LORIN

Copper Penny (Patent No 8580101) Architectural Class II

TECHNICAL DATA SHEET

Finish Description: Copper Penny (Patent No 8580101) Architectural Class II is a finish developed for exterior applications where UV fade resistance is critical to the designer. The Copper Penny (Patent No 8580101) Architectural Class II finish utilizes a patented anodizing process using a 'modified' two-step electrolytic coloring system. The combination of an Architectural Class II film thickness with the inorganic coloring chemistry provides excellent corrosion resistance and will maintain color consistency under harsh weathering conditions.

Industry Designations:

Aluminum Association

AA-M12-C22-A34

Mil A-8625F Classification

Type II Sulfuric Anodize

Industry Standards

AAMA 611-12

Voluntary specification for anodized architectural aluminum

Mil A-8625F Anodizing Standard

Anodic coatings for aluminum and aluminum alloys

Aluminum Properties

Alloy: 5005

Temper: Half Hard

Finish: Mill Finish

Mechanical Properties

UTS: 20-26 ksi [138-179 MPa]

YTS: 15 min [103 MPa]

Elongation: 4% - 5% min

Chemical Properties

Si: 0.30 %

Fe: 0.7 %

Cu: 0.20 %

Mn: 0.20 %

Mg: 0.50—1.1 %

Cr: 0.10 %

Zn: 0.25 %

Other: 0.15 %

Al: Remainder

Gauge Availability

0.032" (0.8 mm)

0.040" (1.0 mm)

0.050" (1.3 mm)

0.063" (1.6 mm)

0.080" (2.0 mm)

Width Availability [1]

48.0" (1219 mm)

Anodize Film Thickness

Architectural Class II:

Anodize Finish Properties [2]

Optical: Not Applicable

Gloss: Coarse Matte

Color : Copper Penny Exterior

Color Target: < Delta E of 5.0

UV Stable: Yes

Environment: Exterior

Quality Grade: 2

Other:

Footnotes: 1 - Other widths can be custom ordered. 2 - Panel-to-Panel match quality can be custom ordered.

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Aluminum Secondary Services

Shearing, Width Capabilities:
7" (178mm) - 62" (1575 mm)

Shearing, Length Capabilities:
Up to 192" (4876 mm)

Shearing, Loading Gauge:
Up to 0.080" (2.0 mm)

Slitting, Width Capabilities:
0.75" (19 mm) min

Slitting, Loading Gauge:
Up to 0.100" (2.5 mm)

Other Secondary Services:
Protective peel-able films
International packaging
Perforating and embossing

Maintenance and Cleaning

The anodized aluminum finish can be washed with mild soap and water followed by a clean water rinse. For more information on cleaning anodized aluminum, please refer to the Aluminum Association Publication 92, Care of Aluminum or AAMA 609 & 610-09, Cleaning and maintenance guide for architecturally finished aluminum.

Sustainability and LEED

Recycled Content, 5005 alloy:
100% recyclable
Recycled Content, 6.6%
Reclaimed-Virgin Material, 93.4%
2012.04.30 Mill6

Volatile Organic Compounds:
The aluminum oxide layer does not contain any VOC's

Availability

The standard lead time for stocked gauges and widths is two weeks for anodizing and one week for any secondary services such as slitting, shearing and applying transparent protective films or paper.

Please check availability of Non-Stocked materials by contacting our sales staff using our toll free number 800.654.1159 or email your request to info@lorin.com. Some raw materials may have extended lead times.

Technical Support

A staff of factory trained personnel are available to offer technical assistance. Please call our toll free number 800.654.1159 or email your question to info@lorin.com.

Product Support Partners

Lorin Industries works very closely with many manufacturers' in multiple markets who specialize in anodized aluminum fabrication. Our support staff can assist you if you are looking for finished components. Please call our toll free number 800.654.1159 or email your request for product and application support to info@lorin.com.

Warranty

A limited 20 year warranty is available upon request. The warranty is issued on a per project basis and can be applied for on line by completing an application for warranty at www.Lorin.com

Anodized Finish Test Data

Characteristic	Test Method	Standard	Test Results
Oxide Layer, Weight	ASTM B137 - Coating Dissolution	AAMA 611-12, 2.4mg/cm^2 (15.5mg/in^2)	> 2.4mg/cm^2 (15.5mg/in^2)
Color Uniformity	ASTM B2244 - Calculation Δ in Delta E	AAMA 611-12, must meet agreed upon specification	Lorin Color D497, Δ in Delta E ≤ 3.0
Gloss Uniformity	ASTM D523 - 60° Gloss Reflectance	AAMA 611-12, must meet agreed upon specification	Lorin Gloss E79, Nominal Target 15
Abrasion Resistance	ASTM D4060 - Taber abrasive wheel	Based on a anodic film thickness, 11 µm (0.400 mils)	5,000 cycles; 8.2 mg/weight loss; 1.6 wear index
Film Hardness	ASTM D3363 - Pencil Hardness	Based on a anodic film thickness, 11 µm (0.400 mils)	9H Hardness
Corrosion Resistance	ASTM B117 - Neutral Salt Spray	AAMA 611-12, 1,000 hours ≤ 15 pits less than 1mm, 381 cm^2 (150in^2)	Pass, No visible pits
Weathering	SAE J1960 - ATLAS Accelerated testing using an Xenon Arc light source	AAMA 611-12, 10 year Florida Exposure with max Δ Delta E of 5.0	Δ Delta E of 1.12; 10,957 hrs [equivalent 5.5 years South Florida Exposure (20150625)
Craze Resistance	AAMA 611-12 - Thermal Crazing of the oxide layer	AAMA 611-12, oxide layer shall not craze less than 82°C (120°F)	No visible evidence of Thermal Crazing
Seal Quality	ASTM B680 - Acid Dissolution	AAMA 611-12, max weight loss shall be 40mg/dm^2 (2.6mg/in^2)	< 20mg/dm^2 (1.3mg/in^2)