P/N: S45 Rev. B

Report No.CC16-60755
Date: 09-13-16

CERTIFICATE OF COMPLIANCE AND TEST REPORT

FOR

SEAMLESS ALUMINUM CYLINDERS MANUFACTURED UNDER
U. S. DEPARTMENT OF TRANSPORTATION REGULATIONS, AND
TRANSPORT CANADA REGULATIONS.

MANUFACTURED FOR: CATALINA CYLINDERS
7300 ANACONDA AVENUE, GARDEN GROVE, CALIFORNIA 92841

MANUFACTURED BY: CATALINA CYLINDERS
7300 ANACONDA AVENUE, GARDEN GROVE, CALIFORNIA 92841

CONSIGNED TO: CATALINA CYLINDERS
7300 ANACONDA AVENUE, GARDEN GROVE, CALIFORNIA 92841

CYLINDER DESCRIPTION AND DESIGN CRITERIA:

Specification: USA: 49CFR 178.35 and 178.46 (DOT-3AL)
CANADA: CAN/CSA: B339-08 Clauses 4 and 7 (TC-3ALM)

Service Pressure: **3000** psi (**207** BAR)

Nominal Size **6.89** inches (**175.0** mm) OD

DOT Test Pressure: **5000** psi TC Test Pressure: **311**BAR

17.71 inches (**449.8** mm) Long

Minimum Wall: **.452** inches (**11.481** mm)

Nominal Volumetric Capacity: **394.2** Cu. In. (**6.4** L)

DOT Calculated Stress at test pressure: **32666** psi.

MANUFACTURING PROCESS:

Construction: Backward Extrusion to Form a Seamless Shell, the open end is closed by swaging.

MATERIAL AND HEAT TREATMENT: 6061 Aluminum. Solution Treatment and Artificial Aging to the 6061 T6 Condition.

REPORT DETAILS:

Quantity: **34**

Cast Code: **PD4, PD5**

Lot Numbers: **AC051**

MARKS STAMPED INTO THE SHOULDER OF THE CYLINDER ARE:

Specification and Service Pressure: DOT 3AL3000

Serial Numbers: **EJ0004398** to **EJ0004431** inclusive

Test Date: 09-16

Inspector's Mark: CL

Other Marks: TC-3ALM207 CATALINA S45 SP12
COLTRI SUB

Manufacturer's Symbol: M4002

I hereby certify that I have determined the cylinders described on this report comply with the requirements of the U. S. Department of Transportation Specification 3AL, and Transport Canada Specification 3ALM.

Remarks:

T. H. COCHRANE LABORATORIES, LTD.
Milwaukee, WI 53225

Signed: _____
Inspector

Date: SEP 13 2016

NOTE: The cylinders that are the subject of this Test Report have been inspected in accordance with the requirements of the law and the regulations of the Department of Transportation, and Canada's Transport Canada. This Test Report is not to be taken as an indication that said cylinders are or are not safe for use. THIS TEST REPORT DOES NOT CONSTITUTE AN EXPRESS OR IMPLIED WARRANTY.

SERIAL NUMBER RANGE: **EJ0004398** to **EJ0004431** inclusive

SIZE: 6.89 O.D. x 17.71 long.

CYLINDER MANUFACTURER: CATALINA CYLINDERS

RECORD OF CHEMICAL ANALYSIS OF MATERIAL FOR CYLINDERS

Alloy	Cast Code	Type of Analysis (Ladle or Cast)	CHEMICAL ANALYSIS									
			Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi
6061	PD4	Ladle	.60	.17	.30	.01	.90	.077	.00	.01	.000	.000
6061	PD5		.60	.17	.30	.01	.90	.077	.00	.01	.000	.000

Balance AL Other Elements each <.05, Total <.15

Chemical Analysis and Check Analysis are on file at the Manufacturer. Material Manufacturer: ALCAN

The above analysis has been verified to comply with material authorized by the specification.

