

## COATED METALS GROUP



**This bulletin provides an overview of Natural Matte performance, including performance relative to other paint.**

- Natural Matte features a Silicon Modified Polyester (SMP) paint system with innovative light-disruptive paint technology that offers exceptionally low levels of sheen and gloss.
- Natural Matte offers a 40-year film integrity, 30-year color fade, and 30-year chalk warranty that is comparable to the warranty offered for many high-performance paint systems.
- In many environments the added performance of a PVDF system over Natural Matte may not be required, especially given the low gloss and low color intensity of the Natural Matte product.
- Natural Matte offers excellent corrosion protection due to its ZINCALUME® metallic coating.
- Natural Matte offers the same 'cool' pigmentation properties found in other paint systems.
- The Natural Matte finish has no impact on fire, impact resistance, wind uplift, or other environmental resistance qualities inherent to metal.

### Overview

Natural Matte features a Silicon Modified Polyester (SMP) paint system with innovative light-disruptive paint technology that offers unprecedented low levels of sheen and gloss. Unlike other low gloss products that feature additives that dilute color, the ultra-matte technology of Natural Matte reduces unwanted sheen and glare while delivering rich color. Overall, SMP coatings feature a blend of polyester, silicone intermediates, and ceramic pigments, resulting in rich color and excellent performance.

PVDF or polyvinylidene fluoride coatings feature a carbon-fluorine bond. This chemical structure provides exceptional performance to resist the effects of UV, chemical, and extreme environmental damage. The relative performance of alternatives, including SMP paint systems, has improved considerably over the last two decades. In extreme settings or to meet specific project objectives, the added performance of a PVDF system may be required. However, in many environments Natural Matte will provide an ideal solution.

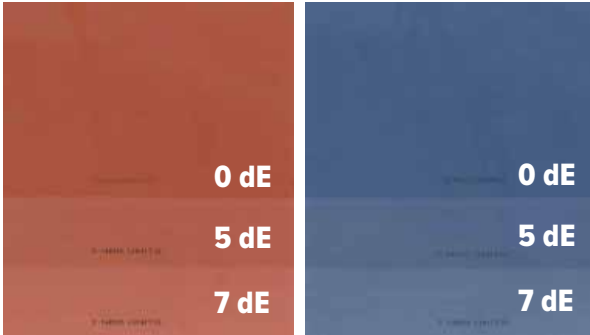
For most environments, Natural Matte offers a 40-year film integrity, 30-year color fade, and 30-year chalk warranty. These warranty elements cover:

- A 40-year warranty that the paint finish won't crack, peel, or chip
- A 30-year warranty that the color will not excessively fade outside of a prescribed range
- A 30-year warranty that the resin of the paint won't degrade at the surface, resulting in lost particles taking on a white appearance known as chalking. This is typically due to UV exposure.

Color change is assessed based on its variance to a base state when new. Delta E (dE or NBS unit) is a color difference metric used to represent the total color change between two colors. The average human eye can detect a change in color between 0.5 to 1.0 dE. Normal color fade is usually difficult to identify due to its gradual and consistent nature over time. (continued over page)

# Natural Matte Performance Considerations

For reference, the Ultra Clad PVDF warranty coverage is 35-year film integrity, 30-year color fade and 30-year chalking warranty. Both warranties offer the same color fade provisions, that the color will not change color more than 5 dE units (NBS) for vertical surfaces (wall) and 7 for non-vertical surfaces (roof).



Color change between base state, 5 dE and 7 dE.

## Long Term Gloss and Color Retention

A common reason for the specification of PVDF paint systems is the consistency in which they retain gloss and color vibrancy over the installed life of the product. Environmental factors such as UV exposure, pollution, and chemicals in the atmosphere influence gloss retention. This can be important for commercial installations featuring glossy and vibrant colors. These vibrant colors may promote corporate image, brand resonance, or community standing.

Natural Matte is not a vibrant, glossy product but features ultra-low gloss and a palette of earthy, muted tones. In Natural Matte applications, the improved gloss retention and color vibrancy of PVDF is not an important performance attribute.



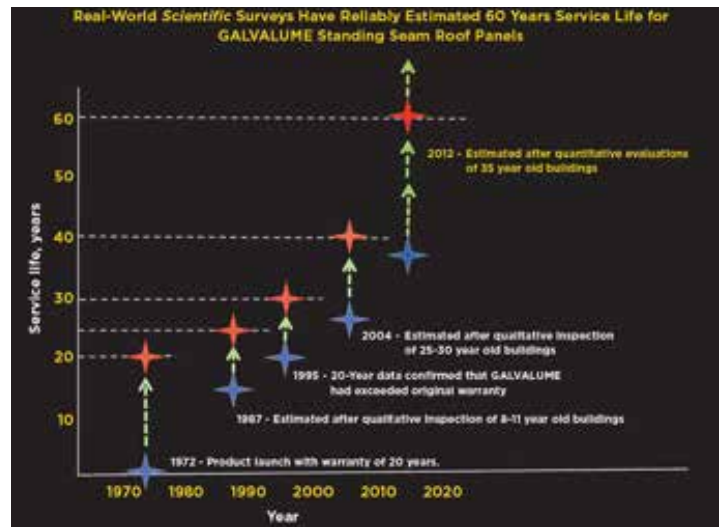
Regular gloss product compared to Natural Matte.

