

MATERIAL TRACEABILITY

SALES ORDER NO.

509.8-12

DRWG. NO.

15770A

Nozzles:

Purpose	Dia. or Size	Material	Nozzle Thk. Nom.	Trace Code
B OUT	6.625	SB-241-5083	0.432	T105C
A OUT	8.625	SB-241-5083	0.322	T108C
C OUT & E OUT	3.500	SB-241-5083	0.216	T109C
C IN & D OUT	4.500	SB-241-5083	0.237	T119C
D IN	2.375	SB-241-5083	0.154	T138C
B IN	6.625	SB-241-5083	0.432	T139C
A IN & F OUT	12.750	SB-241-5083	0.375	T151C
E IN	1.900	SB-241-5083	0.145	T156C
F IN	10.750	SB-241-5083	0.365	T175C
G IN&OUT	14.000	SB-209-5083	0.250	S472C

Headers:

Purpose	Material	Nom. Thk.	Trace Code
E IN	SB-241-5083	0.203	T007C
A IN, C OUT, D IN, & E OUT	SB-209-5083	0.375	S408C
B OUT & C IN	SB-209-5083	0.750	S409C
A OUT, F IN&OUT, & G IN&OUT	SB-209-5083	0.250	S472C
D OUT	SB-209-5083	0.500	S483C
B IN	SB-209-5083	1.000	S504C

End Pieces:

Purpose	End Type	Material	Nom. Thk.	Trace Code
E IN, F IN&OUT, & G IN	FLAT	SB-209-5083	0.375	S408C
B OUT & C IN	MITER	SB-209-5083	0.750	S409C
C OUT & D IN	FLAT	SB-209-5083	0.625	S422C
D OUT	FLAT	SB-209-5083	1.000	S460C
A OUT & G OUT	FLAT	SB-209-5083	0.500	S477C
A IN, B IN, & E OUT	FLAT	SB-209-5083	1.000	S504C
B IN	MITER	SB-209-5083	1.000	S504C

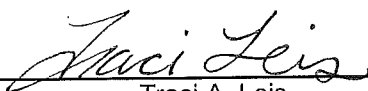
Permanent End Closures:

Purpose	End Type	Material	Nom. Thk.	Trace Code
A OUT	FLAT	SB-209-5083	0.625	S422C

THE MATERIAL CERTIFICATION USED IN THE FABRICATION OF THE CORE OF THE ABOVE ASSEMBLY CONTAINS RESTRICTED INFORMATION.

THEREFORE IT IS COMPANY CONFIDENTIAL, AND CANNOT BE DIVULGED TO THE CUSTOMER OR ANY THIRD PARTY.

ALL MATERIALS USED MEET THE SPECIFICATIONS AND THE MANUFACTURING CODE AS STATED ON THE DRAWING.



Traci A. Leis

Documentation Coordinator

Uelzener Weg 36 - 59425 Una

Abnahmeprüfbescheinigung 3.1 B - EN 10204**Inspection Certificate 3.1 B - EN 10204 / Certificat de Reception 3.1 B - EN 10204****Kunde:**
Client:

Anvil Alloys International Ltd.

Unit 17, Fishers Ind. Est
Wiggenhall ReWatford, Herts WD1 Great Britain**Zeugnisnummer:**

Cert No. / No. du certificat

Bestellnummer:

Order No. / No. de commande

Auftrag:

Our Reference/Notre Reference:

12988

8970/1

P# 248 5792

T-105-C

K11-20-04

Produkt:

Product / Produit:

Spezifikation:

Specification:

Werkstoff:

Alloy/Alliage:

Abmessung

Size / Dimension

Kennzeichnung

Marking/Marque:

Lieferung:

Delivered Material / Matériel délivré:

ASME SB 241

S083

169,280 mm x 146,340 mm x 10,970 mm x 6000,00 mm

6" NB Sched. 80

Cast No. 2158-2 - 6" NB SCH 80 - S083-0 - ASME SB 241 - AWU

Zustand:

Temper/État

0

TW METALS

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SEP 03 2004

ACCEPTED BY

R
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T
S**1. Chemische Analyse****Chemical Analysis / analyse chimique**

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.				0,40	4,0	0,05							
Cast No. max.	0,40	0,40	0,10	1,0	4,9	0,25	0,25	0,15					
2158-2/04	0,199	0,297	0,027	0,515	4,620	0,076	0,045	0,023	0,003	0,0019	0,0002	0,0013	0,0020

Hydrogen content: 0,13 ccml/100 g Al

Elements ohne Angabe < 0,01 % / Elements without indication < 0,01 %

2. Mechanische Eigenschaften**Mechanical Properties / Valeurs Mécaniques**

Anforderungen Requirements	tensile (Rm) Ksi	yield (Rp0,2) Ksi	elongation 2" %	elongation A 5 %	Hardness HB
min.	39,0	16,0	14,0		
max.	51,0				
1	46,835	27,260	18,5		72,3
2	45,820	26,970	17,5		71,8

AI
Reviewed

NOV. 20 2004

Reviewed

TÜV Süddeutschland Bau und Betrieb GmbH

Notified Body for Pressure

Equipment Directive 97/23/EC

-Testing Laboratory- APR 18 2005

NOV 20 2004

PER 01

**Ergebnis der
Prüfungen:**Test results:
Results:

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

03.06.2004 / Sinde

Certified acc. to DIN EN ISO 9001:2000, valid until 2006-03-09
Certificate No.: 001959 QM

Der Werksachverständige

P. 07/12

83087783
10/80

SENT BY: ANVIL ALLOYS INT;

+44 01923 800722 ; 10-JUN-04 9:06;

PAGE 5/5

M83087187

7-6-04



ALUMINA AG

T-108-C

Leizener Weg 36 - 59425 Unna

Abnahmeprüfbescheinigung 3.1 B - EN 10204

Inspection Certificate 3.1 B - EN 10204 / Certificat de Reception 3.1 B - EN 10204

Kunde:
Client

Anvil Alloys International Ltd.

