

DALLAS LABORATORIES, INC.

Consultants and Technologists
Chemical and Petroleum Chemists

P.O. BOX 152837, DALLAS, TEXAS 75315
1323 WALL ST, DALLAS, TEXAS 75215
PHONE 214/565-0593
FAX 214/565-1094

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AMERICAN SOCIETY FOR QUALITY CONTROL
FEDERATION OF SOCIETIES FOR COATINGS TECHNOLOGY

Submitted by: Sierra Aluminum
11806 Pacific Ave.
Fontana, CA 92337

Date: January 30, 2020

Attn: Julio Muneton

Report No.: 52558

REPORT

Sample:

Organic Coated aluminum extrusions
Coating: DuraCoat (#19-04-170)
Production Date: 8/14/19
Cure: minutes @ 350°F
Pre-treatment: Henkel 5-stage Chrome Pretreat
Drawing: #602097

A. PROCEDURE

Submitted sample was tested according to AAMA 2604-17, "Voluntary Specification, Performance Requirements and Test procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels," Section 8.1 through 8.8.2 with the following results:

B. REPORT

<u>Test</u>	<u>Results</u>	<u>AAMA 2604-17 Specification Requirements</u>
8.1 Color Uniformity (ASTM D2244)	Standard	Standard
8.2 Specular Gloss (ASTM D523)	46.3	As reported
8.3 Dry Film Hardness (ASTM D3363)	Pass F	F hardness and no film rupture
8.4 Film Adhesion (ASTM D3359)	Pass	
8.4.1.1 Dry	4B	4B min. rating
8.4.1.2 Wet	4B	4B min. rating
8.4.1.3 Boiling	4B	4B min. rating
8.5 Impact Resistance (ASTM D3359)	Pass	No removal of film from Substrate

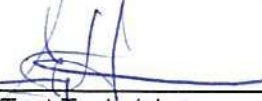
<u>Test</u>	<u>Results</u>	<u>AAMA 2604-17 Specification Requirements</u>
8.6 Abrasion Resistance (ASTM D968)	Pass (>ACV 20)	ACV 20 minimum
8.7 Chemical Resistance		
8.7.1 Muriatic Acid	Pass	No Blistering or Visible Change
8.7.2 Mortar	Pass	No Blistering or Visible Change
8.7.3 Nitric Acid	Pass (Delta E = 0.05)	Hunter Delta E=5 maximum
8.7.4 Detergent	Pass	No Film Adhesion Loss or Visible Change
8.7.5 Window Cleaner Resistance	Pass	No blistering or noticeable change in appearance and no film loss
8.8 Corrosion Resistance		
8.8.1 Humidity (ASTM D2247)	Pass (No Blisters)	Not greater than Few & No. 8
8.8.2 Salt spray (ASTM B117)	Pass	
Scribe	10	7 Minimum rating
Field	10	8 Minimum rating

Date Testing Started: 9/25/19
 Date Testing Completed: 1/30/20
 Date Test Report Expires: 1/30/23
 Sampled by: Brad Snoddy of ALI.

Testing Conducting At: Dallas Laboratories, Inc., 1323 Wall St., Dallas, Texas 75215.

The test results indicate that the sample tested is in compliance with all of the performance requirements of AAMA 2604-17 for High Performance Organic Coatings on Aluminum Extrusions and Panels, except for section 8.9 WEATHERING which must be furnished by the coating supplier for full compliance to AAMA 2604-17 as specified by AAMA.

DALLAS LABORATORIES, INC.



 Lab Test Technician

Analyst: GF
 KWJ: js

DALLAS LABORATORIES, INC.



 Kevan W. Jones, Vice President

AAMA
CERTIFICATION PROGRAM
AAMA Painted Aluminum Qualification Samples
(AAMA 2603, 2604, & 2605)



All information must be supplied for the product to be considered for AAMA approval. Sample requirements; there are to be 30 pieces 1 foot long. Extrusion must be 60 to 80 mils thickness with a 2" wide flat surface. For AAMA 2603 a dry film thickness of 0.8 mil is required. For AAMA 2604 & 2605 a dry film thickness of 1.2 mil is required. Extrusion die drawing is required for AAMA approval.

Samples to be in test within 45 days of sampling.

Sampling Date: 8/29/19
Applicator: SIERRA ALUMINUM
Address: 11806 Pacific ave
City, State, & Zip: Fontana CA 92337
Contact Person: Julio Muneta Phone #: 951 781-7800
E-Mail: Julio.Muneta@SierraAluminum.com Test PO: _____
Test to AAMA (check): 2603 2604 2605
Pretreatment (check): Chrome Non-chrome
Manufacture: Henkel
Identification Number: 319, 407, 475

Number of Stages in the Pretreatment System: 5 stages
319
407
475

Paint Identification:
Manufacturer: DURACOAT
Paint Type (Trade Name): White HB Product Number: 270W-69
Lot Number: 19-04-170 Number of Coatings: 1 one

When an extrusion has more than one paint coating, each coating must be identified, i.e. an extrusion might have a base paint covered with one or more clear coats—the clear coats must be identified.