Over several decades, PVDF systems will exhibit a slower rate of color fade. However, Natural Matte's formulation uses earthier, inorganic pigments with greater resistance to fade, ensures that color retention is still very good long term.

## Corrosion and Chemical Resistance

For pre-painted steel products, the fundamental protective barrier against corrosion is the metallic coating applied to the steel before it is painted. Natural Matte features a ZINCALUME® metallic coating.

ZINCALUME® is a protective barrier that helps resist and prevent the spread of corrosion and extends the lifespan of metal roofs and walls. Also known by the trade name Galvalume®, this coating includes a specialty mix of zinc and aluminum. Zinc is a very effective barrier against corrosion, but it is sacrificial. Zinc corrodes preferentially to steel but will be gradually consumed over time. Aluminum provides an inherent protective barrier compared to zinc. This protective barrier prevents the spread of corrosion and slows the consumption of this zinc, extending the service life of the metal. This coating is proving to have an installed product lifespan of more than 50 years in most environments.



The expanded service life of ZINCALUME based on long term testing performed by the ZAC association. Note this testing is based on unpainted products. Painted products extend this service life further.

For extreme environments, a PVDF paint system can provide additional corrosion protection and chemical resistance. These environments include industrial settings with chemical and smoke flue or marine environments within 1000 feet of breaking surf. Always consult your product manufacturer when selecting a metal product in an extreme environment as additional paint modifications, such as clear coats or thicker primers, may be required.

## SRI, Cool Pigmentation, and Solar Reflectivity

Natural Matte features the same 'cool' pigmentation as those found in other systems, including PVDF systems. Cool pigments reflect the heat from the sun created by Near Infrared Radiation (NIR) which is invisible to the eye. Cool pigmentation enables consumers to select from a broad range of colors, including darker colors, yet still have a finish that reflects heat, reduces heat absorption, and lowers building cooling costs.

Urban areas absorb and re-emit heat from the sun more than natural landscapes. This phenomenon, known as the heat island effect, results in daytime temperatures in urban areas about 1–7°F higher than in outlying areas and nighttime temperatures about 2–5°F higher. Cool roofs can reduce this effect.

The Solar Reflectance Index (SRI) compares the reflectivity effectiveness of different colors. Natural Matte offers SRI values comparable to standard gloss cool SMP and PVDF products.

## Environmental Performance Credentials

The environmental performance capabilities of painted metal rely on the panel type and the thickness of the metal rather than the painted finish. Important performance considerations include:

**Fire** - Metal is a non-combustible material that can reduce the spread of fire including from embers or sparks. The most widely used performance rating for fire resistance is the Class A Fire Rating. This classification assesses the rate of fire spread according to a pre-developed ASTM test. For roofing, a Class A rating is based on the entire roof system, including the roof panel, insulation, underlayment, and roof deck material. Metal contributes to this rating, and the Natural Matte finish has no impact on this performance.

**Impact Resistance** - Metal roofing is resistant to extreme weather conditions such as wind and hail. Many metal roofs are class 4 impact resistance, the highest tested resistance to impact damage. A paint finish, such as Natural Matte, does not influence the impact rating. In the event that a metal surface is dented or lightly damaged, the distortion of reflected light can make this damage more prominent. An advantage of Natural Matte is that its less reflective finish can conceal minor surface damage more effectively.

**Wind, and Other Environmental Considerations** - Some commercial engineered panel systems, such as the CMG Ultra-Span panel, are tested to exceed extreme wind uplift, air infiltration, and water infiltration requirements. These products can be ideal for hurricane-prone areas such as Florida. The Natural Matte finish has no impact on the ability to withstand these test requirements.

## Other Performance Credentials Inherent to Metal and Natural Matte

**Rooftop Grip and Snow Retention** - Metal roofing is a relatively low-friction surface and can be outfitted with snow guards to reduce the risk of rooftop avalanches. The Natural Matte finish does not impact snow retention properties. It has been noted to be slightly grippier to walk on by rooftop installers.

**Freeze-Thaw Cycle** - Metal is a non-porous material and can withstand freeze and thaw cycles without damage, degradation, or deformation, making it ideal for snowy environments. The Natural Matte finish has no impact on the freeze-thaw cycle attributes of pre-painted metal.

**Resistance to Staining, or Organic Material Growth** - Another attribute of being non-porous is that metal will resist the accumulation of dirt and organic matter. Accumulated organic matter can result in varied discoloration and permanent staining. The Natural Matte finish offers the same performance as regular pre-painted metal at resisting this accumulation. For best long-term results, it is recommended to rinse any metal surface periodically.

**For more product information and samples, visit:**

**[www.cmgmetals.com/product/natural-matte](http://www.cmgmetals.com/product/natural-matte)**

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