Unit 17, Fishers Ind. Est
Wiggenhall Rd Wotton, Herts WD1 Great Britain

Produkt:

Product / Produit:

Spezifikation:

Specification:

Werkstoff:

Alloy/Alliage:

Abmessung:

Size / Dimension:

Kennzeichnung:

Marking/Marquage:

Lieferung:

Delivered Material / Matériel délivré:

ASME SB 241

5083

215,080 mm x 202,720 mm x 8,180 mm x 6000,00 mm

B" NB Schwd. 40

Cast No. 1332-2 - 6" NB SCH 40 - 5083 - 0 - ASME SB 241 - AWJ

Zeugnisnummer:

Cert No. / No. du certificat:

Bestellnummer:

Order No. / No. de commande:

Auftrag:

Our Reference/Notre Référence:

12696

7100/1

Zustand:

Temper/État

TW METALS

TEST

JUL 06 2004

ACCEPTED BY

1. Chemische Analyse

Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.				0,40	1,0	0,05							
Cast No. max.	0,40	0,48	0,10	1,0	4,9	0,25	0,25	0,15					
1332-2/03	0,243	0,267	0,029	0,558	4,735	0,977	0,070	0,027	0,003	0,001	0,0001	0,0015	0,0020
hydrogen content	0,11			com / 350 g Al									

Elemente ohne Angabe < 0,01 % / Elements without indication < 0,01 %

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) Ksi	yield (Rp0.2) Ksi	elongation 2" %	elongation 5" %	Hardness HB
min.	39,0	16,0	14,0	12,0	
max.	51,0				
1	45,820	28,275	16,0	20,0	75A
2	45,675	27,405	18,0	23,3	75B

REVIEWED

NOV 20 2004

PEP 01C

AI
Reviewed
NOV 20 2004

Reviewed

TÜV SÜDDEUTSCHLAND Bau und Betrieb GmbH

Notified body for the Pressure

Equipment Directive 97/23/EC

-Testing Laboratory- APR 18 2005

Ergebnis der
Prüfungen:

Test results:

Results:

04.12.03

/ Sinda

Certified acc. to DIN EN ISO 9001:2000, valid until 2006-03-09
Certificate No.: 001953 QM

Der Werkstoffversand

6124287669 P.07/17

T.W. METALS

JUN-04 13:13

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07/30/04 07:50

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"TW Metals."

006/006

M83087187 7-30-04



Ueltener Weg 36 - 59425 Unna

Abnahmeprüfbescheinigung 3.1 B - EN 10204

Inspection Certificate 3.1 B - EN 10204 / Certificat de Reception 3.1 B - EN 10204

P32485792

Kunde: Anvil Alloys International Ltd.
Client: Unit 17, Finnis Ind. Est
 Wiganhall Rd Warrford, Herts WD1 Great Britain

Zertifikatsnummer:
Cert No. / No. du certificat: 18003
Bestellnummer:
Order No. / No. de commande: 8986/1
Auftrag:
Our Reference/Notre Reference:

Produkt: Tubes drawn seamless

Product / Produit:

Spezifikation: ASME SB 241

Specification:

Werkstoff: 5083

Alloy/Allage:

Abmessungen: 88,900 mm x 77,920 mm x 5,490 mm x 6000,00 mm

Size / Dimension: 3" NB SCH 40

Kennzeichnung: Cast No. 2083-1 - 3" NB SCH 40 - 5083 - 0 - ASME SB 241 - AVIU

Marking/Marquage:

Lieferung:
Delivered Material / Matériau livré:

pcs.
18

lbs
917

Zustand:
Temper/Etat:

0



1. Chemische Analyse

Chemical Analysis / analyse chimique

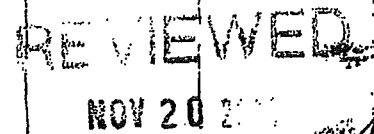
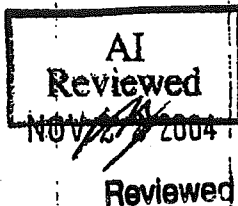
	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	N
Charge/ min.				0,40	4,0	0,05							
Cast No. max.	0,40	0,40	0,10	1,0	4,9	0,25	0,25	0,15					
2083-1/04	0,160	0,274	0,029	0,530	4,685	0,070	0,850	0,023	0,004	0,0018	0,0001	0,0014	0,0020
Hydrogen content:	0,12 ccml/100 g Al												

Elemente ohne Angabe < 0,01 % / Elements without indication < 0,01 %

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) Ksi	yield (Rp0.2) Ksi	elongation 2" %	elongation A S %	Hardness HB
min.	39,0	16,0	14,0		
max.	51,0				
1	41,180	20,445	30,0		77,8
2	40,165	21,170	30,0		78,7



TÜV SÜDdeutsche Land- und Betriebs GmbH

Notified Body under the EU Pressure

Equipment Directive 97/23/EC

APR 18 2005

Testing Laboratory

**Ergebnis der
Prüfungen:**

Es wird bestätigt, dass die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

**Test results:
Results:**

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order
 Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

27.05.2004

/ Sinc



Certified acc. to DIN EN ISO 9001:2000, valid until 2006-03-09
 Certificate No.: 081539 QM

Der Werkstoffzustand

61224287669 P.07/11

T.W. METALS

JUL-15-2004 15:10:55

83087187

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ALUMINA AG

Uelzener Weg 36 - 59425 Unna

Abnahmeprüfbescheinigung 3.1 B - EN 10204

Inspection Certificate 3.1 B - EN 10204 / Certificat de Reception 3.1 B - EN 10204

Kunde:
Client:

Anvil Alloys International Ltd.

Unit 17, Fishers Ind. Est
Wiggenhall Rickwathford, Herts WD1 Great Britain

Zeugnisnummer:

Cert No. / No. du certificat:

13058

Bestellnummer:

Order No. / No. de commande:

Auftrag:

9925/1

Our Reference/Notre Reference:

Produkt:

Product / Produit:

Spezifikation:

Specification:

Werkstoff:

Material:

Abmessung:

Size / Dimension:

Kennzeichnung:

Marking/Markage:

Lieferung:

Delivered Material / Matériel livré:

ASME SB 241

5083

114,300 mm x 102,260 mm x 6,020 mm x 6000,00 mm

4" Sched. 40

ALUnna - Cast No. 2447-2 - 4" N8 SCH 40 - 5083 - 0 - ASME SB 241

Zustand:

Temper/État:

0

AI
Reviewed

DEC 12 2004

1. Chemische Analyse

Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ Cast No.	min. max.	0,40 0,40	0,10 0,10	0,40 1,0	4,0 4,9	0,05 0,25	0,25 0,25	0,15 0,15					
2447-2/04		0,192	0,323	0,030	0,588	4,705	0,075	0,048	0,023	0,003	0,0259	0,0088	0,0017 0,0030

Hydrogen contents 0,12

cm/100 g Al

Elemente ohne Angabe < 0,01 % / Elements without indication < 0,01 %

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	Stärke (Rm) Ksi	Yield (Rp0,2) Ksi	elongation 2" %	elongation A S %	Hardness HB
min. max.	39,0 51,0	16,0	14,0		
1	40,890	21,790	24,0		73,9
2	45,530	24,070	22,0		72,2

Reviewed

TÜV SÜDDEUTSCHLAND BAU UND BETRIEB GMBH

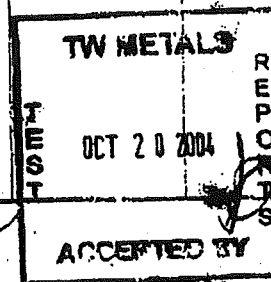
Notified body for Pressure

Equipment Directive 97/23/EC

-Testing Laboratory-

APR 18 2005

NOV 30 2004

Ergebnis der
Prüfungen:

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellanforderung entspricht.