RECORD OF PHYSICAL TESTS OF MATERIAL FOR CYLINDERS

LOT NO.	TEST BAR	YIELD STRENGTH IN PSI (MPa)	TENSILE STRENGTH IN PSI (MPa)	% ELONGATION	FLATTENING TEST
AC051	0	44,878 psi (309.4 Mpa)	49,455 psi (341.0 Mpa)	18.4	Pass
	180	46,536 psi (320.9 Mpa)	49,239 psi (339.5 Mpa)	15.8	

Signed: _____ INSPECTOR

Date: SEP 13 2016

Location: Garden Grove, California

Record Of Hydrostatic Testing

In accordance CGA Pamphlet C-1

Manufacturer: Catalina Cylinders / Garden Grove
Independent Inspector: T. H. Cochrane Labs

Test Date: 12-Sep-16
Day: Monday
Time: 6:47 AM

Cylinder Type: **S45-EJ**

Test Station: **# 4 Hydro**

Test Pressure (T/P): **5000**

Cylinder Serial Number	Cylinder Lot Number	Hydro Jkt Num	Actual T/P (psi)	Total Expan (cc)	Perm Expan (cc)	Ratio Perm/Tot (%)	Empty Weight (lbs)	Full Weight (lbs)	Volume Capacity (cu in)	Pass or Fail
EJ0004398	AC051	1	5000	40.6	0.0	0.0	20.04	34.30	395.57	PASS
EJ0004399	AC051	3	5000	40.4	0.0	0.0	19.92	34.25	397.51	PASS
EJ0004400	AC051	5	5000	41.1	0.0	0.0	19.96	34.30	397.79	PASS
EJ0004401	AC051	6	5000	40.9	0.0	0.0	20.02	34.25	394.74	PASS
EJ0004402	AC051	1	5000	40.5	0.0	0.0	19.90	34.30	399.46	PASS
EJ0004403	AC051	3	5000	40.7	0.0	0.0	19.96	34.25	396.40	PASS
EJ0004404	AC051	5	5000	40.7	0.0	0.0	20.02	34.30	396.13	PASS
EJ0004405	AC051	6	5000	41.0	0.0	0.0	19.94	34.30	398.35	PASS
EJ0004406	AC051	1	5000	40.6	0.0	0.0	19.96	34.25	396.40	PASS
EJ0004407	AC051	3	5000	40.8	0.0	0.0	19.90	34.30	399.46	PASS
EJ0004408	AC051	5	5000	40.8	0.0	0.0	19.96	34.25	396.40	PASS
EJ0004409	AC051	6	5000	40.9	0.0	0.0	19.92	34.30	398.90	PASS
EJ0004410	AC051	1	5000	40.3	0.0	0.0	19.96	34.25	396.40	PASS
EJ0004411	AC051	3	5000	40.7	0.0	0.0	19.88	34.30	400.01	PASS
EJ0004412	AC051	5	5000	40.7	0.0	0.0	20.02	34.30	396.13	PASS
EJ0004413	AC051	6	5000	40.9	0.0	0.0	19.92	34.30	398.90	PASS
EJ0004414	AC051	1	5000	40.4	0.0	0.0	19.96	34.30	397.79	PASS
EJ0004415	AC051	3	5000	40.6	0.0	0.0	19.90	34.25	398.07	PASS
EJ0004416	AC051	5	5000	40.7	0.0	0.0	20.00	34.30	396.68	PASS
EJ0004417	AC051	6	5000	42.0	1.0	2.4	20.00	34.25	395.30	PASS
EJ0004418	AC051	1	5020	40.6	0.0	0.0	20.00	34.30	396.68	PASS
EJ0004419	AC051	3	5020	40.7	0.0	0.0	20.02	34.25	394.74	PASS
EJ0004420	AC051	5	5020	40.9	0.0	0.0	19.90	34.25	398.07	PASS
EJ0004421	AC051	6	5020	41.0	0.0	0.0	20.02	34.30	396.13	PASS
EJ0004422	AC051	1	5000	40.3	0.0	0.0	19.88	34.30	400.01	PASS
EJ0004423	AC051	3	5000	40.9	0.0	0.0	20.02	34.30	396.13	PASS
EJ0004424	AC051	5	5000	40.6	0.0	0.0	19.88	34.25	398.62	PASS
EJ0004425	AC051	6	5000	41.1	0.0	0.0	20.02	34.30	396.13	PASS
EJ0004426	AC051	1	5000	40.0	0.0	0.0	19.90	34.25	398.07	PASS
EJ0004427	AC051	3	5000	40.8	0.1	0.2	20.02	34.25	394.74	PASS
EJ0004428	AC051	5	5000	40.9	0.0	0.0	19.90	34.25	398.07	PASS
EJ0004429	AC051	1	5000	40.1	0.0	0.0	19.88	34.25	398.62	PASS
EJ0004430	AC051	3	5000	40.7	0.0	0.0	19.88	34.30	400.01	PASS
EJ0004431	AC051	5	5000	40.9	0.0	0.0	19.88	34.30	400.01	PASS

