB	2.5/62.5				
Max unless Stated																	
S, 0.40 Fe, 0.40 Cu, 0.10 Mn, 0.40 to 1.00 Mg, 4.0 to 4.9 Cr, 0.05 to 0.25 Zn, 0.25 Ti, 0.15.																	
267252 (1K067)	7,24	12,21	1	2L	3	20	149	319	23		6	78,4	HB				
267253	6,94	12,12	1	2T	3	20	178	318	21								
267254 (1K067)	7,25	12,20	1	2L	3	20	147	314	26		6	78,2	HB				
267255	7,10	12,11	1	2T	3	20	173	314	22								
267256 (1K067)	7,14	12,09	1	2L	3	20	146	316	24		6	76,4	HB				
267257	7,07	12,08	1	2T	3	20	173	316	22								
267258 (1K067)	7,29	11,88	1	2L	3	20	154	318	24		6	79,6	HB				
267259	6,97	12,31	1	2T	3	20	177	316	21								
267260 (1K067)	7,12	12,25	1	2L	3	20	156	315	22		6	77,3	HB				
267261	7,09	12,55	1	2T	3	20	189	319	22								
267262 (1J341)	6,98	12,23	1	2L	3	20	150	310	22		6	77,3	HB				
267263	7,13	12,20	1	2T	3	20	180	310	20								
267264 (1J341)	7,13	12,13	1	2L	3	20	146	311	23		6	77,6	HB				
267265	7,09	12,09	1	2T	3	20	168	305	21								
Notes			1)	From tube end													
			2)	L = Longitudinal / T = Transverse													
			3)	Full Thickness 3* Mid Wall													
4) Besichtigung / Maßkontrolle / Visual and Dimensional check - ohne Beanstandung / Satisfactory																	
5) Chemische / Chemical Analysis: siehe Anlage 2 / See annex 2																	
6) Wärmebehandlung / Heat Treatment: Annealed at 400°C																	
7) Technological tests(ring tensile & macro) - ohne Beanstandung / Satisfactory																	
8) UST tested to SEP1915/1918 - siehe Anlage 2 / See annex 2:																	
9) Manufacturers 3.1.B certificate shows in house tests only.																	

(Ort - Location - Lieu - Località)

LONDON

(Datum Date - Data)

28-05-2004

Prüfstelle für Druckgeräte
der RWTÜV Systems GmbH

H. Eggenstein

TÜV-UK DOC. No.: FORM: 0002 REV. No.: 0 DATE: 17-07-98

BA TUBES LIMITED

Studley Road, Redditch, Worcester B98 7HN, England
Telephone (01527) 484500, Facsimile (01527) 484501



Inspection Certificate

Customer

JAKOB HULSEN GMBH & CO KG
MAYSWEG 14
ST. TOENIS
47918 TOENISVORST
GERMANY

Customer Copy No. 96288/1

Other Tests Passed

RING TENSILE TEST
EDDY CURRENT TEST
MACRO ETCH TEST

Your Order No : 240077
Our Order No : 87371/2
Packing Note No : 126769
Date : 21 May 2004
Packages : 1 CASE

Size / Description

SEAMLESS DRAWN TUBE 274.000MM O/D 7.000MM W/T 5083 Alloy
Length - 5400.00 mm

Specification

5083 0
ADW6/1 ASMESEB241M EN573-3

Tensile Test

Test No.	0.2% Proof Stress N/mm2	Tensile Strength N/mm2	% Elongation 5.65v SO
267254 L	147	314	26
267260 L	157	315	22

Chemical Analysis %

No of Pieces	Nett Weight	Heat or Cast No.	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Na	Ti
2	173	1K067	.10	.31	.02	.59	4.58	.15		.02	<0.0001	.02
1	86	1K067	.10	.31	.02	.59	4.58	.15		.02	<0.0001	.02

Remarks

TEST CERTS TO EN10204 3.1.B & ASME SB241
TOLERANCES TO EN754/7 UNLESS SPECIFIED
CASE NO. B828

TÜV UK Ltd

Witnessed Date 28/5/04

Reviewed Date

Signature

Anlage 2 Page 1 of 3

Prüf Nr. 9616-15 (Swi.)

Registered in England No. 3981395
Registered Office: Victoria House,
150-182 The Quay, Salford, M50 3SP, England.
VAT Registration No. GB 668 2142 26

For and on behalf of BA Tubes Limited 27/05/04

(THIS CERTIFICATE CONFORMS TO THE REQUIREMENTS OF EN 10204.3.1B)



Customer Copy No. 96287/1

Customer

JAKOB HULSEN GMBH & CO KG
MAYSWEG 14
ST. TOENIS
47918 TOENISVORST
GERMANY

Your Order No : 240077
Our Order No : 87371/2
Packing Note No : 126768
Date : 21 May 2004
Packages : 1 CASE

