
Drywall Finishing— Critical Lighting

By Robert J. Lindegard

A designer may develop a wall or ceiling surface to have a glossy, smooth or textured surface for a particular design effect. It might be in a long corridor, a lobby ceiling with full-height glass exterior walls, or perhaps a special wall with light “washing” the surface. Whatever the usage, a combination of gloss enamel and critical lighting often results in a perceived appearance that is not acceptable to the user, even under the best of workmanship.

Light, texture and sheen (gloss) are key factors affecting the appearance of many surfaces, including gypsum drywall. With proper care in framing, gypsum panel application and joint treatment, the resulting finished surfaces are typically excellent.

It must be realized, however, that conventionally finished gypsum panels do not provide a perfectly true and even surface. Because the joints and fasteners must be concealed with fill and finish coats of joint compound, it is impossible to achieve a finished surface that is a perfectly flat plane. Instead, the joints and fasteners are usually finished with

graduated arcs that can result in distinct shadows in critical light.

There is a difference between tapered edges and butt or end joints. Long edges are tapered or recessed to allow joints to be finished nearly level with the plane of the panels. Butt ends of gypsum panels are flat and have no recess or taper; therefore, the joint compound and reinforcing tape lie above the plane of the panel and are more pronounced.

Where natural or artificial lighting hits the wall or ceiling at an oblique

angle and the surface is finished with a high gloss coating, shadows occur that accentuate even the slightest surface variations across the face of the panels, in treated joints, over fastener heads and at accessory beads.

Besides the problems associated with uneven surfaces, there is also another condition that is aggravated by critical lighting. Joint banding, or photographing, is a condition in which areas of a drywall surface that have been treated with joint compound show through with color and sheen variations after painting. This condition is caused by the differences in surface texture and suction, or porosity, characteristics of the finished joint compound and drywall face paper. Even when a surface is meticulously treated and apparently as smooth as possible, such variation in color and sheen can be noticeable and can detract from the quality of the finished job.

Sanding the face paper around joint-treated areas and fastener heads further accentuates the condition. Sanding raises the nap of the paper to create yet

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another texture variation across the face of the finished drywall surface. For best results when sanding, the following are suggested techniques: (1) finish the joint compound so that little or no sanding is needed; (2) use sanding paper or mesh cloth with grit as fine as possible; (3) avoid scuffing the gypsum panel face paper during sanding; and (4) remove all sanding dust before decorating.

The best technique for minimizing perceived surface defects under critical lighting conditions involves the application of a skim coat of joint compound over the entire surface after conventional finishing of all drywall joints and fasteners. Skim coating will fill imperfections in joint work, smooth the paper texture, and provide a uniform surface for decorating.

Whether or not skim coating is done, the use of a special prime coat paint, formulated specifically to equalize both porosity and surface texture differences, is recommended. Such an application is not intended to provide a film that seals the substrate surface. Instead, it minimizes the porosity differences by providing a base that equalizes the absorption rate variations between the drywall face paper and the finished joint compound when painted.

The degree to which a surface appears to be flat is determined largely by the conditions under which it was viewed. Waves and depressions become even more apparent on a very smooth surface which has high reflectivity—e.g., glossy paints. The level of gypsum board finishing can affect the perceived acceptability of the finally decorated surface. A consensus document, *Recommended Specifications: Levels of Gypsum Board Finish*, provides a guide of five levels of finish to specification writers, architects, contractors, and building owners to describe the finish of walls and ceilings prior to final decoration. The document is cosponsored by the Association of the Wall and Ceiling Industries-International (AWCI), Ceiling & Interior Systems Construction Association (CISCA), Gypsum Association (GA), and Painting and Decorating Contractors of America (PDCA). The five levels range from basic tape embedment to the most severe conditions affecting the appearance of the drywall finish. According to the document, Level 5 is described as follows:

“This level of finish is recommended where gloss, semi-gloss, enamel or non-textured flat paints are specified or where severe lighting conditions occur.

“This highest quality finish is the most effective method to provide a uniform surface and minimize the possibility of joint photographing and of fasteners showing through the final decoration”

References

ASTM C840, “Standard Specification for Application and Finish of Gypsum Board”

GA 216, “Recommended Specifications for the Application and Finishing of Gypsum Board”

U.S. Gypsum J-510, “Skim Coating in Drywall Finishing”

U.S. Gypsum J-548, “Sheetrock First Coat”