

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: **311BAR**
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: **44**Cast Code: **RS0**Lot Numbers: **AH558****MARKS STAMPED INTO THE SHOULDER OF THE CYLINDER ARE:**

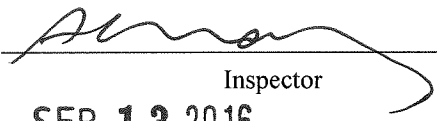
Specification and Service Pressure: DOT 3AL3000

Serial Numbers: **EJ0004432** to **EJ0004475** inclusive Test Date: 09-16Inspector's Mark: 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 53225Signed: 

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: EJ0004432 to EJ0004475 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	RS0	Ladle	.57	.16	.31	.02	.90	.075	.00	.01	.001	.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
AH558	0	40,957 psi (282.4 Mpa)	51,745 psi (356.8 Mpa)	22.8	Pass
	180	40,891 psi (281.9 Mpa)	51,541 psi (355.4 Mpa)	24.1	

Signed: _____

Date: _____

Location: Garden Grove, California

SEP 13 2016 INSPECTOR

RECORD OF RESIDUAL HYDROCARBON TESTING
(In Accordance with Fed Spec. RR-C-901C)

Lot No.	Serial Number	Total Hydrocarbons (mg)	Regulatory Level Allowed (mg)
AH558	EJ0004432	4.9	5.44

Certificate of Residual Hydrocarbon Testing are on file at Manufacturer.

Certifying Entity: **South Coast Pollution Control**

This record of Residual Hydrocarbon Testing is provided for informational purposes only, it is not to be considered a part of the Certificate of Compliance and Test Report to which it is attached, and has not been certified or verified by T.H. Cochrane Laboratories, Ltd.

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: 7:25 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
EJ0004432	AH558	1	5000	40.6	0.0	0.0	19.90	34.25	398.07	PASS
EJ0004433	AH558	3	5000	40.3	0.0	0.0	20.04	34.35	396.96	PASS
EJ0004434	AH558	5	5000	41.2	0.0	0.0	19.92	34.25	397.51	PASS
EJ0004435	AH558	6	5000	41.0	0.0	0.0	19.98	34.30	397.24	PASS
EJ0004436	AH558	1	5000	41.3	0.1	0.2	19.92	34.30	398.90	PASS
EJ0004437	AH558	3	5000	41.2	0.0	0.0	19.92	34.30	398.90	PASS
EJ0004438	AH558	5	5000	41.3	0.0	0.0	19.92	34.30	398.90	PASS
EJ0004439	AH558	6	5000	41.5	0.3	0.7	19.88	34.30	400.01	PASS
EJ0004440	AH558	1	5000	41.4	0.3	0.7	19.92	34.30	398.90	PASS
EJ0004441	AH558	3	5000	41.8	0.6	1.4	19.90	34.30	399.46	PASS
EJ0004442	AH558	5	5000	42.5	1.3	3.1	19.94	34.30	398.35	PASS
EJ0004443	AH558	6	5000	41.5	0.3	0.7	19.90	34.30	399.46	PASS
EJ0004444	AH558	1	5000	42.3	1.1	2.6	19.90	34.25	398.07	PASS
EJ0004445	AH558	3	5000	41.4	0.0	0.0	19.90	34.30	399.46	PASS
EJ0004446	AH558	5	5000	42.0	0.5	1.2	19.90	34.30	399.46	PASS
EJ0004447	AH558	6	5000	42.2	1.1	2.6	19.92	34.35	400.29	PASS
EJ0004448	AH558	1	5000	41.4	0.4	1.0	19.96	34.30	397.79	PASS
EJ0004449	AH558	3	5000	41.2	0.0	0.0	19.90	34.30	399.46	PASS
EJ0004450	AH558	5	5000	41.7	0.5	1.2	19.90	34.30	399.46	PASS
EJ0004451	AH558	6	5000	43.4	2.1	4.8	19.88	34.25	398.62	PASS
EJ0004452	AH558	1	5000	40.9	0.0	0.0	19.88	34.25	398.62	PASS
EJ0004453	AH558	3	5000	41.1	0.0	0.0	19.90	34.25	398.07	PASS
EJ0004454	AH558	5	5000	41.7	0.0	0.0	19.88	34.25	398.62	PASS
EJ0004455	AH558	6	5000	43.3	2.0	4.6	19.92	34.25	397.51	PASS
EJ0004456	AH558	1	5000	41.4	0.3	0.7	19.94	34.30	398.35	PASS
EJ0004457	AH558	3	5000	41.0	0.0	0.0	19.90	34.25	398.07	PASS
EJ0004458	AH558	5	5000	41.4	0.0	0.0	19.88	34.25	398.62	PASS
EJ0004459	AH558	6	5000	42.4	1.3	3.1	19.90	34.25	398.07	PASS
EJ0004460	AH558	1	5000	40.9	0.0	0.0	19.90	34.25	398.07	PASS
EJ0004461	AH558	3	5000	40.6	0.0	0.0	19.98	34.30	397.24	PASS
EJ0004462	AH558	5	5000	41.0	0.0	0.0	20.32	34.30	387.81	PASS
EJ0004463	AH558	6	5000	41.2	0.0	0.0	19.90	34.25	398.07	PASS
EJ0004464	AH558	1	5020	40.9	0.0	0.0	19.88	34.25	398.62	PASS
EJ0004465	AH558	3	5020	41.3	0.0	0.0	19.88	34.25	398.62	PASS
EJ0004466	AH558	5	5020	41.5	0.0	0.0	19.90	34.25	398.07	PASS
EJ0004467	AH558	6	5020	41.7	0.2	0.5	19.90	34.25	398.07	PASS
EJ0004468	AH558	1	5000	40.6	0.0	0.0	19.88	34.25	398.62	PASS
EJ0004469	AH558	3	5000	41.6	0.3	0.7	19.90	34.25	398.07	PASS
EJ0004470	AH558	5	5000	41.4	0.0	0.0	19.86	34.25	399.18	PASS
EJ0004471	AH558	6	5000	41.4	0.3	0.7	19.88	34.25	398.62	PASS
EJ0004472	AH558	1	5000	41.6	0.5	1.2	19.90	34.25	398.07	PASS
EJ0004473	AH558	3	5000	41.1	0.0	0.0	19.90	34.25	398.07	PASS