Other Tests Passed

RING TENSILE TEST
EDDY CURRENT TEST
MACRO ETCH TEST

Size / Description

SEAMLESS DRAWN TUBE 274.000MM O/D 7.000MM W/T 5083 Alloy
Length - 5400.00 mm

Specification

5083
ADW6/1 ASMESB241M EN573-3

No of Pieces	Nett Weight	Tensile Test					Brinell Hardness	Chemical Analysis %									
		Test No.	0.2% Proof Stress N/mm2	Tensile Strength N/mm2	% Elongation 5.65v SO	Heat or Cast No.		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Na	Ti
2	173	267252 L	149	319	23	79	1K067	.10	.31	.02	.59	4.58	.15		.02	<0.0001	.02
1	87	267260 L	157	315	22	81	1K067	.10	.31	.02	.59	4.58	.15		.02	<0.0001	.02
Remarks																	

Remarks TEST CERTS TO EN10204 3.1.B & ASME SB241
TOLERANCES TO EN754/7 UNLESS SPECIFIED
CASE NO. B826

TÜV UK Ltd

Witnessed / Date 28/5/04
Reviewed / Date 28/5/04
Signature

Anlage 2 Page 2 of 5
Prüf Nr. 9616-15 (Sw)

For and on behalf of BA Tubes Limited 27/05/04



Studley Road, Redditch, Worcester B98 7HN, England
Telephone (01527) 484500. Facsimile (01527) 484501

Customer Copy No. 96286/1

Customer

JAKOB HULSEN GMBH & CO KG
MAYSWEG 14
ST. TOENIS
47918 TOENISVORST
GERMANY

Your Order No	: 240077
Our Order No	: 87371/2
Packing Note No	: 126767
Date	: 21 May 2004
Packages	: 1 CASE

Other Tests Passed

RING TENSILE TEST
 EDDY CURRENT TEST
 MACRO ETCH TEST

Size / Description	Quantity	Unit Price	Total Price
1000	1000	1000	1000
2000	2000	2000	2000
3000	3000	3000	3000
4000	4000	4000	4000
5000	5000	5000	5000
6000	6000	6000	6000
7000	7000	7000	7000
8000	8000	8000	8000
9000	9000	9000	9000
10000	10000	10000	10000
11000	11000	11000	11000
12000	12000	12000	12000
13000	13000	13000	13000
14000	14000	14000	14000
15000	15000	15000	15000
16000	16000	16000	16000
17000	17000	17000	17000
18000	18000	18000	18000
19000	19000	19000	19000
20000	20000	20000	20000
21000	21000	21000	21000
22000	22000	22000	22000
23000	23000	23000	23000
24000	24000	24000	24000
25000	25000	25000	25000
26000	26000	26000	26000
27000	27000	27000	27000
28000	28000	28000	28000
29000	29000	29000	29000
30000	30000	30000	30000
31000	31000	31000	31000
32000	32000	32000	32000
33000	33000	33000	33000
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35000	35000	35000	35000
36000	36000	36000	36000
37000	37000	37000	37000
38000	38000	38000	38000
39000	39000	39000	39000
40000	40000	40000	40000
41000	41000	41000	41000
42000	42000	42000	42000
43000	43000	43000	43000
44000	44000	44000	44000
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46000	46000	46000	46000
47000	47000	47000	47000
48000	48000	48000	48000
49000	49000	49000	49000
50000	50000	50000	50000
51000	51000	51000	51000
52000	52000	52000	52000
53000	53000	53000	53000
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67000	67000	67000	67000
68000	68000	68000	68000
69000	69000	69000	69000
70000	70000	70000	70000
71000	71000	71000	71000
72000	72000	72000	72000
73000	73000	73000	73000
74000	74000	74000	74000
75000	75000	75000	75000
76000	76000	76000	76000
77000	77000	77000	77000
78000	78000	78000	78000
79000	79000	79000	79000
80000	80000	80000	80000

SEAMLESS DRAWN TUBE 274.000MM O/D 7.000MM W/T 5083 Alloy
Length - 5400.00 mm

Specification

5083 0
ADW6/1 ASMESB241M EN573-3

No of Pieces	Nett Weight	Tensile Test					Brinell Hardness	Chemical Analysis %									
		Test No.	0.2% Proof Stress N/mm2	Tensile Strength N/mm2	% Elongation 5.65v SO	Heat or Cast No.		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Na	Ti
2	173	267258 L	154	318	24	81	.10	.31	.02	.59	4.58	.15	.02	<0.0001	.02	.02	
1	87	267262 L	150	311	22	78	.14	.34	.03	.60	4.53	.12	.02	<0.0001	.02	.12	

Remarks
TEST CERTS TO EN10204 3.1.B & ASME SB241 TOLERANCES TO EN754/7 UNLESS SPECIFIED CASE NO. B825

TÖVÜK Ltd

Witnessed Debra A. S. 6/4

Reviewed / Date

Signature

Anlage 2 Page 3 of 3

966-15 (51)

For and on behalf of BA Tubes Limited 27/05/04

Registered in England No. 3981395
Registered Office: Victoria House,
150-182 The Quays, Salford, M50 3SP, England.
VAT Registration No. GB 668 2142 26

