Technical Bulletin

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COLOR MATCHING

Color consistency is one of the most visible indicators of quality in an architectural coating project. Whether paint is applied across a single elevation, multiple construction phases, or an entire commercial development, even small variations in color can become highly noticeable once the coating is installed. These differences can lead to project delays, additional labor, and disputes regarding whether the installed color meets expectations.

Achieving consistent color from batch to batch and order to order involves more than simply selecting the correct color name. It requires controlled manufacturing practices, disciplined tinting procedures, accurate reference standards, and proper verification before large-scale application begins. While Vista Paint maintains rigorous color-matching protocols and quality control procedures, color should always be verified prior to application. Final color acceptance must be based on the approved project standard and evaluated under the lighting conditions in which the coating will ultimately be viewed

Why Color Consistency Matters

Architectural coatings are frequently applied over large, continuous surfaces where even minor color variation can become highly visible. This is particularly common on projects involving phased construction schedules, multiple material orders, different coating products, or varying sheen levels.

Color can also appear to change depending on lighting conditions, film thickness, surface porosity, and sheen. For example, the same color may appear darker or lighter depending on the texture of the substrate or the gloss level of the coating. Because of these variables, a color that appears acceptable at the time of purchase may look noticeably different once installed.

For this reason, maintaining color consistency must be treated as a managed process that begins during manufacturing and continues through approval, ordering, and application in the field.

Establishing Color Approval and Reference Standards

One of the most effective ways to control color on a project is to establish a clear approval process before production work begins. A color should never be assumed correct based solely on a fan deck chip, digital image, or verbal description. Instead, the coating should be verified using an actual sample of the paint product that will be applied.

A widely accepted method for this verification is the use of drawdowns. A drawdown is a controlled sample of paint applied to a card at a uniform film thickness. Once dry, the drawdown provides a much more accurate representation of the final installed color than a printed chip.

After review, the drawdown should be approved and signed by the appropriate project stakeholders, such as the owner, architect, designer, general contractor, and painting contractor. This approved drawdown should then be retained as the official project color standard.

Maintaining a physical reference standard ensures that everyone involved in the project is evaluating color against the same benchmark. It also provides a consistent reference when comparing additional material orders during later stages of the project.

Evaluating Color Under Real-World Lighting Conditions

Color should always be evaluated under the lighting conditions in which it will ultimately be viewed. A color that appears correct under store lighting or indoor lighting may look noticeably different once installed in its final environment.

Exterior coatings should ideally be reviewed in natural daylight, while interior coatings should be evaluated under the intended installed lighting system, such as LED, fluorescent, incandescent, or mixed lighting environments. Evaluating samples under these real-world conditions helps prevent unexpected color shifts after installation and improves the reliability of the approval process.

Manufacturing and Color Control

Maintaining color consistency from batch to batch requires disciplined manufacturing practices and careful project planning. Standardized raw materials, controlled tinting procedures, and accurate formula management all play a critical role. Equally important is the way material is ordered, produced, and handled throughout the course of a project.

Vista Paint maintains strict quality control protocols to ensure that produced batches remain within tightly controlled color tolerances before they are released for packaging. One of the key tools used in modern color measurement is delta E (ΔE).

Delta E is a numerical way to describe how different two colors appear to the human eye. In architectural paint matching, it helps quantify how close a mixed or matched paint color is to the target color. A lower delta E value means the colors are extremely close—often indistinguishable in real-world conditions—while a higher delta E value indicates a more noticeable difference. In simple terms, the smaller the delta E value, the better the color match (Figure 1).

Vista Paint maintains low delta E requirements for color matches before a batch is released for filling. This helps ensure that each production batch remains within tight color tolerances relative to the approved standard, improving consistency across multiple orders.

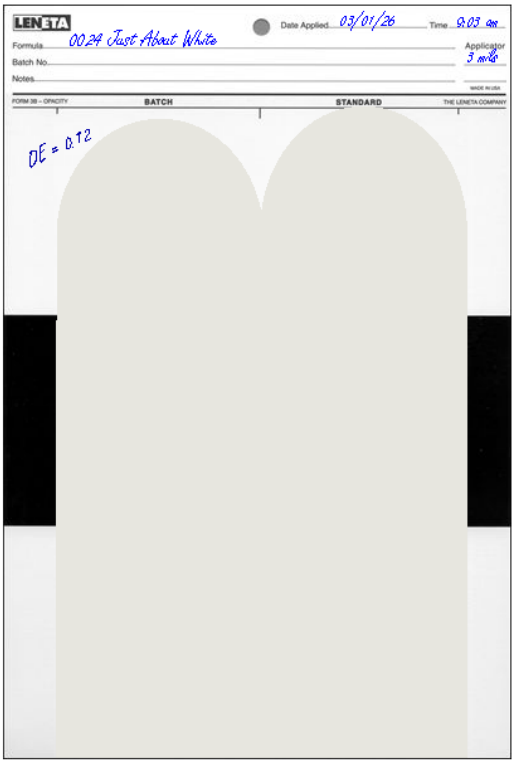

Figure 1

Project Planning and Application Considerations

Project planning also plays an important role in maintaining color uniformity. When possible, sufficient material should be ordered in a coordinated manner so that large areas can be completed using paint from the same batch. When multiple batches are required, intermixing containers during application can help minimize the visibility of minor variations.

