

**TECHNICAL BULLETIN**  
**Mitsubishi Chemical America, Inc.**  
**6/14/04**

**Panel Visual Consistency**

Each of our product types has special characteristics that can affect the visual consistency from lot to lot and even from panel to panel. It is important that these characteristics be considered when planning how to use and to install the ALPOLIC panels.

**Solid Colors:** Solid colors present the best case for panel to panel and lot to lot consistency. The industry standard for allowable variation is Delta E 1.0 or less in a hunter color space. Brighter colors, such as reds, yellows, blues, etc., which tend to be less opaque and which depend somewhat on film build (paint thickness) to achieve their appearance, will be more likely to exhibit more variation than subdued colors

**Metallics:** The industry standard for color variation with metallic is Delta E 2.5 or less, much larger than the standard for solid colors. In coating the flakes will tend to align in one direction (flop). This greatly increases the directionality of the panel's appearance. For these reasons the panels must be installed with the directional arrows all aligned in the same direction and lots should not be mixed on a building face without first contacting MCA CMD for a confirmation that the lots are visually similar enough to be used together. The larger the flake size the greater the likelihood that the lots will not be able to be mixed.

**Micas:** The Mica finishes provide a metallic like appearance with a two pass paint system. Like the metallics the micas utilize flakes to give the flashy appearance, therefore, like the metallics, the mica finishes are directional and lots should not be mixed on a building face without first contacting MCA CMD for a confirmation that the lots are visually similar.

**Anodized:** The American Architectural Manufacturer's Association (AAMA) has issued the "Voluntary Specification for Anodized Architectural Aluminum" AAMA611-98. In this specification the maximum allowable color variation is established as Delta E CMC 5.0 or less for anodized materials produced from one coil. Delta E CMC is a corrected color space and has been selected by AAMA to better correlate with the visual appearance. The specification does not provide a limit for variation seen between materials for different coils. In anodized finishes, especially clear anodized, the make up of the metal can greatly affect the visual appearance. Small variations in the alloy's constituents can have a large visual impact. For this reason care must be taken to use only one lot of anodized product on a building face. The anodized finish also has directionality so the alignment of the directional arrows is important

**Brushed Smoke Aluminum (BSA):** This finish is composed of a thin anodized layer and a Lumiflon clear coat applied over a brushed aluminum surface. As with the metallics and the micas the color variation standard is Delta E 2.5 or less and due to the brush pattern the panels are definitely directional in appearance. BSA also shares the attributes of the anodized finishes therefore, lots should not be mixed on a building face and the directional arrows must be aligned.

**Natural Metals:** ALPOLIC offers panels with natural metal skins, Copper, Stainless Steel and Titanium. Since there is no coating or surface treatment, the appearance of the panel is totally reliant on the metal used. The aging characteristics and visual appearance may vary from coil to coil due to slight differences in the metal, location or orientation of the installed panels and the local environment. As with metallics, BSA and Anodized finishes, it is recommended that lots not be mixed on a building face and the directional arrows be aligned. Also with some metals such as Copper and Titanium the surface appearance will change with time and the environment.