(THIS CERTIFICATE CONFORMS TO THE REQUIREMENTS OF EN 10204.3.1B)

BA TUBES LIMITED

Studley Road, Redditch, Worcester B98 7HN, England
Telephone (01527) 484500, Facsimile (01527) 484501



Inspection Certificate

Customer

JAKOB HULSEN GMBH & CO KG
MAYSWEG 14
ST. TOENIS
47918 TOENISVORST
GERMANY

Your Order No : 240077
Our Order No : 87371/2
Packing Note No : 126766
Date : 21 May 2004
Packages : 1 CASE

Customer Copy No. 96285/1

Other Tests Passed

RING TENSILE TEST
EDDY CURRENT TEST
MACRO ETCH TEST

Size / Description

SEAMLESS DRAWN TUBE 274.00MM O/D 7.00MM W/T 5083 Alloy
Length - 5400.00 mm

Specification

5083 0
ADW6/1 ASME SB241M EN573-3

No of Pieces	Nett Weight	Tensile Test				Brinell Hardness	Chemical Analysis %											H cc/ 100gm	
		Test No.	0.2% Proof Stress N/mm2	Tensile Strength N/mm2	% Elongation 5.65v SO		Heat or Cast No.	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Na	Ti		
2	173	267264 L	147	311	23	78	1J341	.14	.34	.03	.60	4.53	.12		.02	<0.0001		.02	.12
2	173	267256 L	146	316	24	77	1K067	.10	.31	.02	.59	4.58	.15		.02	<0.0001		.02	
Remarks																			
TEST CERTS TO EN10204 2.1 P. 8 140157 2824																			

Remarks

TEST CERTS TO EN10204 3.1.B & ASME SB241
TOLERANCES TO EN754/7 UNLESS SPECIFIED
CASE NO. B827

TUV UK Ltd

Witnessed / Date 28/5/04

Reviewed / Date

Signature

Anlage 2 Page 4 of 5

Prüf Nr. 9616-15

Registered in England No. 3981395
Registered Office: Victoria House,
150-182 The Quay, Salford, M50 3SP, England.
VAT Registration No. GB 666 2142 26

(THIS CERTIFICATE CONFORMS TO THE REQUIREMENTS OF EN 10204.3.1B)

For and on behalf of BA Tubes Limited 27/05/04



Morgan-Ward

(NON-DESTRUCTIVE TESTING) LTD

DALE ROAD - NEW MILLS - HIGH PEAK - DERBYSHIRE - SK22 4NW
Tel: 01663 747081 Fax: 01663 744897 E-mail: mward@talk21.com

UKAS
Civil Aviation Authority
12157
Approved for use in the UK
UKAS
Exempt from the provisions of the
Merchant Shipping
Act 1994
NAFCL



ULTRASONIC TEST REPORT

Page 1

01 1

CLIENT

R A Tubes Ltd
Studley Road
Redditch
Worcestershire
B98 7HN

REPORT No: 49317/ULT

DATE OF TEST: Completed 11/5/04

Job No:

ORDER No: 987681

COMPONENT / AREA TESTED

Contact scanning of 14 off 274mm o/d x 7mm w/t x 5.4M long tubes

Batch Nos. prefixed: 87371-1-1 - 2 off

1-2 - 2 off

1-3 - 2 off

1-4 - 2 off

1-5 - 2 off

1-6 - 2 off

1-7 - 2 off

P/No. 5142

MATERIAL 5083	SURFACE CONDITION As Drawn	PROCEDURE / STANDARD SEP1915/1918	Issue No. / Date 1989/1977
EQUIPMENT K.K. USIP 12 UPD		ACCEPTANCE CRITERIA SEP1915/1918	Issue No. / Date 1989/1977
SERIAL No. UT 101	CALIBRATION DATE 10/6/04	TEST SENSITIVITY (COMP'N)	
COUPLANT Water	TEST / REFERENCE BLOCKS SEP1915/1918	SCANNING PATTERN 10% probe overlap	
PROBES USED	45°	45°	60° 70°
MAKE & TYPE	Phonix S/C	Phonix S/C	
FREQUENCY	4MHz	4MHz	
SIZE	10mm dia	10mm dia.	
PROBE SERIAL No.	A2433/A2439	A2433/A2434	
SENSITIVITY SETTING	26dB	26dB	
ATTENUATION / TRANSFER LOSS			

TEST DETAILS & RESULTS:

The 14 off tubes were found to be acceptable to specification

Anlage 2 Page...5.....of.....5.....

Prüf Nr.....9616-15.....

TEST LOCATION Morgan Ward (NDT) Ltd

OPERATOR J. Francomb

QUALIFICATION PCN LH

CERTIFICATE No. 113163

SIGNED
AUTHORISED SIGNATORY FOR MORGAN WARD NDT LIMITED
NAME: J. FRANCOMB
DATE: 11/5/04