D.L

T. H. COCHRANE LABORATORIES, LTD.

Signature Page of Certifying Inspector for DOT/TC Certificate of Compliance and Test Report No. CCLP 60755.

I hereby certify that I have determined the cylinders described on this report comply with the requirements of the U. S. Department of Transportation Specification 3AL, and Transport Canada Specification 3ALM.

T. H. COCHRANE LABORATORIES, LTD.
Milwaukee, Wisconsin

Signed: _____
Certifying Inspector

Record Of Mechanical Property Testing

Independent Inspection Agency: T.H. Cochrane Laboratory,Ltd(IA03)
Manufacturer: Catalina Cylinders / Garden Grove, CA Facility (M4002)

HT Lot # AC051

Thursday, June 21, 2012 5:13 AM

Cylinder Type S45

Cast # PD4 - PP5

Crosshead Speed 0.11 in/min

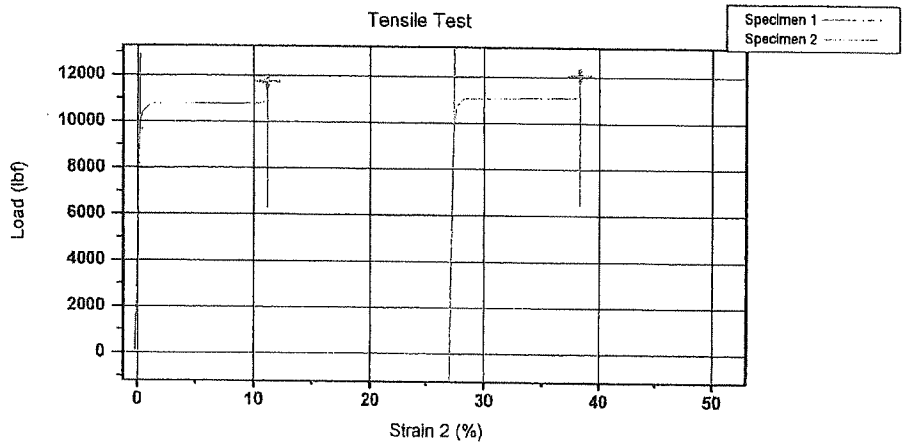
Material: 6061-T6

Specimens tested: 2

Hardness 62

0 degree Pass ✓ Fail ___
180 degree Pass ✓ Fail ___
Crush Test Pass ✓ Fail ___

	Thickness (in)	Width (in)	Area (in^2)	YTS-Load (lbf)	YTS (psi)	UTS-load (lbf)	UTS (psi)	%e (%)
1	0.492	0.496	0.2440	10951.7	44878.2	12068.7	49455.3	18.4
2	0.479	0.497	0.2381	11078.7	46536.8	11722.2	49239.9	15.8



INSPECTOR: [signature] 15

DATE: 6-21-12

Certificat d'analyse / Certificate of Analysis

SHA

Ref. client / CustomerRef. :
045981

Commande Rio Tinto Alcan / Rio Tinto Alcan Order
415-0310455-1

Point d'origine / Point of Origin
Rio Tinto Alcan Inc.
USINE SHAWINIGAN
1100 Boul. St-Sacrement
Shawinigan
Québec, Canada
G9N 6W4