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Résultats:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande.

13.08.2004

/ Since

Certified acc. to DIN EN ISO 9001:2000, valid until 2006-03-09
Certificate No.: 001939 QM

Der Werkstoffverständige

P.10/18

OCT-01-2004 12:34

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4/40

07/16/04

13:41

86306900147

"TW Metals."

0003/003

Uelzener Weg 36 - 59425 Unna

Abnahmeprüfbescheinigung 3.1 B - EN 10204

Inspection Certificate 3.1 B - EN 10204 / Certificat de Reception 3.1 B - EN 10204

Kunde:
Client:

Anvil Alloys International Ltd.

Unit 17, Fishers Ind. Est
Wiggenhall Rd Watford, Herts WD1 Great Britain

Produkt:

Product / Produit:

Spezifikation:

Specification:

Werkstoff:

Alloy / Alliage:

Abmessung:

Size / Dimension:

Kennzeichnung:

Marking / Marquage:

Lieferung:

Delivered Material / Matériau livré:

Tubes seamless extruded

ASME SB 241

5083

50,300 mm x 52,510 mm x 3,910 mm x 6000,00 mm

2" NB Sched. 40

Cast No. 1764-3-2" NB-Sch40/5083-0-Asme-SB241-AWU

Zeugnisnummer:

Cert No. / No. du certificat:

Bestellnummer:

Order No. / No. de commande

Auftrag:

Our Reference/Notre Référence

12832

7939/2

Zustand:

Temper/État

0

P2492366

T-138-C

Kern

1. Chemische Analyse

Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.				0,40	4,0	0,05							
Cast No. max.	0,40	0,40	0,10	1,0	4,9	0,25	0,25	0,15					
1764-3/04	0,202	0,349	0,033	0,581	4,738	0,106	0,047	0,022	0,003	0,0022	0,0016	0,0015	0,0053
Hydrogen content:	0,12	ccm/100 g Al											

Elemente ohne Angabe < 0,01 % / Elements without indication < 0,01 %

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) Ksi	yield (Rp0,2) Ksi	elongation 2" %	elongation A S %	Hardness HB
min.	39,0	16,0	14,0		
max.	51,0				
1	43,645	22,040	20,0		88,1
2	45,095	22,910	20,5		84,2

Reviewed

TÜV SÜddeutschland Bau und Betrieb GmbH

Notified body no. 1000 to Pressure

Equipment Directive 97/23/EC

-Testing Laboratory-

APR 18 2005

Ergebnis der
Prüfungen:

Test results:

Results:

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

29.03.04

I Sünde

Certified acc. to DIN EN ISO 9001:2000, valid until 2006-03-09
Certificate No.: 001959 QM

TW METALS

JUL 16 2004

ZERTIFIKAT

DES VERKEHRSSACHVERSTÄNDIGEN

VIEWED

DEC 21 2004

PED OK

Abnahmeprüfbescheinigung 3.1 B - EN 10204**Inspection Certificate 3.1 B - EN 10204 / Certificat de Reception 3.1 B - EN 10204****Kunde:** Anvil Alloys International Ltd.
Client:Unit 17, Fishers Ind. Est
Wiggenhall Rd Watford, Herts WD1. Great Britain**Zeugnisnummer:**
Cert No. / No. du certificat:**Bestellnummer:**
Order No. / No. de commande**Auftrag:**
Our Reference/Notre Reference:**Produkt:** Tubes seamless extruded**Product / Produit:****Spezifikation:** ASME SB 241**Specification:****Werkstoff:** 5083**Alloy/Alliage:****Abmessung:** 168,280 mm x 146,340 mm x 10,970 mm x 6000,00 mm**Size / Dimension**

6" NB Sched. 80

Kennzeichnung: Cast No. 2158-2 - 6" NB SCH 80 - 5083-0 - ASME SB 241 - AWU**Marking/Marquage:****Lieferung:****Delivered Material / Matériel délivré:**pcs. lbs
6 1142**Zustand:**
Tempér/État

0

TW METALS

TEST

SEP 03 2004

ACCEPTED BY

1. Chemische Analyse**Chemical Analysis / analyse chimique**

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.				0,40	4,0	0,05							
Cast No. max.	0,40	0,40	0,10	1,0	4,9	0,25	0,25	0,15					
2158-2/04	0,199	0,297	0,027	0,515	4,620	0,076	0,045	0,023	0,003	0,0019	0,0002	0,0013	0,0020

Hydrogen content: 0,13 ccm/100 g Al

Elements ohne Angabe < 0,01 % / Elements without indication < 0,01 %

2. Mechanische Eigenschaften**Mechanical Properties / Valeurs Mécaniques**

Anforderungen Requirements	tensile (Rm) Ksi	yield (Rp0,2) Ksi	elongation 2" %	elongation A S %	Hardness HB
min.	39,0	16,0	14,0		
max.	51,0				
1	46,835	27,260	18,5		72,3
2	45,820	26,970	17,5		71,8

Reviewed

TÜV SÜDDEUTSCHLAND Bay und Betrieb GmbH

Notified Body acc. to Pressure

Equipment Directive 97/23/EC

-Testing Laboratory-

**Ergebnis der
Prüfungen:**

Es wird bestätigt, dass die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Results:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

03.06.2004 / Sirde

Certified acc. to DIN EN ISO 9001:2000, valid until 2006-03-09
Certificate No.: 001959 QM

Der Werksachverständige

21/20.0

REVIEWED

DEC 21 2004

PED OK

09/03/2004

AG
Uelzener Weg 36 - 59425 Unna

Abnahmeprüfbescheinigung 3.1 B - EN 10204

Inspection Certificate 3.1 B - EN 10204 / Certificat de Reception 3.1 B - EN 10204

Kunde:
Client:

Arvil Alloys International Ltd.

Zeugnisnummer:
Cert No. / No. du certificat:

Bestellnummer:
Order No. / No. de commande:

Auftrag:
Our Reference/Notre Reference:

13257
11086/1

Produkt:
Product / Produit:

Spezifikation:
Specification:

Werkstoff:
Alloy/Alliage:

Abmessung:
Size / Dimension:

Kennzeichnung:
Marking/Marquage:

Lieferung:
Delivered Material / Matériau livré:

3083

ASME SB 241

12" NB STD. Wall

Cast No. 12" NB STD. Wall - 5083 - 0 - ASME SB 241 - AWU

pcs. lbs
10 1334

1. Chemische Analyse

Chemical Analysis / analyse chimique

Charge/ min.
Cast No. max.

