

## PIGMENTATION

### Pigment's Role

Pigmentation is one of the three major components of a coating system. Coatings are made up of pigments, resins and solvents. Pigments provide the coating with color while hiding the primer and substrate. Resins bind the coating to the substrate and provide durability and weatherability properties. Solvents thin the consistency of the mixture so that it can be properly applied. During the curing process, solvents evaporate while the resin system adheres to the substrate.

Color can be the most important design element to an architectural project, so it is essential that the right pigments are chosen. Not only does color give a design beautiful aesthetic properties, but it also serves the practical function of protecting the substrate from weathering and corrosion.

The right combination of resins and pigments is essential to coating performance to ensure protection against chalk and fade. No matter how well a coating is made, certain colors are more affected by the outside environment than others, especially bright colors like yellows, oranges, and reds. When selecting a color, take into consideration UV exposure and end-use. Color is also a determinant of warranty length. Color warranties are based on the percentage of organic versus inorganic pigments used to create the final color.



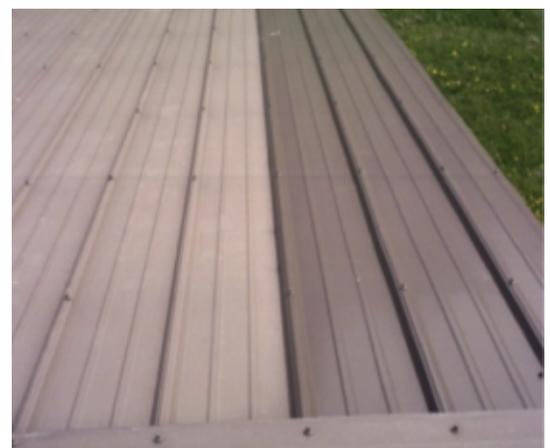
PVDF    Acrylic    Polyester    PVDF    Silicone Polyester

### Chalk & Fade

Chalking is caused by a degradation of the resin system at the surface of the finish. Resin degradation is caused predominantly by the harmful Ultra Violet (UV) rays of the sun. Acid rain and pollution, salt spray, and abrasion by airborne particulates are other contributors to resin degradation. As the resin system breaks down, resin particles at the surface lose adhesion, and take on a white appearance. This white powder, or chalk, can be scrubbed off or mechanically buffed away.

The resin system in Valspar's high-performance finish, Fluropon®, is made up of 70% PVDF resin. The carbon-fluorine bond, which gives PVDF resin based coatings their stubborn resistance to chalking and erosion as well as their resistance to harsh airborne industrial and atmospheric pollutants, is one of the strongest chemical bonds known to man. While the high performance resins work hard to prevent chalking, pigments are important to guard against fading.

Fading occurs when substances in the environment attack the pigment of the paint and cause the color to change. Fade is caused by a breakdown of the pigment itself, measured in Delta E (DE) variations. Color fade in the paint system often manifests itself as a lightening of the color, but not all pigments become lighter over time, some darken or change to an entirely different color.



Silicone Polyester    Fluropolymer

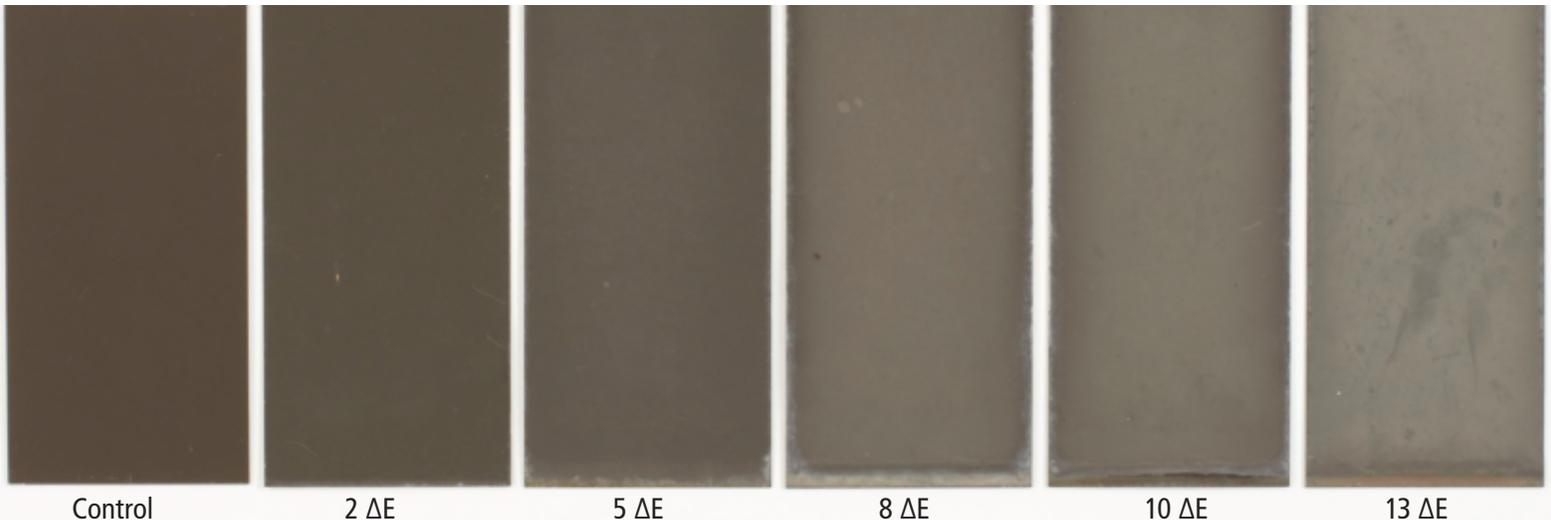
# Organic vs. Inorganic Pigments

A pigment changes the color of reflected or transmitted light as a result of wavelength-selective absorption. Its role must be for both coloration and function. Pigments are either inorganic or organic in composition. Sometimes both types must be used to achieve a certain shade or color.

Inorganic, also called ceramic, pigments are manufactured from mineral compounds that are mainly complex metal oxides and have superior color stability, heat, and chemical resistance. Colors coming from naturally occurring inorganic pigment are less bright such as beiges, browns, tans and other earth tones. Ceramic pigments are known for their excellence weatherability and resistance to color change.

Organic pigments are carbon based and are often made from petroleum compounds, but they have a low resistance to fade and low heat resistance. They allow UV and oxygen to penetrate, breaking the chemical bonds, and have less hiding power. Colors from organic pigments have very bright, vivid appearance. These are sometimes known as cleaner or purer colors.

## Exposed at 45 Degrees South Florida



\*\*\*The images shown is not a representation of Valspar's coating. This is a visual representation of various Delta E differences.

# High Performance

With over 50 years of ongoing ceramic pigmentation history, Valspar understands the importance of combining the right pigmentation and resin systems to create the best performing coating possible. When creating an architectural design, you need your masterpiece to endure the test of time. Our high-performance coatings ensure maximum color retention and resistance to weathering and aging.

Valspar understands the important role that color plays in architectural design. We are color experts, knowledgeable in color trends, color formulation and color services. Formulating the perfect color demands expertise, laboratory resources and testing proficiencies found nowhere else in the industry. We have a full palette of colors from which to choose or allow us to put our advanced color matching technology to work for you to create your lasting impression.

No matter what color you are trying to achieve, Valspar has a strong tradition of innovation in the development of color, as well as dedicated resources to assist our clients in making the right selection. Protection of the architect's vision matters above all. Valspar coatings will make sure your vision ages beautifully.