Expédié à / Ship to :
CATALINA CYLINDERS
DIVISION OF ALUMINUM PRECISION PRODUCTS
7300 ANACONDA AVE

GARDEN GROVE
CA,United States
92841

Vendu à / Sold to :
ALCAN PRIMARY PRODUCTS COMPANY LLC
6150 PARKLAND BLVD., SUITE 200

CLEVELAND,OH

44124-4185

Date d'exp. / Shipping Date:	2012-05-09
Connaissement / Bill of Lading:	326-096153-067107
Liste d'exp. / Shiplist:	67107
Équipement / Equipment :	IC978751
Alliage (AA) / Alloy (AA) :	69276 (6061)
Produit / Product :	Aluminum Extrusion Ingot
Dimension :	175 MM DIA. X 5486 MM LONG 6.89 IN DIA. X 216 IN LONG

Analyse en % du poids / Analysis in % of weight

No d'échantillon de coulée Sample No of Drop	No Lot Lot No	Poids net (KG) Net Weight (KG)	Poids net (LB) Net Weight (LB)	Pièces Pieces	Si / Pb	Fe / Sn	Cu	Mn	Mg	Cr	Zn	Ti	Bi	Ga
12260101A	8216291	2,131	4,698	6	0.60 / 0.000	0.17 / 0.000	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
12260101A	8216292	2,130	4,696	6	0.60 / 0.000	0.17 / 0.000	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
12260101A	8216293	2,132	4,700	6	0.60 / 0.000	0.17 / 0.000	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
12260101A	8216294	2,130	4,696	6	0.60 / 0.000	0.17 / 0.000	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
12260101A	8216295	2,131	4,698	6	0.60 / 0.000	0.17 / 0.000	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
12260101A	8216296	2,131	4,698	6	0.60 / 0.000	0.17 / 0.000	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
12260101A	8216297	2,130	4,696	6	0.60 / 0.000	0.17 / 0.000	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
12260101A	8216298	2,129	4,694	6	0.60 / 0.000	0.17 / 0.000	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
12260101A	8216299	2,129	4,694	6	0.60	0.17	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01

PDH

Paquets : / Bundles :	18	Poids net : / Net Weight :	KG 38,344 / LB 84,534	Pièces : / Pieces :	108	Tare :	KG 369 / LB 814	Poids brut : / Gross Weight :	KG 38,713 / LB 85,348

LES LINGOTS TRI-LOK 23KG, LES LINGOTS EN FORME DE T, LES GUEUSES, LES LINGOTS DE LAMINAGE MIS AU REBUT ET AUTRES LINGOTS DE REFUSION ONT TENDANCE A FORMER DES CAVITÉS SUCEPTIBLES D'EMPRISONNER DE L'EAU, POUR ÉLIMINER L'HUMIDITÉ AVANT LEUR EMPLOI DANS TOUT PROCÉDÉ DE FUSION ET POUR PRÉVENIR LES RISQUES D'EXPLOSION, LES LINGOTS DEVRAIENT ETRE SOUMIS A UN SÉCHAGE INTENSIF PAR CHAUFFAGE PRÉLIMINAIRE AVANT DE LES INCORPORER À DU METAL EN FUSION.
TRI-LOK 23 KG INGOT, TEE INGOT SOWS, SCRAPPED SHEET INGOT AN OTHER INGOT FOR REMELTING ARE PRONE TO THE FORMATION OF SHRINKAGE CAVITIES WHICH WILL PERMIT ENTRAPMENT OF WATER. TO ELIMINATE MOISTURE PRIOR TO USE IN ANY MELTING OPERATION AND TO SAFEGUARD AGAINST POSSIBLE EXPLOSION HAZARDS. INGOTS SHOULD BE THOROUGHLY DRIED BY PREHEATING BEFORE LOADING THEM INTO MOLTEN METAL.

/ Michel Caron

L'EXACTITUDE DE CES ANALYSES EST DANS LES NORMES DES LIMITES COMMERCIALES.
THE ANALYSES HERE ARE ACCURATE WITHIN COMMERCIAL LIMITS.