1799

Hydrogen content: 0,13

1807

Hydrogen content: 0,12

0,40 0,40 0,10 1,0 4,9 0,25 0,25 0,15

0,15 0,27 0,02 0,74 4,7 0,07 0,04 0,02

0,13 0,30 0,02 0,76 4,5 0,07 0,02 0,02

0,12

Elements ohne Angabe < 0,01 % / Elements without indication < 0,01 %

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen
Requirements

min. max.

39,0 51,0

16,0

14,0

21,7

22,4

23,6

43,645 24,650

43,500 24,940

42,630 23,925

1

2

3

Equipment Directive 97/23/EC

Testing Laboratory

Cast No. 1799 - 5 pcs. / 1807 - 5 pcs.

Test results:

Regulator:

11.11.2004 / Since

Certified acc. to DIN EN ISO 9001:2000, valid until

Certificate No.: 001939 QM

DEC 29 2004

Prüf of

TOTAL P. 06

PO 2490244
T-151-C
12-30-04
TUV METALS
TEST
DEC 28 2004
ACCEPTED BY

DEC 29 2004

Reviewed
TÜV SÜddeutschland Bau und Betrieb GmbH
Notified Body for Pressure
Equipment Directive 97/23/EC

Testing Laboratory: The manufacturer hereby certifies that the material conforms to the latest revision of the above stated ASME Specification active at the date of manufacture.

Test results:

Regulator:

11.11.2004 / Since

Certified acc. to DIN EN ISO 9001:2000, valid until

Certificate No.: 001939 QM

DEC 29 2004

Prüf of

TOTAL P. 06

M83085261 12/20/02 CW



Uelzener Weg 36 - 59425 Unna

Abnahmeprüfbescheinigung 3.1 B - EN 10204

Inspection Certificate 3.1 B - EN 10204 / Certificat de Reception 3.1 B - EN 10204

Kunde: Anvil Alloys International Ltd.
Client: Anvil House, Vale Industrial Park
 Tolpits Lane Watford WD1 8QP
 Great Britain
 Tubes seamless extruded

Zeugnisnummer:
 Cert No. / No. du certificat: 12034
Bestellnummer:
 Order No. / No. de commande 139707/1
Auftrag:
 Our Reference/Notre Reference:

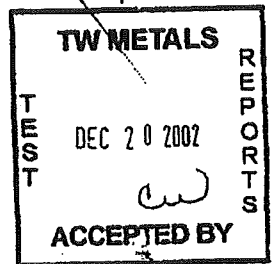
Produkt:
 Product / Produit: ASME SB 241
Spezifikation:
 Specification:

Werkstoff: EN AW-5083
 Alloy/Alliage:

Abmessung: 48,260 mm x 40,900 mm x 3,680 mm x 6000,00 mm
 Size / Dimension 1 1/2" NB Sched. 40
Kennzeichnung: Cast No. 7726 - 1 1/2" NB Sched 40 - 5083 - 0 - ASME SB 241 - AWU ✓
 Marking/Markage:

Lieferung: pcs. lbs
 Delivered Material / Matériel délivré: 34 602

Zustand: 0
 Temper/État



1. Chemische Analyse Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.				0,40	4,0	0,05							
Cast No. max.	0,40	0,40	0,10	1,0	4,9	0,25	0,25	0,15					
7726/02	0,261	0,336	0,051	0,600	4,765	0,072	0,067	0,027	0,009	0,0074	0,0001	0,0018	0,0033
Hydrogen content:	0,12	ccm/100 g Al											

Elemente ohne Angabe < 0,01 % / Elements without indication < 0,01 %

2. Mechanische Eigenschaften Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) Ksi	yield (Rp0,2) Ksi	elongation 2" %	elongation A 5 %	Hardness HB
min.	39,0	16,0	14,0		
max.	51,0				
	40,310	20,155	22,0	25,7	72,2

TI
JAN 18 2005

Reviewed

TÜV SÜDDEUTSCHLAND RHEIN-UND-BETRIEB GmbH

Notified body No. 1715 acc. to Pressure

Equipment Directive 97/23/EC

Testing Laboratory

APR 18 2005

VIEWED
JAN 06 2005

REP
SIC

**Ergebnis der
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

**Test results:
Results:**

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order.
 Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande.

AS 00 02

Certified acc. to DIN EN ISO 9002 valid until 2007-07-03

83085261
15/2/05

12/28/2004 14:42

16306902105

TW METALS

PAGE 03/03

M 8308 8087

12/28/04

ALUNNA AG

Uelzener Weg 36 - 59425 Unna

Abnahmeprüfbescheinigung 3.1 B - EN 10204

Inspection Certificate 3.1 B - EN 10204 / Certificat de Reception 3.1 B - EN 10204

Kunde:
Client:

Anvil Alloys International Ltd.

Unit 17, Fishers Ind. Est
Wiggenhall RoWetford, Herts WD1 Great Britain

Zeugnisnummer

Cert No. / No. du certificat

Bestellnummer

Order No. / No. de commande

Auftrag:

Our Reference/Notre Reference:

13159

10561/3

Pw 249 5637

T-175-C

112505

Produkt:

Product / Produit:

Spezifikation:

Specification:

Werkstoff:

Alloy/Alliage:

Abmessung

Size / Dimension

Kennzeichnung

Marking/Marquage:

Lieferung:

Delivered Material / Matériel délivré

Tubes

ASME SB 241

5083

273,050 mm x 254,510 mm x 9,270 mm x 5000,00 - 6000,00 mm
PS-01-10-40

Cast No. 01/401805 - 10" N8 SCH 40 - 5083 - 0 - ASME SB 241 - AWU ✓

Zustand:

Temper/État

pcs.

lbs

10

2655

1. Chemische Analyse

Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Ni	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.				0,40	4,0	0,05							
Cast No. max.	0,40	0,40	0,10	1,0	1,9	0,25	0,25	0,15					
01/401805	0,11	0,29	0,03	0,76	4,7	0,07	0,04	0,01					

Hydrogen content: 0,19 ccml/100 g Al

Elements ohne Angabe < 0,01 % / Elements without indication < 0,01 %

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) Ksi	yield (Rp0,2) Ksi	elongation Z" %	elongation A %	Hardness HB
min.	39,0	16,0	14,0		
max.	51,0				
1	44,080	25,665	23,6		
2	42,050	21,750	28,9		

Reviewed

TUV SÜDDEUTSCHLAND AG und Betrieb GmbH

Notified body for ASME in Pressure

Equipment Directive 97/23/EC

Testing Laboratory:

This material has been manufactured and certified to the latest revision of the above stated ASME Specification active at the date of manufacture.