Maintaining the same product line and sheen level across the application area is also critical. Even when colors are matched correctly, coatings formulated with different resin systems or gloss levels can appear noticeably different when placed side by side.

For large projects extending over several months, factory tinting can provide an additional level of color control. Vista Paint is one of the few remaining paint manufacturers to offer factory tinting services, which are performed under tightly controlled conditions and subject to stricter quality standards than typical store tinting. This added level of control can significantly improve consistency for multi-phase commercial projects.

Vista Paint also supports color continuity through its dot card system, used in Vista Paint stores as part of the company's color control program (Figure 2). Dot cards serve as physical color references that confirm a formula continues to reproduce the intended color standard consistently over time. These reference samples provide an additional checkpoint in the color verification process and help maintain repeatability when additional material is required weeks or months after the original order.

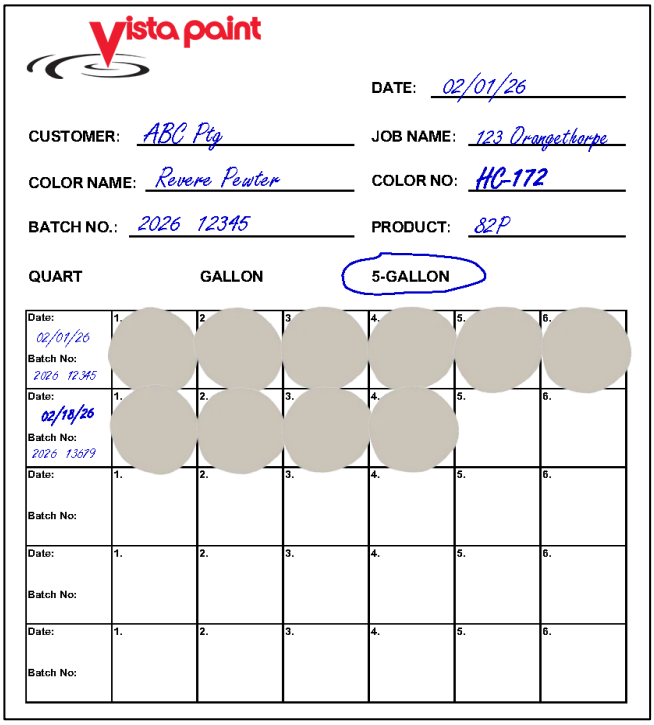

Figure 2

Maintaining color consistency from batch to batch and from order to order requires both disciplined manufacturing practices and careful project planning. Standardized raw materials, controlled tinting procedures, and accurate formula management all play an important role, but so does the way material is ordered, produced, and handled throughout the course of a project. When possible, projects requiring strict color uniformity should be planned so that sufficient material is procured in a coordinated manner. Intermixing containers during application can also help minimize the visibility of minor differences when material from different batches is used.

Guidelines When Matching Competitor Colors or Physical Samples

Color matching can become more complex when attempting to replicate colors from other manufacturers or when matching an existing painted surface. Following several best practices can improve the likelihood of achieving an accurate match.

Both the color name and color number, along with the manufacturer associated with the color, should always be provided. Color names are not standardized across the paint industry, and many manufacturers use identical names for different colors. A common example is "Swiss Coffee," which exists in several color collections but varies significantly between manufacturers. Providing the manufacturer and color number helps ensure the correct color reference is used.

When matching a physical color sample, the most reliable method is to provide a wet paint sample whenever possible. A wet sample represents the actual material and pigment composition used in the original coating and provides the most accurate reference for color analysis.

Dry samples, drawdowns, or color chips may still be used, but they may not perfectly represent the original coating. Printed chips may differ from actual paint films, and aged coatings may have faded or weathered over time. For these reasons, a wet sample generally provides the most reliable starting point for color matching.

Key Takeaways

Color consistency in architectural coatings is the result of coordinated effort between manufacturers, distributors, contractors, and project stakeholders. By establishing clear color approval procedures, evaluating samples under real-world lighting conditions, and maintaining strict manufacturing quality controls, the likelihood of noticeable color variation can be greatly reduced.

Proper planning, verification, and communication throughout the project help ensure that the finished coating system delivers the uniform appearance expected by designers, owners, and contractors alike.

That final verification helps ensure that the approved color is the color that ends up on the building.