MAY 29 2012

Imprimé le 2012/05/09 15:14:13

Certificat d'analyse / Certificate of Analysis

SHA

Ref. client / CustomerRef. :
045981

Commande Rio Tinto Alcan / Rio Tinto Alcan Order
415-0310455-1

Point d'origine / Point of Origin
Rio Tinto Alcan Inc.
USINE SHAWINIGAN
1100 Boul. St-Sacrement
Shawinigan
Québec, Canada
G9N 6W4

Expédié à / Ship to :
CATALINA CYLINDERS
DIVISION OF ALUMINUM PRECISION PRODUCTS
7300 ANACONDA AVE

GARDEN GROVE
CA,United States
92841

Vendu à / Sold to :
ALCAN PRIMARY PRODUCTS COMPANY LLC
6150 PARKLAND BLVD., SUITE 200

CLEVELAND,OH

44124-4185

Date d'exp. / Shipping Date: 2012-05-09
Connaissement / Bill of Lading: 326-096153-067107
Liste d'exp. / Shiplist: 67107
Équipement / Equipment : IC978751

Alliage (AA) / Alloy (AA) : 69276 (6061)
Produit / Product : Aluminum Extrusion Ingot
Dimension : 175 MM DIA. X 5486 MM LONG 6.89 IN DIA. X 216 IN LONG

Analyse en % du poids / Analysis in % of weight

No d'échantillon de coulée Sample No of Drop	No Lot Lot No	Poids net (KG) Net Weight (KG)	Poids net (LB) Net Weight (LB)	Pièces Pieces	Si / Pb	Fe / Sn	Cu	Mn	Mg	Cr	Zn	Ti	Bi	Ga
					0.000	0.000								
12260101A	8216300	2,129	4,694	2	0.60	0.17	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
					0.000	0.000								
12260101B				4	0.60	0.17	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
					0.000	0.000								
12260101B	8216301	2,130	4,696	6	0.60	0.17	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
					0.000	0.000								
12260101B	8216302	2,128	4,691	6	0.60	0.17	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
					0.000	0.000								
12260101B	8216303	2,131	4,698	6	0.60	0.17	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
					0.000	0.000								
12260101B	8216304	2,130	4,696	6	0.60	0.17	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
					0.000	0.000								
12260101B	8216305	2,131	4,698	6	0.60	0.17	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
					0.000	0.000								
12260101B	8216306	2,131	4,698	6	0.60	0.17	0.30	0.01	0.90	0.077	0.00	0.01	0.000	0.01
					0.000	0.000								

Paquets : / Bundles :	Poids net : / Net Weight :	Pièces : / Pieces :	Tare :	Poids brut : / Gross Weight :
18	KG 38,344 / LB 84,534	108	KG 369 / LB 814	KG 38,713 / LB 85,348

LES LINGOTS TRI-LOK 23KG, LES LINGOTS EN FORME DE T, LES GUEUSES, LES LINGOTS DE LAMINAGE MIS AU REBUT ET AUTRES LINGOTS DE REFUSION ONT TENDANCE À FORMER DES CAVITÉS SUCEPTIBLES D'EMPRISONNER DE L'EAU, POUR ÉLIMINER L'HUMIDITÉ AVANT LEUR EMPLOI DANS TOUT PROCÉDÉ DE FUSION ET POUR PRÉVENIR LES RISQUES D'EXPLOSION, LES LINGOTS DEVRAIENT ÊTRE SOUMIS À UN SÉCHAGE INTENSIF PAR CHAUFFAGE PRÉLIMINAIRE AVANT DE LES INCORPORER À DU METAL EN FUSION.
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/ Michel Caron

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THE ANALYSES HERE ARE ACCURATE WITHIN COMMERCIAL LIMITS.

MAY 29 2012

Imprimé le 2012/05/09 15:14:13

ACOS

Charges set up
9-9-16 cyl.
SUS-B2-1
D# TYPE

VOL. 395.57 CU.FT
D.L

225 INDIA ST

MAY
3 A 7 M

ORDER#CS9271
GC#ACOS1

M
M4

A