JAN 25 2005

PED
OK

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Resultats:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

27.10.2004 / Snde

Certified acc. to DIN EN ISO 9001:2000, valid until 28.06.2005

ST/08'D

DEC-28-2004 10:39

83088087
10 Jan 40

m49107483 10-150



ATHENS - LAMIA NATIONAL ROAD (57th Km), 32011 INORTA VIOTIA, GREECE
TEL: +30 22620-32 269, 31503, 32 241

FAX: +30 22620-32 236, 32 237, TLX: +601-299327, 299324, 299325, 299326
Page 1

- WILL TEST CERTIFICATE -

Cts-No: 55717
DATE: 19/06/2004

Customer : COMMONWEALTH - USA
Order No : 0 1883
Your Ref. : 6310-06

Notes : INVOICE NR:95005100
INTERNAL PRICING LIST NR:80010662 PO M4907483
ACCORDING TO AA, ASTM B209-04, AMS-88A-250/6 AND ASME B209 SPECIFICATIONS.

TEST REPORT ACC TO EN 10204/3.1B

P02491884
12/16/04

PRODUCTS LIST

A. CHEMICAL ANALYSIS (%)

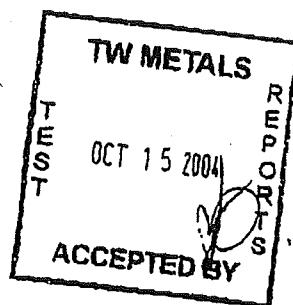
Order Product Name	Alloy	Temper	Thickn /Step	Width	Length	Coil No	Si	Fe	Mn	Mg	Cu	Ti	Zn	Cr
ALUMINIUM SHEETS														
0188301	5083	-0-	6.3500	1524.00	3657.60	040555201	.12	.33	.60	4.77	.029	.015	.016	.092
		Inches :	.25000	60.000	144.000									

B. MECHANICAL PROPERTIES

Heat Nr	Coil No	Test No	Posit	RPM N/mm2	R02 N/mm2	ELONG %
04201620	040555201	4563	AL	310.4	171.8	20.6
			Ksi :	45.012	24.913	

Quality Control Department

PIP
D. MOUTSOPOULOS



REVIEWED

PEN BK

Reviewed

TÜV SÜDDEUTSCHLAND AG und Betrieb GmbH

Notified Body for Pressure

Equipment Directive 97/23/EC

-Testing Laboratory- APR 18 2005

TP

m49107483

M8308287 6-11-04 28 5181

Test Report

BRITISH ALUMINIUM TUBES

Division of British Aluminium Specialty Extrusions and Tubes Ltd.
 Sandley Road, Redditch, Worcester B98 7HN, England
 Telephone (01527) 464500, Facsimile (01527) 404601

Customer of

ANVIL ALLOYS INTERNATIONAL LTD B/B
 ANVIL HOUSE
 VALE INDUSTRIAL PARK
 TOLPITS LANE
 WATFORD HEATHS
 WD1 8QP

Your Order No : 10219
 Our Order No : 77615
 Picking Note No : 03414
 Date : 06 Mar 2001
 Package : 1 BUNDLE

Customer Copy No. 00002/1

OVER TEST PARTS

ASME CERTIFICATE OF CONFORMITY
 THIS MATERIAL HAS BEEN MANUFACTURED-SAMPLED
 TESTED AND INSPECTED AND MEETS THE REQUIREMENTS
 OF THE NATIONAL SPECIFICATION.

Specimen No. 1003
 ASME 910248

SEAMLESS DRAWN TUBE - 73.00MM OD X 5.140MM WT

		Tensile Test					Chemical Analysis %										H
No of Pieces	Net Weight	Latent Test No.	0.2% Proof Stress KSI	Tensile Strength KSI	% Elongation 2in	Char No.	Si	Pt	Cu	Mn	Mg	Cr	Ni	Zn	Ti	ccf 100gm	
1	265	190425	19.73	45.40	20	2D210	.16	.39	.05	.66	4.56	.15		.03	.03	.14	
4	152	190426	20.16	45.25	23	2D210	.16	.39	.03	.66	4.56	.15		.03	.03	.14	
2	75	190427	20.60	43.54	21	2D162	.16	.40	.04	.69	4.16	.14		.02	.00	.14	

TW METALS

REPORT

JUN 11 2004

TEST

ACCEPTED BY

T.W. METALS

JUN 11 2004

TEST

REPORT

ACCEPTED BY

ASME CONFORMITY STATEMENT REQ'D. TEST CERTS TO EN 10204 3.1B
 WT + TOL GUIDANCE ONLY (NASS CONTR. REVIEWED) M1414.1A1N

TUV SÜDDEUTSCHLAND Rau und Betrieb GmbH

Notified Body No. 1003 acc to Pressure

Equipment Directive 97/23/EC

Testing Laboratory

Registered in England No. 2651385
 Registered Office: The Victoria, Haverhill, Cambs CB9 6BB
 VAT Registration No. GB 699 2142 26

REVIEWED

APR 18 2005

Attestation

ASA 6/14/04

JUN 14 2004

SENT BY: ANVIL ALLOYS INT;

T.W. METALS - SHIPPING

06/11/04 FRI 09:24 FAX 630

PAGE 2

444 01923 800722 : 10-JUN-04 9:05;

08/04/04 14:51 26306900147

"TW Metals."

0006/000

04/08 '04 18:16 FAX 00302262031494

ELVAL S.A. SALES DEP. - COMMONWEALTH

001/001

jobnr

m4909403 8404

04-AUG-04 16:52

FROM-Elval SA Plant Sec

1802262031494

T-258 P.001/001 F-039

S-408-C

ATHENS - LAMIA NATIONAL ROAD (57th Km), 32011 INORTA VOTIA, GREECE
TEL: +30 2620-32 269, 31503, 32 241

HELLENIC ALUMINIUM INDUSTRY S.A.

FAX: +30 2620-32 236, 32 137, TLX: +601-299327, 299324, 299325, 200326

Page: 1

- MILL TEST CERTIFICATE -

Crtf No: 53084

DATE: 05/04/2004

Customer: COMMONWEALTH - USA
Order No: 0 0415
Your Ref: 5049-06

INVOICE NR:

Notes: INTERNAL PACKING LIST NR: 00005715

ACCORDING TO AA, ASTM B209/02, ASME B209/02 AND AMS300A-250/6 SPECIFICATIONS.