Application/Curing: 350°

Date of Application: 8-14-19 Die Number: 602097 Drawing Attached

Signatures of:
Manufacturer Representative: [Signature]
Inspector: [Signature]
Laboratory to perform test: Dallas Labs

The Laboratory is to notify the manufacturer of receipt of the samples.

Copies: Inspector _____
Manufacturer _____
Laboratory _____
Accompany Sample _____
Date Received: 9-2-19 Estimated Test Completion: 02/20
Signature: [Signature]

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Submitted by: Sierra Aluminum Company
11806 Pacific Ave.
Fontana, CA 92337

Date: November 5, 2019

Attn: Sebastian Estrada

Report No.: 52557-1

REPORT

Sample:

Anodized Finish, Class I, Clear
Coating: Sulfuric Acid / Magnesium Seal
Pre-Treatment: Caustic pretreat
Drawing: #602097
Production Date: 8/27/19

A. PROCEDURE

Submitted sample was tested according to AAMA 611-14, "Voluntary Specification for Anodized Architectural Aluminum", Class I, Designation A41, all sections, except 8.7 Weather Exposure.

B. RESULTS

<u>Test</u>	<u>Results</u>	<u>AAMA 611-14 (I) Specification Requirements</u>
8.1 Oxide Coating Thickness (mil) (ASTM D7091)	0.71	0.70 min.
8.2 Oxide Coating Weight & Apparent Density (ASTM B137)	Fail	
8.2.1 Coating Weight (mg/in ²)	24.1*	27.0 min.
8.2.3 Apparent Density (g/in ³)	33.9*	38.0 min.
8.3 Color Uniformity (ΔE) (AATCC TM173)	1.2	5.0 max.
8.4 Gloss Uniformity (ASTM D523, 60°)	1.7	Δ 15.0 max.
8.5 Abrasion Resistance (Michael Clark Abrasion Test)	Pass	No bite or chalk dust pick-up

<u>Test</u>	<u>Results</u>	<u>AAMA 611-14 (I) Specification Requirements</u>
8.6 Corrosion Resistance (ASTM B117, 3000 hrs. using 5% salt solution)	Test term. @ 936 hrs.	No spots or pits larger than 1 mm
8.8 Seal Test (mg/in ²) (ASTM B680)	0.6	2.6 max loss
8.9 Craze Resistance, °F	170	No crazing @ 170° min.

* Indicates failure.

Date Testing Started: 9/23/19


Date Testing Completed: 11/4/19

Date Test Report Expires: N/A

Sampled by: Brad Snoddy of ALI.

The test results indicate that the sample tested is **NOT** in compliance with all of the performance requirements of AAMA 611-14 Class I.

DALLAS LABORATORIES, INC.


Kevan W. Jones, Vice President

Analyst: GF, TL
KJ: js



(Validator / Operations Administrator)

AAMA
CERTIFICATION PROGRAM
AAMA Anodized Aluminum Qualification Samples
(AAMA 611)

1



All information must be supplied for the product to be considered for AAMA approval. Test samples can be coupons or production parts; there are to be 30 pieces 1 foot long with a 1-1/2" flat surface. Class 1 requires a coating thickness of 0.7 mil. Class 2 requires a coating thickness of 0.4 mil. Extrusion die drawing is required for AAMA approval.

Sampling Date: 8-29-19 *Samples to be in test within 45 days of sampling.*
Anodizer: Sierra Aluminum Co.
Address: 11806 Pacific Av.
City, State, & Zip: Fontana CA, 92337
Contact Person: Jr. Estrada Phone #: (951) 781-7800
E-Mail: Sebastian.Estrada@SierraAluminum.com Test PO: _____
AAMA 611 Class to be tested to (Check):
 Class 1 Class 2

Pretreatment:
① Submerged on a alkaline cleaner for 5 minutes.
② Submerged on a caustic tank (sodium hydroxide) for 12 minutes.

Anodizing Supplier: _____
Anodizing Identification: _____
Lot Number: _____

Anodizing Process:
① Submerged on a anodize tank for a cycle of 27 minutes. (Sulfuric Acid)
② Submerged on a seal tank (Magnesium) for 22 minutes.

Date of Anodizing: 8-27-19 Die Number: 602097 Drawing Attached

Signatures of: _____
Manufacturer Representative: _____

Inspector: [Signature]

Laboratory to perform test: Dallas Labs
The Laboratory is to notify the manufacturer of receipt of the samples.

