

Color & Fading

Technical Bulletin TB-13

COLOR & FADING

Color fade is a challenge for all paint manufacturers. Color retention and overall durability in architectural paints can be complex. When bright, deep, or vibrant colors are chosen all paint manufacturers are challenged to find formulations that will endure, regardless of the brand.

Many factors play a key role in overall color durability. Once you understand how colors are “built” you can best select the perfect one to meet your project needs.

POINTS TO CONSIDER WHEN CHOOSING PAINT COLORS

- Architectural paints are manufactured in white or clear bases, then tinted using machine colorants to achieve a desired color.
- Colors are created with a tint formula, which is the process of blending different amounts of different colorants and mixing them into the product line’s appropriate tint base.
- Regardless of the brand, all paint manufacturers are challenged to create tint formulas that are durable, especially with bright, deep, or vibrant colors.
- There are two basic types of colorant: organic (derived from living matter) and inorganic (compounds not containing carbon.)
- Bright, vibrant colors are less durable and fade the most because they contain primarily organic colorants.
- Earth-toned colors are more durable and fade the least because they contain primarily inorganic colorants.
- The more colorant required to create a color, the more likely it is to fade.

In areas where fade resistance is a top priority, consult with a Florida Paints representative. We offer certain types of paint products and systems which can extend the life of fade prone colors.



COLOR TINTING

Below are the colorants we use in our architectural products. They have been rated for their lightfastness in southern exposure (lightfastness is a property of a colorant that describes how resistant to fading it is when exposed to light). This value is assigned a number from one to five.

Organic Colorants



Inorganic Colorants



Lightfastness Rating (1-excellent, 2-very good, 3-fair, 4-poor, 5-very poor) based on modified ASTM D4303.

WHAT IS FADING?

Fading is defined as to lose freshness, strength, intensity or brilliance. In the case of paint, the color is fading and becoming lighter and or duller in appearance. There are several primary reasons that the color in paint fades:

1. **Weather conditions:** temperature, precipitation, salt spray and UV light exposure will affect the performance of all exterior coatings, especially color longevity.
2. **Organic pigments:** organic pigments, yellow, red, blue, green and violet are more susceptible to color fade than inorganic pigments were used in the formulation.
3. **Low Light Reflectance Value (LRV):** is a numerical value assigned to the amount of light and heat a color will reflect on a scale of 0 – 100 with black ranking a zero and absorbing the most and pure white a value of 100 and reflecting the most. In addition, dark colors (low LRV) require more tint and will absorb more UV light and heat that will accelerate the degradation of the paint film and cause chalking and fading.
4. **Incorrect type of paint:** Interior paint used outside, or an exterior coating used on the wrong substrate can affect the performance of the coating.
5. **Resin type:** different resins have more or less UV stability and resistance to fading. Alkyd, oil based, epoxy and styrene acrylic resins fade very quickly, whereas urethane and 100% acrylic resins are more fade resistant.



6. **Low quality paint:** lower quality paints use less resin and/or pigments that will reduce the performance of the paint film.
7. **Improper surface preparation:** failure to remove contaminants, especially highly alkali salts can damage the paint film and cause premature discoloration or “bleaching-out.”
8. **Improper paint application:** inadequate amount of paint will reduce the durability and performance of the coating leading to premature fading.
9. **External chemical or pollutant exposure:** chlorine bleach, pesticides, herbicides, fertilizers and salt spray are common chemicals that can damage a paint film
10. **Inadequate maintenance:** regular maintenance of your building or structure is required to remove the buildup of dirt, mold, mildew, grease, grime, chemicals, salts and any number of other contaminants can damage the paint film and cause discoloration.
11. **A combination of all of the above.**

CONCLUSIONS

Color fade is an ongoing problem for all paint companies, but if care is taken it can be reduced. Below are the key considerations to help reduce the problem of color fade, consult a Florida Paints representative for assistance in this process.

Paint selection	Use a high quality exterior 100% acrylic paints like Legacy or Seaside. Higher sheen coatings will stay cleaner than flat coatings but will accentuate any imperfections in the substrate.
Proper application	Ensure the substrate is properly prepared before painting and enough paint is applied per the product data sheet or specification.
Color Selection	Lighter colors will fade less than darker colors. Utilize the FP15 Color Performance Guide to choose colors with a low fade rating avoiding colors that use organic pigments. If the color must have organic pigments, consider top coating with Florida Paints SunScreen 8920 UV Resistant Clear Coat.
Maintenance	Set up a regular maintenance schedule to wash your building once or twice a year to keep it looking clean and fresh. This will help prevent mildew growth, wash away any oxidized paint and help remove any pesticides or herbicides that may be present from lawn and garden maintenance.

FOR MORE INFORMATION

If you need answers to questions about paint-related problems, please visit our website www.floridapaints.com or call our corporate office at (407) 986.1000.