TEST REPORT ACC TO EN 10204/3.1B

P02481668
8/20/04

PRODUCTS LIST

A. CHEMICAL ANALYSIS (%)

Order Line	Product Name	Alloy	Temper	Thickness / Step	Width	Length	Coil No	Si	Fe	Mn	Mg	Cu	Ti	Zn	Dr
ALUMINIUM SHEETS															
0041501		5083	-0-	9.5250	1524.00	3657.60	040180401	.12	.35	.49	4.24	.025	.014	.016	.208
			Inches:	.37500	60.000	144.000									
0041502		5083	-0-	12.7000	1524.00	3657.60	040180501	.12	.35	.49	4.24	.025	.014	.016	.208
			Inches:	.50000	60.000	144.000									

B. MECHANICAL PROPERTIES

Heat No	Coil No	Test No	Posit	RPV N/mm2	RPV N/mm2	ELONG %
04201630	040180401	1630	RL	311.0	188.6	16.5
			Kel	45.099	27.349	
04201630	040180501	2639	RL	306.4	159.6	17.7
			Kel	44.432	23.144	

Quality Control Department

Reviewed

TÜV SÜDDEUTSCHLAND

Notified Body acc. to Pressure

Equipment Directive 97/23/EC

-Testing Laboratory-

Art. SIREA Di BOND

B.R.

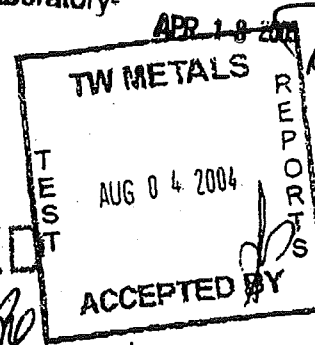
K. MAZIMAKIS

At Reviewed

8/27/04

REVIEWED

AUG 26 2004

P60
01C

4909403

CERTIFIED INSPECTION REPORT

Alcoa .C.

PITTSBURGH, PA DAVENPORT, ARKS

Ship From: RIVERDALE, IA.

Page 1

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described therein, including any specifications forming a part of this description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

Pec:

Mark J. Vrablec

Mark J. Vrablec
Director of Manufacturing Davenport Works

Kenton P. Young
Quality Assurance Manager

Kenton P. Young

267889
Ship Date
2004-05-04
P.O. No./Govt Contract No.
M 49101149

124061
B.L. No.
51172
Customer

Invoice No.
38205
Alcoa No. Item
DS-72428-1

TW METALS-CINCINN

Ship To: TW METALS
7640 REINHOLD DRIVE
CINCINNATI, OH 45237

Item Description

.750 IN TK X 96.000 IN W X 288.000 IN LN (N) A/T 5083-
O STORAGE TANK & CRYOGENIC PLATE MILL FINISH, SAWED. PER ASME
SB-209 REV A99 & EXCEPT MARKING AMS-QQ-A-
250/6 & EXCEPT MARKING ASTM B209 REV 02A &
EXCEPT MARKING AMS4056 REV F DIMENSIONAL
TOLERANCES F ANS H35.2 REV 2003
((MARKED)) INTERLEAVED SKID WGT: 6000 LB QUAN TOL +/-
40 % CQR 0103319 REV 06 CUST REQ 04-04-
05 *** W/E 04-04-17 ***


9-409-C

*PO 2-18/668
728
8/30/04*

Num	Package Ticket	Lot	Weight	Quantity	UOM	Pc Id/Serl
1	770982	424404	5899	3	PC	
2	770986	424404	1962	1	PC	
			7861	4		

Notes for CQR: 0103319.6
PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF AMS-QQ-A-250/6 ALSO MEETS THE REQUIREMENTS OF QQ-A-250/6G. PRODUCT
PRODUCED AND MARKED TO THE REQUIREMENTS OF QQ-A-250/6G ALSO MEETS THE REQUIREMENTS OF AMS-QQ-A-250/6.

CQR: 0103319.6 -Specification Limits

NOMINEE BODY NO. 15300-10 Pressure									
Equipment Directive 97/23/EC									
Testing Laboratory- 									
APR 18 2005									
REMAIN									
Other									
Total									
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Lot: 424404 -Mechanical, Physical, Metallography, Quantometer Results

Temp Dir	Longitudinal	No. Test	UTS	KSI	TYS	EL4D	PCT
		3	Max	45.9	28.2	21.2	
			Min	45.3	27.2	19.6	

Equipment Directive 97/23/EC

Testing Laboratory

APR 18 2005

REMAIN

TW METALS REPORTS
TEST
MAY 05 2004
ACCEPTED BY
gml

REVIEWED

APR 25 2005

PEP

CERTIFIED INSPECTION REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPORT WORKS
Ship From: RIVERDALE, IA.

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

Per:

Mark J. Vrablic

Mark J. Vrablic
Director of Manufacturing Davenport Works

Kenton P. Young

Kenton P. Young
Quality Assurance Manager

267889
Ship Date
2004-05-04
P.O. No./Govt Contract No.
M 49101149

124061
B.L. No.
51172
Customer

Invoice No.
38205

Alcoa No. Item
DS-72428-1

TW METALS-CINCINN

S-409-C

Lot: 424404 - Mechanical, Physical, Metallography, Quantometer Results (cont.)

Cast Number	SI	FE	CU	MN	MG	CR	ZN	TI
H274101D	.10	.22	.04	0.65	4.5	.09	.01	.02

Reviewed

TÜV SÜDdeutsche Land und Betrieb GmbH
Notified Body No. 5400 to Pressure

Equipment Directive 97/23/EC
-Testing Laboratory-

APR 18 2004

[Signature]



REVIEWED

AUG 26 2004 *[Signature]*

[Signature]

APR 27 2004

JUL. 1. 2004 7:16AM

COMMONWEALTH METAL

NO. 1-131 7-13/0

PO 2490245

5483C

commonwealth PO # M49103125

ELVALATHENS - LAMIA NATIONAL ROAD (57th Km), 32011 INERVA, GREECE
TEL: +30 2620-32 269, 31503, 32 241

HELLENIC ALUMINIUM INDUSTRY S.A.

FAX: +30 2620-32 286, 32 237, Tlx: +601-299327, 299324, 299328, 299326

Page 1

- MILL TEST CERTIFICATE -

Crtf No: 5483

DATE: 26/05/2004

Customer : COMMONWEALTH - USA
Order No : 0 0763
Your Ref. : 5323-06Notes : THICKNESS 4309
INTERNAL PACKING LIST NO: 60005002 PO M49103125
ACCORDING TO AL. ASTM B202, AMS-5000-250/6 AND AMS 5209 SPECIFICATIONS

TEST REPORT ACC TO EN 10204/3.1B

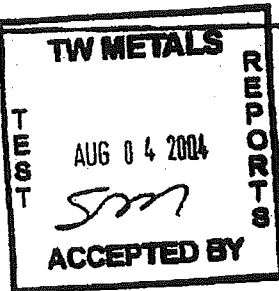
PRODUCTS LIST

A. CHEMICAL ANALYSIS (%)

Ord Line	Product Name	Alloy	Temper	Thickness / Strip Width	Length	Coil No	Si	Fe	Mn	Mg	Cu	Ti	Zn	Cr
ALUMINIUM SHEETS														
0076301		5083	-0-	9.3200	1524.00	3657.60	040267301	.11	.31	.43	4.30	.032	.006	.019 .180
			Inches :	.37000	60.000	144.000								
0076302		5083	-0-	12.7000	1524.00	3657.60	040453101	.12	.33	.55	4.54	.032	.013	.017 .118
			Inches :	.50000	60.000	144.000								

