CERTIFIED METAL FINISHING

Anodize Color & Finish Samples

Type II sulfuric and Type III hardcoat to MIL-PRF-862



A REFERENCE GUIDE BY CERTIFIED METAL FINISHING

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HOW TO READ THESE SAMPLES

Four variables decide the color you get

Alloy

Anodizing converts the aluminum itself, so the alloy sets the base tone. Samples here are 6061-T6 and 5052-H32. Designate alloy and temper on every order.

Thickness

Natural hardcoat gets darker as the coating builds. Type III is held to ±0.0002 in. Thickness is a controlled characteristic, so call it out on the drawing.

Dye (Class 2)

Class 1 is non dyed. Class 2 accepts dye into the open pores before sealing. Gold, red, blue and black are shown on both Type II and Type III.

Seal

Hot water seal stays clear. Nickel acetate seal locks dye in. Dichromate seal gives the olive drab tone with no dye at all.

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TYPE III HARDCOAT | CLASS 1 NON DYED | 6061-T6

Same alloy, same process, different shade



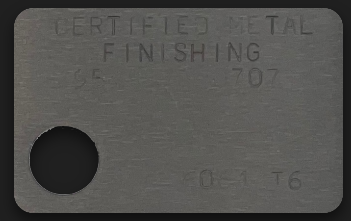
0.0005 in

coating thickness



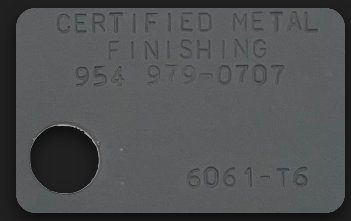
0.001 in

coating thickness



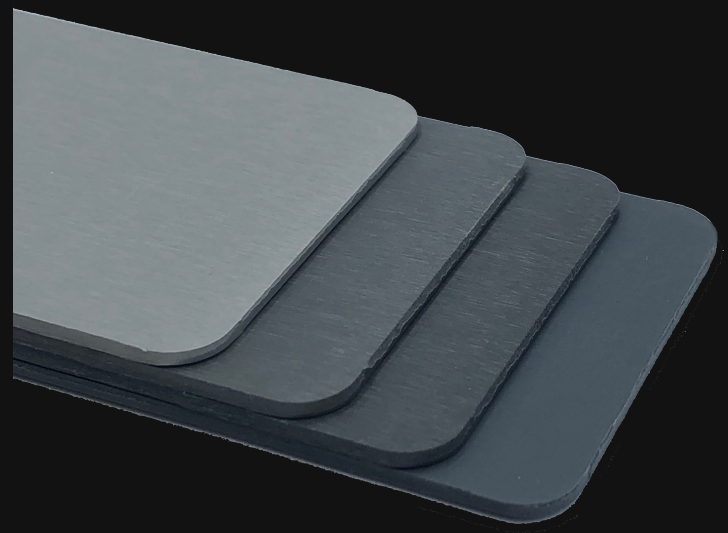
0.0015 in

coating thickness



0.002 in

coating thickness



What you are seeing

Half of a Type III coating penetrates into the base metal and half builds up on the surface. As the coating builds, the natural finish on 6061-T6 moves from light silver to dark charcoal.

Range

0.0005 to 0.0024 in, held to ±0.0002 in. Flash hardcoat runs 0.0005 to 0.0007 in.

Design note

Machine to allow for build up per surface, not plating build up. Internal dimensions close, external dimensions grow.

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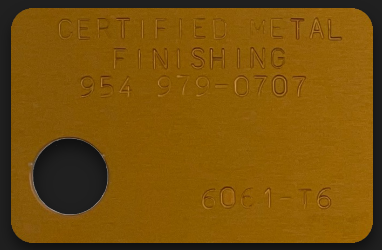
TYPE III HARDCOAT | 6061-T6

Hardcoat with Class 2 dye, plus dichromate seal



Black

Class 2 dye



Gold

Class 2 dye



Red

Class 2 dye



Blue

Class 2 dye



Olive drab

Dichromate seal, no dye

Dye does not change the hardness or thickness. Class 2 color is carried in the pores of the same Type III coating and sealed in place. For functional aerospace parts Class 1 is the usual call out; Class 2 is typically specified where color aids part identification. The olive drab sample is Class 1 hardcoat with a dichromate seal: the color comes from the seal, not the coating.

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TYPE II SULFURIC ACID ANODIZE | 5052-H32

Type II: seal and dye options on 5052-H32



Clear Class 1

Hot water seal, no dye



Olive drab Class 1

Dichromate seal, no dye



Gold Class 2

Nickel acetate seal



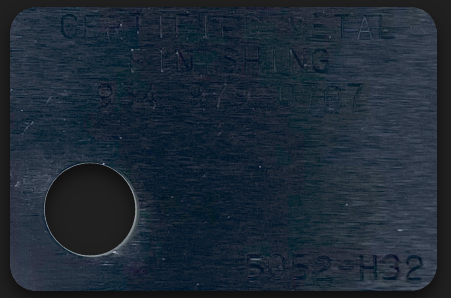
Blue Class 2

Nickel acetate seal



Red Class 2

Nickel acetate seal



Black Class 2

Nickel acetate seal



Type II at a glance

Coating thickness 0.0004 to 0.0007 in. The most common process for corrosion protection, paint adhesion and color identification without the dimensional impact of hardcoat.

The more porous Type II coating takes dye readily, which is why Type II colors read brighter than the same dye on hardcoat.

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We get the spec right before we machine

Our Planning Department has **100+ years of combined experience** – we'll confirm all details before parts hit the tank.

Nadcap Administered by PRI Aerospace Quality Systems Chemical Processing Accredited

AS9100D Certified ISO 9001

ITAR Compliant International Traffic in Arms Regulations

JCP Joint Certification Program Approved

SEND US YOUR DRAWING WITH:

- Anodize type: I, IB, II or III
- Class 1 (non dyed) or Class 2 (dyed, with color)
- Coating thickness and tolerance
- Seal: hot water, nickel acetate or dichromate
- Alloy and temper of every part on the order

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Samples are a reference, not a color standard. Final color depends on alloy, temper, thickness, dye and seal.