Copies: Inspector _____
Manufacturer _____
Laboratory _____
Accompany Sample _____
Date Received: 9-3-19 Estimated Test Completion: 02/20
Signature: [Signature]

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Submitted by: Sierra Aluminum Company
11806 Pacific Ave.
Fontana, CA 92337

Date: November 7, 2019

Attn: Sebastian Estrada

Report No.: 52556-1

REPORT

Sample:

Anodized Finish, Class II, Clear
Coating: Sulfuric Acid / Magnesium Seal
Pre-Treatment: Caustic Pretreat
Drawing: #602097
Production Date: 8/27/19

A. PROCEDURE

Submitted sample was tested according to AAMA 611-14, "Voluntary Specification for Anodized Architectural Aluminum, Class II, Designation A31, all sections, except 8.7 Weather Exposure.

B. RESULTS

<u>Test</u>	<u>Results</u>	<u>AAMA 611-14 (II) Specification Requirements</u>
8.1 Oxide Coating Thickness (mil) (ASTM D7091)	0.40	0.40 min.
8.2 Oxide Coating Weight & Apparent Density (ASTM B137)	Pass	
8.2.2 Coating Weight (mg/in ²)	16.7	15.5 min.
8.2.3 Apparent Density (g/in ³)	41.7	38.0 min.
8.3 Color Uniformity (ΔE) (AATCC TM173)	1.0	5.0 max.
8.4 Gloss Uniformity (ASTM D523, 60°)	1.3	Δ 15.0 max.
8.5 Abrasion Resistance (Michael Clark Abrasion Test)	Pass	No bite or chalk dust pick-up

<u>Test</u>	<u>Results</u>	<u>AAMA 611-14 (II) Specification Requirements</u>
8.6 Corrosion Resistance (ASTM B117, 1000 hrs. using 5% salt solution)	Pass	No spots or pits larger than 1 mm
8.8 Seal Test (mg/in ²) (ASTM B680)	0.1	2.6 max loss
8.9 Craze Resistance	Pass	No crazing @ 170° min

Date Testing Started: 9/23/19

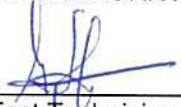
Date Testing Completed: 11/6/19

Date Test Report Expires: 11/6/22

Sampled by: Brad Snoddy of ALI.

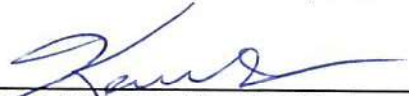
The test results indicate that the sample tested is in compliance with all of the performance requirements of AAMA 611-14 Class II except for Section 8.7 as procedurally noted.

DALLAS LABORATORIES, INC.



Lab Test Technician

DALLAS LABORATORIES, INC.



Kevan W. Jones, Vice President

Analyst: GF
KWJ: js

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Submitted by: Sierra Aluminum Company
11806 Pacific Ave.
Fontana, CA 92337

Date: November 7, 2019

Attn: Sebastian Estrada

Report No.: 52556-2

REPORT

Sample:

Anodized Finish, Class II, Dark Bronze
Coating: Sulfuric Acid / Magnesium Seal
Pre-Treatment: Caustic Pretreat
Drawing: #602097
Production Date: 8/27/19

A. PROCEDURE

Submitted sample was tested according to AAMA 611-14, "Voluntary Specification for Anodized Architectural Aluminum, Class II, Designation A34, all sections, except 8.7 Weather Exposure.

B. RESULTS

<u>Test</u>	<u>Results</u>	<u>AAMA 611-14 (II) Specification Requirements</u>
8.1 Oxide Coating Thickness (mil) (ASTM D7091)	0.40	0.40 min.
8.2 Oxide Coating Weight & Apparent Density (ASTM B137)	Pass	
8.2.2 Coating Weight (mg/in ²)	23.3	15.5 min.
8.2.3 Apparent Density (g/in ³)	58.3	38.0 min.
8.3 Color Uniformity (ΔE) (AATCC TM173)	1.3	5.0 max.
8.4 Gloss Uniformity (ASTM D523, 60°)	2.6	Δ 15.0 max.
8.5 Abrasion Resistance (Michael Clark Abrasion Test)	Pass	No bite or chalk dust pick-up

<u>Test</u>	<u>Results</u>	<u>AAMA 611-14 (II) Specification Requirements</u>
8.6 Corrosion Resistance (ASTM B117, 1000 hrs. using 5% salt solution)	Pass	No spots or pits larger than 1 mm
8.8 Seal Test (mg/in ²) (ASTM B680)	0.1	2.6 max loss
8.9 Craze Resistance	Pass	No crazing @ 170° min

Date Testing Started: 9/23/19


Date Testing Completed: 11/6/19

Date Test Report Expires: 11/6/22

Sampled by: Brad Snoddy of ALI.


