# Horizons ISG Substrate Selection Guide

| | Long-Term+ Applications | | Mid-Term+ Applications | Indefinite Indoor Use | |
|---|---|---|---|---|---|
| | metalphoto® | DuraBlack® Laser Markable Aluminum | ID-MARK® | AlumaMark® Laser Markable Aluminum | AlumaJet® Ink Jet Printable Aluminum |
| | ***Environmental Performance*** | | | | |
| **Indoor Usage** | Excellent | Excellent | Excellent | Excellent | Excellent |
| **Outdoor Weather/UV[1]** | Excellent (20-50+ years) | Excellent (8 -10 years) | Good* (5-6 years) | Fair* (3-5 years) | Fair* (3-5 years) |
| **Abrasion Resistance[2]** | Excellent (7,000 cycles) | Good (4,000 cycles) | Fair* (700 cycles) | Good* (2,000 cycles) | Fair* (700 cycles) |
| **Temperature Resistance[3]** | Excellent (800°F) | Good (700°F) | Fair* (300°F) | Good* (550°F) | Fair* (180°F) |
| **Salt Spray Resistance[4]** | Excellent (as per ASTM B117) | Good (as per ASTM B117) | Excellent* (as per ASTM B117) | Excellent* (as per ASTM B117) | Good* (as per ASTM B117) |
| **Fluid Resistance[5]** | Excellent (see conditions below) | Good (see conditions below) | Fair* (see conditions below) | Excellent* (see conditions below) | Fair* (see conditions below) |
| | ***Production Characteristics*** | | | | |
| **Imaging Technology** | Photographic | $CO_2$ Laser | Photographic | $CO_2$ Laser | Ink Jet |
| **Production Throughput** | Excellent | Fair | Good | Fair | Good |
| | ***Appearance & Finish*** | | | | |
| **Color Options** | Monochrome | Monochrome | Monochrome | Monochrome | CMYK |
| **Resolution** | Excellent | Good | Excellent | Good | Excellent |
| **Material** | Photosensitive Anodized Aluminum | Coated Anodized Aluminum | Coated Anodized Aluminum or Polyester | Coated Anodized Aluminum | Coated Anodized Aluminum |
| **Sizes (inches)** | 10x12, 12x20, 20x24, 20x40 & 24x40 | 10x12, 12x20 & 20x24 | 10x12 & 12x20 | 10x12 & 12x20 | 8.5x11, 8.3x11.7 (A4), 11.7x16.5 (A3) & 20x24 |
| **Thicknesses (inches)** | .003, .005, .008, .012, .020, .032, .063, .090 & .125 | .005 & .020 | .006, .007, .014 & .025 | .005 & .020 | .005, .012 & .020 |
| **Click For Information On:** | Metalphoto® | DuraBlack™ | ID-Mark® | AlumaMark® | AlumaJet® |

1. **Weather/UV Stability**: estimated based on a combination of accelerated weather testing with Q-Sun Xe-3/HS test chamber and actual outdoor weathering.
2. **Abrasion Resistance**: estimated based on laboratory tests with Taber Abraser with a CS17 wheel and a 1000 gram load. Evaluation will be performed every 1000 cycles.
3. **No legibility loss or surface degradation when exposed to temperatures up to 750°F for one hour with image-intensified Metalphoto (non-intensified Metalphoto achieves similar results at 400°F). Heat resistance of up to 1,000°F is achievable. Please contact Horizons ISG to learn more.**
4. **Salt Spray Resistance**: estimate based on salt fog test per ASTM B117. Evaluation performed after 14 and 30 days exposure (Excellent >30 days, Good = 30 days).
5. **Fluid Resistance**: a variety of industrial fluids and laboratory chemicals tested. The industrial fluids were selected from those used in Method 504.1 of MIL-STD-810G, as well as common automotive fluids. Samples were immersed in the fluids at the test temperature and evaluated every 24 hours for a week.

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*Products evaluated with 3M™ Acrylate Overlaminating Film 7735FL. Consult Horizons for the recommended over-laminate or topcoat for your application.
This technical information and data should be considered representative or typical only and should not be used for specification purposes.
Horizons ISG does not warrant performance of its materials in any environment.

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