B. MECHANICAL PROPERTIES

Heat No	Coil No	Test No	Posit	RM N/mm ²	R02 N/mm ²	ELONG %
04203000	040267301	2989	RL	313.0	190.2	15.8
			Kel :	45.389	27.581	
04201610	040453101	2943	RL	313.0	173.0	18.0
			Kel :	45.389	25.087	



Quality Control Department

REVIEWED
JAN 19 2005
PER OK

Item # 11450 + 11452

Attn: Sue McD +
Tom Crippen

Reviewed

TÜV SÜddeutschland Bau und Betrieb GmbH

Notified Body for Pressure

Equipment Directive 97/23/EC

- Testing Laboratory - APR 18 2005

44103125

CERTIFIED INSPECTION REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPO CRKS

Ship From: RIVERDALE, IA:

Page 1

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

P.R.

Mary J. Burke

Director of Manufacturing Davenport Works

Karen P. Young

Quality Assurance Manager

321315
Ship Date
2005-01-07
P.O. No./Govt Contract No.
M 49118997

6034
B.L. No.
67081

Invoice No.
79299

Alcoa No. Item
DS-81952-1

Customer
TW METALS CINCINN

488581

5504-C
James

Ship To: TW METALS
7640 REINHOLD DRIVE
CINCINNATI, OH 45237

Item Description
1.000 IN TK X 96.000 IN W X 288.000 IN LN (A) A/T 5083-
O STORAGE TANK & CRYOGENIC PLATE MILL FINISH, SAWED PER ASME
SB-209 REV A99 & EXCEPT MARKING AMS-QQ-A-
250/6 & EXCEPT MARKING ASTM B209 REV 04 &
EXCEPT MARKING AMS4056 REV F DIMENSIONAL
TOLERANCES F ANS H35.2 REV 2003
((MARKED)) INTERLEAVED SKID WGT: 6000 LB QUAN TOL +/-
40 % CQR 0101480 REV 08 CUST REQ 05-01-
07 *** W/E 05-01-08 ***

Num	Package Ticket	Lot	Weight	Quantity	UOM	Pc Id/Ser1
1	244367	701492	5356	2	PC	
2	244375	701492	5381	2	PC	
			10737	4		

Notes for CQR: 0101480.8
PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF AMS-QQ-A-250/6 ALSO MEETS THE REQUIREMENTS OF QQ-A-250/6G. PRODUCT
PRODUCED AND MARKED TO THE REQUIREMENTS OF QQ-A-250/6G ALSO MEETS THE REQUIREMENTS OF AMS-QQ-A-250/6.

CQR: 0101480.8 -Specification Limits

Tempz Dir	Longitudinal	Max	Min	UTS KSI	TYS KSI	EL4D PCT	Other												
							Each	Total	Aluminum	REMAIN	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Other
O		Max	Min	40.0	51.0	29.0	18.0	16	.40	.40	.10	1.0	4.9	.25	.25	.15	.05	.15	REMAIN
Chemical Composition																			
Alloy 5083		Max	Min																

Lot: 701492 -Mechanical, Physical, Metallography, Quantometer Results

Temp Dir	Longitudinal	Max	Min	UTS KSI	TSYS KSI	EL4D PCT
O		46	45.4	46	45.4	45.4

Revised 20.2
25.7

TUV Sudddeutschland Bau und Betrieb GmbH

Notified Body No. 1800 to Pressure

Equipment Directive 97/23/EC

-Testing Laboratory-

APR 18 2005

TW METALS	REPORT
TEST	DATE JAN 11 2005
ACCEPTED BY	<i>SM</i>

FEB 01 2005

A. J. M

2-105
P.d of

CERTIFIED INSPECTION REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPORT RKS
Ship From: RIVERDALE, IA

Page 2

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described herein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

Mark J. Vrabec
Director of Manufacturing Davenport Works

Karen P. Young
Quality Assurance Manager

321315
Ship Date
2005-01-07
P.O. No./Contract No.
M 49118997

6034
B.L. No.
67081
Invoice No.
79299
Alcoa No. Item
DS-81952-1
Customer
TW METALS-CINCINN

Lot: 701492 - Mechanical, Physical, Metallography, Quantometer Results (cont.)
Cast Number Chemical SI FS CU MN MG CR ZN TI
H2944031 Actuals .11 .22 .04 0.64 4.5 .08 .02 .02

S-504-C

RECEIVED
FEB 01 2005
A. J. J. 2-1-05
UV S ddeutschland Day and Betrieb GmbH
Notified Body No. 1001 to Pressure
Equipment Directive 97/23/EC
Testing Laboratory- APR 18 2005

TW METALS REPORTS
JAN 11 2005
TEST
ACCEPTED BY
SM

CERTIFIED INSPECTION REPORT

We hereby certify that this material covered by this certificate has been inspected with, and has been found to equal, the applicable requirements described therein, including any specifications from any part of the description and that samples representative of the material (the company) on file and had the material properties shown on the face of this report.

Mark J. Vrabec

Director of Manufacturing Development

Kevin P. Young

Quality Assurance Manager

HICOR INC.

277639

Ship Date

191050

B.L. No.

2004-07-12

P.O. No./Govt Contract No.

55512

Item

49657

Alcoa No.

DS-74499-1

M 49194333

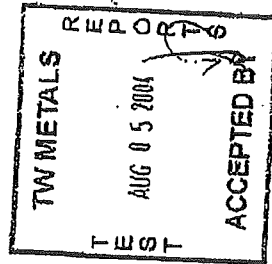
CH METALS-ROGERS

Ship To: TW METALS
14600 JAMES RD.
ROGERS, MN 55374

Item Description

.6250 IN TK (+.0270 -.0270) X 60.000 IN W (+5/16 - 0) X 144.000 IN LN (+1/2 - 0) (N) A/T 5083-0 STORAGE TANK & CRYOGENIC PLATE MILL FINISH, SAVED ITEM SB-209 REV A99 & EXCEPT MARKING AMS-QQ-A-250/6 & EXCEPT MARKING 04 & EXCEPT MARKING ASTM A209 REV DIMENSIONAL TOLERANCES F ANSI H35.2 REV 2003 ((MARKED)) PAPER INTERLEAVED SKID WGT: 6000 LB QUAN TOL +/- 40 % CQR 0141836 REV 04 CUST REQ 04-06-07 *** W/S 08-06-19 ***

9-4/22-0



Num	Package Ticket	Lot	Weight	Quantity	UON	Pc Id/Ser1
1	790702	529552	6299	12	PC	
2	790703	529552	4734	9	PC	
			11033	21		

Notes For CQR: 0141836.4

PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF AMS-QQ-A-250/6 ALSO MEETS THE REQUIREMENTS OF QQ-A-250/6G. PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF QQ-A-250/6G ALSO MEETS THE REQUIREMENTS OF AMS-QQ-A-250/6.

