

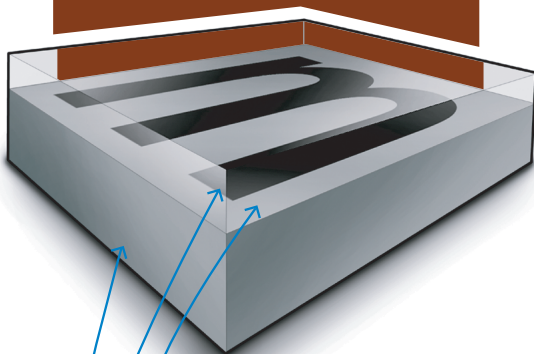


# Identification Plates introduction

## I DENTIFICATION | S I G N S



### metalphoto<sup>®</sup> Structural Drawing



**Anodic Layer**  
The glass-clear, sapphire-hard anodized layer resists chemicals, paint, abrasion and dirt.

**Sealed Image**  
Black graphics are metallic silver particles that hold up to extreme heat and sunlight exposure.

**Aluminum Layer**  
The rigid aluminum base will not peel, crack or delaminate.

Virtually every new product and assembly has a requirement to carry some identifying or other information. This requirement is usually fulfilled by attaching a plate or label to the product or assembly or by marking directly on its surface. Attached plates are known as identification plates, nameplates, tags, labels and placards among others.

This manual discusses issues relevant to the design of identification plates made of high performance anodized, photosensitized aluminum, hereinafter referred to as Metalphoto7.

Identification plates made of Metalphoto are clearly differentiated from those produced on other substrates in two important ways - first, Metalphoto identification plates are defined as the most durable of aluminum identification plates by GPI, the National Association of Graphic and Product Identification Manufacturers, Inc. Second, they offer the highest graphic resolution capability of any metallic substrate.

Physical characteristics of Metalphoto identification plates include an impervious, clear anodic surface and photographically produced silver metal graphics. This combination of features provides maximum sunlight and heat resistance and superior abrasion and chemical resistance.

Proper design of an identification plate requires attention to many details and options. This manual will help to guide you through some of the most important of those as they pertain to your application. Within this guide the word "shall" indicates a requirement and the word "should" indicates a recommendation.

(figure 1)























































# Metalphoto info & durability

## IDENTIFICATION SIGNS



Finishes, Sizes & Thicknesses				
	<b>Matte</b> Non-reflective with dull finish	<b>Satin</b> Semi-gloss medium reflective material	<b>#4</b> Brushed to resemble a stainless steel finish	<b>Gloss</b> Highly reflective
<b>Thicknesses</b>	.003", .005", .008" .012", .020", .032" .039", .063", .090" .125"	.003", .005", .008" .012", .020", .032" .039", .063", .090" .125"	.032", .063" .090", .125"	.020"

### Durability

Test Conditions		Finished Plate Characteristics				
<b>Results Key</b>    Excellent    Acceptable    Recommended		Black & Aluminum Image Intensified	Black on Gold* Background Image Intensified	Black & Aluminum Not Image Intensified	Black on Gold* Background Not Image Intensified	Additional Background or Selective Colors
Abrasion Resistance - Taber abraser with CS17 wheel, 1000 gram load for 7000 cycles.						
Solvent/Fuel Resistance - Extended immersion in alcohol, kerosene, JP-4 jet fuel, hydraulic fluid, MEK and other organic solvents at room temperature.						
Temperature Resistance - Oven tested for one hour		between 400EF and 750EF				
		between 750EF and 1000EF				
Ultraviolet Light Resistance - 400 hour weatherometer test. Recognized equivalent of 20 years outdoor exposure.						
Salt Spray/Immersion Resistance		Salt spray testing with a 5% NaCl solution at 90EF for 700 hours.				
		Immersed plates in sea water at ambient temperature for an extended period of time avoiding galvanic coupling.				
Chemical Resistance		Acid - 24 hour immersion at room temperature in 3% solutions of nitric acid, sulfuric acid and ferric chloride.				
		Base - 24 hour immersion at room temperature in 3% solution of Clorox.				
		Base - 24-hour immersion at room temperature in 3% solutions of sodium or ammonium hydroxide.				



20 Year Outdoor Durable

Resistant to Sunlight, Wind, Water and Saltwater

# IDENTIFICATION

# SIGNS



Characteristic	Result
Abrasion Resistance	No pronounced image loss, degradation or reduced readability after 7000 cycles of an abrading wheel.
Acid Corrosion	No deterioration or image degradation after 24 hours in 3% nitric acid.
Heat Resistance	No legibility loss or degradation when subjected to 1000EF.
Salt Spray Corrosion	No deleterious effect after a 720-hour salt spray (fog) test. 2,6 "very good" corrosion resistance after 113 days seawater exposure.
Weather Resistance Accelerated Light and	No pronounced deterioration of legibility after 400-hour carbon arc weatherometer exposure.
Aging Accelerated Oxygen	No discoloration or fading after 96 hours/300 psi/70EC oxygen bomb aging.
Stain Resistance	No black fading when plates are exposed to tincture of iodine.
Cleaning Resistance	No deleterious effect when tested with alkaline cleaners (MIL-C-87937 or equivalent) for aircraft surfaces.
Resistance Low Temperature	No deleterious effects or image fade after 1 hour at -50EF. No impairment of legibility upon exposure at -67EF.
Resistance Organic Solvent	No softening, staining or noticeable fade after 24-hour exposure to: JP-4 fuel, gasoline, mineral spirits, methyl ethyl ketone, turpentine, turbine and jet fuel, kerosene, xylol, acetone, toluol, heptane, trichlorethylene, MIL-H-5606 hydraulic fluid and MIL-L-7808 jet engine oil.
Fungus Resistance	Visual reading of "0" per ASTM-G21.
Thermal Shock	No deterioration after 3 cycles between -65EC and 125EC.
Moisture Resistance	No deterioration after 10 humidity cycles per MIL-STD-202, method 106.