Record Of Hydrostatic Testing

In accordance CGA Pamphlet C-1

Manufacturer: Catalina Cylinders / Garden Grove

Test Date: 12-Sep-16

Independent Inspector: T. H. Cochrane Labs

Day: Monday

Time: 7:25 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
EJ0004474	AH558	5	5000	41.7	0.2	0.5	19.90	34.25	398.07	PASS
EJ0004475	AH558	6	5000	41.8	0.5	1.2	19.90	34.30	399.46	PASS

(A)
DL

T. H. COCHRANE LABORATORIES, LTD.

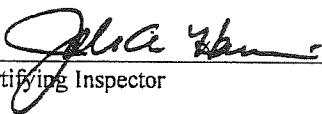
Signature Page of Certifying Inspector for DOT/TC Certificate of Compliance and Test Report No.

CC116-60756

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

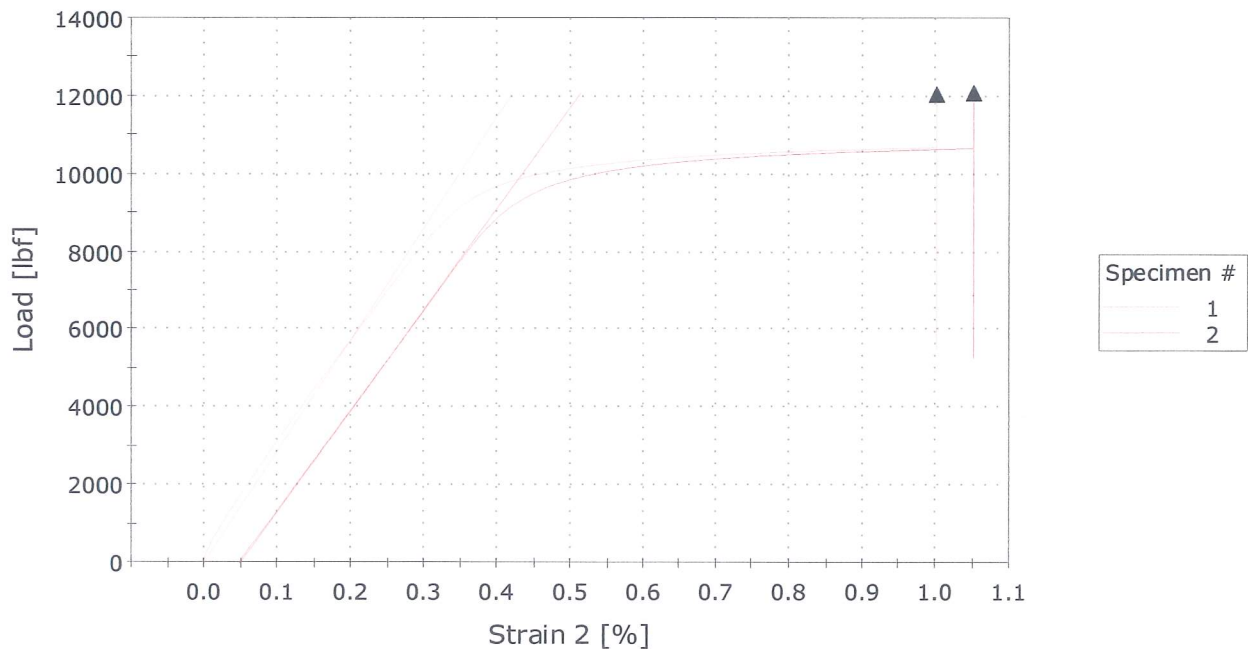
Independent Inspection Agency: TH Cochrane Laboratory Ltd(IAO3)