The test results indicate that the sample tested is in compliance with all of the performance requirements of AAMA 611-14 Class II except for Section 8.7 as procedurally noted.

DALLAS LABORATORIES, INC.



Lab Test Technician

DALLAS LABORATORIES, INC.



Kevan W. Jones, Vice President

Analyst: GF
KWJ: js

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Submitted by: Sierra Aluminum Co.
11806 Pacific Ave.
Fontana, CA 92337

Date: January 30, 2020

Attn: Jr. Estrada

Report No.: 52557-2

REPORT

Sample:

Anodized Finish, Class I, Dark Bronze
Coating: Sulfuric Acid Magnesium Seal
Pre-Treatment: Caustic pretreat
Drawing: #602097
Production Date: 8/27/19

A. PROCEDURE

Submitted sample was tested according to AAMA 611-14, "Voluntary Specification for Anodized Architectural Aluminum", Class I, Designation A44, all sections, except 8.7 Weather Exposure.

B. RESULTS

<u>Test</u>	<u>Results</u>	<u>AAMA 611-14 (I) Specification Requirements</u>
8.1 Oxide Coating Thickness (mil) (ASTM D7091)	0.70	0.70 min.
8.2 Oxide Coating Weight & Apparent Density (ASTM B137)	Pass	
8.2.1 Coating Weight (mg/in ²)	31.4	27.0 min.
8.2.3 Apparent Density (g/in ³)	44.9	38.0 min.
8.3 Color Uniformity (ΔE) (AATCC TM173)	1.2	5.0 max.
8.4 Gloss Uniformity (ASTM D523, 60°)	2.0	Δ 15.0 max.
8.5 Abrasion Resistance (Michael Clark Abrasion Test)	Pass	No bite or chalk dust pick-up

<u>Test</u>	<u>Results</u>	<u>AAMA 611-14 (I) Specification Requirements</u>
8.6 Corrosion Resistance (ASTM B117, 3000 hrs. using 5% salt solution)	Pass	No spots or pits larger than 1 mm
8.8 Seal Test (mg/in ²) (ASTM B680)	0.06	2.6 max loss
8.9 Craze Resistance, °F	Pass	No crazing @ 170° min

Date Testing Started: 9/23/19


Date Testing Completed: 1/29/20

Date Test Report Expires: 1/29/23

Sampled by: Brad Snoddy of ALI.


The test results indicate that the sample tested is in compliance with all of the performance requirements of AAMA 611-14 Class I except for Section 8.7 as procedurally noted.

DALLAS LABORATORIES, INC.



Lab Test Technician

DALLAS LABORATORIES, INC.



Kevan W. Jones, Vice President

Analyst: GF
KWJ: js

A.L.I

(Validator / Operations Administrator)

AAMA
CERTIFICATION PROGRAM
AAMA Anodized Aluminum Qualification Samples
(AAMA 611)

2



All information must be supplied for the product to be considered for AAMA approval. Test samples can be coupons or production parts; there are to be 30 pieces 1 foot long with a 1-1/2" flat surface. Class 1 requires a coating thickness of 0.7 mil. Class 2 requires a coating thickness of 0.4 mil. Extrusion die drawing is required for AAMA approval.

Sampling Date: 8-29-19 *Samples to be in test within 45 days of sampling.*
Anodizer: Sierra Aluminum Co.
Address: 11806 Pacific Av.
City, State, & Zip: Fontana, CA. 92337
Contact Person: Jr. Estrada Phone #: (951) 781-7800
E-Mail: Sebastian.Estrada@SierraAluminum.com Test PO: _____
AAMA 611 Class to be tested to (Check):

Class 1 Class 2
Dark Brz.

Pretreatment:

① Submerged on a alkaline cleaner for 5 minutes.

② Submerged on a caustic tank (Sodium Hydroxide) for 12 minutes.

Anodizing Supplier: _____
Anodizing Identification: _____
Lot Number: _____

Anodizing Process:

① Submerged on a anodize tank for a cycle of 27 minutes. (Sulfuric Acid)

② Submerged on a color tank (Stannous Sulfate, Sulfuric Acid, Sulfamic Acid) for a minutes.

③ Submerged on a seal tank (Magnesium) for 22 minutes.

Date of Anodizing: 8-27-19 Die Number: 602097 Drawing Attached

Signatures of: _____
Manufacturer Representative: [Signature]
Inspector: [Signature]
Laboratory to perform test: Dallas Labs

The Laboratory is to notify the manufacturer of receipt of the samples.

Copies: *Inspector* _____
Manufacturer _____
Laboratory _____
Accompany Sample _____
Date Received 9-3-19 Estimated Test Completion: 09/20
Signature: [Signature]