CQR: 0141836.4 -Specification Limits

Temp Dir	Longitudinal	Max	Min	UTS	KSI	UTS	KSI	EL4D	PCT
				40.0	29.0	40.0	29.0	16	
Chemical Composition				SE	PE	CU	MAN	MG	CR
Alloy 5083				Max	40.0	1.0	4.9	.25	.15
Lot: 529552				Min	40.0	4.0	0.05	.15	.15
									Other
									Each
									Total
									Aluminum
									REMAIN

Lot: 529552 -Mechanical, Physical, Metallurgy, Quantometer Results

Temp Dir	Longitudinal	Max	Min	UTS	KSI	UTS	KSI	EL4D	PCT
				45.8	24.3	45.8	24.3	25.7	
				Min	44.8	23.5	22.1		

AI Techno
AGM 10/2/04

REVIEWED

REV SÜddeutschland Bau und Betrieb GmbH

Notified Body No. 1010010000

Equipment Directive 97/23/EC

-Testing Laboratory- APR 18 2005

REV OK

CERTIFIED INSPECTION REPORT

AICOA INC.

PITTSBURGH, PA

Ship From: RIVERDRUG, ITA.

Page

via heavy duty ball two material covered by this certificate has been inspected and, as far as is known, is in compliance with the applicable requirements of the material and the composition limits and has the mechanical properties shown on the face of this report.

Mark J. Vrabec

Mark J. Vrabec
Director of Manufacturing Operations

Karen P. Young

Karen P. Young
Quality Assurance Manager

191050

B.L. No.

277639

Ship Date

2004-07-12

P.O. No./Govt Contract No.

55512

Invoice No.

49657

Alcoa No. Item

DS-74099-1

CUSTOMER

N 49104333

FOR DISCOUNTS-DISCOUNTS

5-422-C

Lot: 529552 - Mechanical, Physical, Metallurgy, Quantometer Results (cont.)

Cast Number H2716011 Chemical SI FE CU MN MG CR ZN TI Actuals .09 .20 .06 0.66 4.6 .09 .01 .02

Reviewed

TÜV SÜddeutschland Rau und Betrieb GmbH

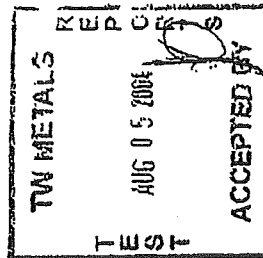
Notified Body No. 1001 acc to Pressure

Equipment Directive 97/23/EC

-Testing Laboratory-

APR 18 2005

TA



REVIEWED

10/2/04

OCT 01 2004

007/007

"TW Metals"

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11:32

08/05/04

T 49107482 11/8/04 CW

5-460-2

PAGE 06/09

TW METALS

15306902105

11/08/2004 15:38

COMMONWEALTH METAL SEP. 30. 2004 8:50AM

1. Zentrale für 147043 Indaya Keller Rostow region Russia		DAO sBelaya Kalitva Metallurgical Plant INSPECTION CERTIFICATE EN 10204-3.1B		Jt 6664 Date 20.08.04						
CUSTOMER "Rural Trade Limited" Geneva Place, 2nd Floor #313 Waterfront Drive, P.O. Box 3339, Road Town Toronto, British Virgin Islands.		CONTRACT No 6335404414601062 APPENDIX No 12029 ORDER No								
CONSIGNEE COMMONWEALTH METAL CORP P.O. Box 1426, 560 Sylvan Avenue, Eastwood Cliffs, New Jersey 07632-3139, USA		Description of Goods: Aluminum Planks Alloy and Temper: 5083 O Lot No: 12193 (1-4) Standard ASTM B 209-02, ANSI-H35.2-2001, AMS-QQ-A-250/6 ASME SB-209 Dimension: 1,000*60,000*144,008 Net Weight: 1580 kg Ql. of packages: pcs		AI Reviewed NOV 11 2004						
MECHANICAL PROPERTIES Units min max Nominal requirements Test results		Ultimate Strength (ksi) 40 51 45.2-45.4	Yield Strength (ksi) 18 29 28.9-29.0	Elongation Elt % 16 18.8						
CHEMICAL COMPOSITION, %										
	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Al
Max/min requirements Test results	0.40 0.18	0.40 0.27	0.10 0.038	0.4 0.68	4.0 4.57	0.05 0.084		0.25 0.04	0.15 0.043	
	TW METALS NOV 08 2004 ACCEPTED BY TEST REPORTS NOV 10 2004									

It is hereby certified that the above material is manufactured in compliance with the specified standards and meets the stipulated requirements

Reviewed

TUV SÜDDEUTSCHLAND Bau und Betrieb GmbH

Notified Body No. 1000 - Accredited to Pressure

Equipment Directive 97/23/EC

-Testing Laboratory-

APR 18 2005

Quality Control Inspector

TW METALS

REPORTS

 NOV 08 2004
 ACCEPTED BY
 TEST REPORTS

REVIEWED

NOV 10 2004

Quota: 017.05/01

T.M. METALS

05/25/04 TUE 08:15 FAX 630

APR 18 2015

4910-120

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S-477-C

501-605

REPORT

TW METALS

MAY 25 2004

ACCEPTED

TEST

JAN 20 2005

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SECRET

JAN 06 2005

CERTIFIED INSPECTION REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPORT WORKS
Ship From: RIVERDALE, IA.

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described therein, retaining any specifications forming a part of the description and that no defects have been observed in the material or the mechanical properties shown on the face of this sheet.

Mark J. Vrabec
Mark J. Vrabec
Director of Manufacturing Development Works

Kathleen P. Young
Kathleen P. Young
Quality Assurance Manager

269660
Ship Date
2004-05-17
P.O. No./Govt Contract No.
M 49103120

132028
B.L. No.
51670
Customer
TW METALS-ROGERS

Page 2

Lot: 485709 - Mechanical, Physical, Metallography, Quantometer Results (cont.)
Test Number Chemical SI PE CU MN HG CR ZN TI
H2740014 Actuals .10 .22 .04 0.65 4.6 .09 .02 .02

S-477-C

Reviewed

TÜV SÜDDEUTSCHLAND RHEINLAND BETRIEB GMBH
Notified Body
Equipment Directive 97/23/EC
-Testing Laboratory-

APR 18 2005

TW METALS REPORTS
MAY 25 2004
ACCEPTED BY

REVIEWED

JAN 06 2005

TW METALS - SHIPPING

T.W. METALS

05/25/04 TUE 08:15 FAX 630
MAY-18-2004 12:04

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