Manufacturer: Catalina Clinders/Garden Grove, Ca. Facility(M4002)

HT Lot#	AH558
Cylinder Type	EJ45
Cast #	RS0
Hardness	65.
Material	6061-T6
Rate 1	0.11 in/min
Number of specimens in sample	2
0 Degree Pass/Fail (Enter P or F)	P
180 Deg Pass/Fail (Enter P or F)	P
Crush Test Pass/Fail (Enter P or F)	P

	Thickness [in]	Width [in]	Area [in^2]	YTS- Load [lbf]	YTS [psi]	UTS-load [lbf]	UTS [psi]	%e [%]
1	0.474	0.491	0.2327	9532.2	40957.5	12043.0	51745.6	22.8
2	0.478	0.490	0.2342	9577.6	40891.7	12072.0	51541.4	24.1

Tensile Test



INSPECTOR:

[Signature]



DATE:

10-27-14

Certificat d'analyse / Certificate of Analysis

SHA

Page: 1 / 3

R... client / Customer Ref. :

Commande Rio Tinto Alcan / Rio Tinto Alcan Order

Point d'origine / Point of Origin
Rio Tinto Alcan Inc.

R52308

415-0319142-1

Expedié à / Ship to :

CATALINA CYLINDERS
DIVISION OF ALUMINUM PRECISION PRODUCTS
7300 ANACONDA AVE

Vendu à / Sold to :

ALCAN PRIMARY PRODUCTS COMPANY LLC
6150 PARKLAND BLVD., SUITE 200

GARDEN GROVE
CA, United States

CLEVELAND, OH

92841

44124-4185

Alliage (AA) / Alloy (AA) : 69276
Produit / Product : Aluminium Extrusion Ingot
Matériel Client / Customer Part : 6061-0 6.89"
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	Pb	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Bi	Ga
14636501B	8293056	2,128	4,691	6	0.57	0.16	0.31	0.02	0.90	0.075	0.00	0.01	0.000	0.01
14636501B	8293057	2,128	4,691	6	0.57	0.16	0.31	0.02	0.90	0.075	0.00	0.01	0.000	0.01
14636501B	8293058	2,129	4,694	6	0.57	0.16	0.31	0.02	0.90	0.075	0.00	0.01	0.000	0.01
14636501B	8293059	2,129	4,694	6	0.57	0.16	0.31	0.02	0.90	0.075	0.00	0.01	0.000	0.01
14636501B	8293060	2,129	4,694	6	0.57	0.16	0.31	0.02	0.90	0.075	0.00	0.01	0.000	0.01
14636501B	8293061	2,128	4,691	6	0.57	0.16	0.31	0.02	0.90	0.075	0.00	0.01	0.000	0.01
14636501B	8293062	2,129	4,694	6	0.57	0.16	0.31	0.02	0.90	0.075	0.00	0.01	0.000	0.01
14636501B	8293063	2,129	4,694	6	0.57	0.16	0.31	0.02	0.90	0.075	0.00	0.01	0.000	0.01

Paquets : 18	Poids net : KG 38,317 LB 84,475	Pièces : 108	Tare : KG LB 369 814	Poids brut : KG LB 38,686 85,288
Bundles :	Net Weight :	Pieces :		Gross Weight :

LES INGOTS TRILOK 2X6, LES INGOTS EN FORME DE T, LES GUEUSES, LES LINGOTS DE LAMINAGE MIS AU REBUT ET AUTRES LINGOTS DE REFUSION, ONT TENDANCE A FORMER DES CAVITES SUSCEPTIBLES D'EMPRISONNER DE L'EAU, POUR ELIMINER L'HYDRIDE AVANT LEUR EMPLOI DANS TOUT PROCÉDÉ DE FUSION ET POUR PRÉVENIR LES RISQUES D'EXPLOSION, LES INGOTS DEVRAIENT ÊTRE SOUMIS A UN SÉCHAGE INTENSIF PAR CHAUFFAGE PRÉLIMINAIRE AVANT DE LES INCORPORER A DU MÉTAL EN FUSION. TRILOK 2X6 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.

LEXACTITUDE DE CES ANALYSES EST DANS LES NORMES DES LIMITES COMMERCIALES. / Michel Capelle
THE ANALYSES HERE ARE ACCURATE WITHIN COMMERCIAL LIMITS.
MAR 19 2014

ADDIT 2104
215 57

9.12.16

CYL TYP: S45-B2.1
LOT# AH558

Vol. 398.07 CUIN
DL

M/P

#

ORDER # CS9271

LOT# AH558

112002 09016 S15 SP12 110-3111001
M A S

EJ00004132

201-641-0000