

# AMERICAN PAINTING CONTRACTOR

Reprint, January 1995

## In pursuit of the *perfectly* finished gypsum board wall

By: ROBERT H. NEGRI  
Member of Technical Staff  
Interior Finishing Systems Lab  
USG Corporation Research Center

One of the most frustrating problems encountered in new construction by the interior finishing trade is the discovery that those newly decorated "smooth" gypsum board walls are not quite as smooth ... or as uniform ... or as perfect as they first appeared to be.

Decorating non-uniformity on drywall surfaces is a frustrating problem ... and it often has little or nothing to do with the application of the finish itself. The problem more often stems from deficiencies in wall construction and surface preparation.

Gypsum board is not a particularly difficult surface to finish, provided that you are aware of the proper application procedures, select the right materials, and take the time and effort to do the job well.

The intent of this article is to provide an overview of the types of problems most frequently encountered in finishing gypsum board walls and to provide some basic guidelines for prevention.

To accomplish this, we will review not only the results of extensive testing and research on the subject as conducted by the USG Corporation Research Center, but we will also review "real life" experiences and perceptions from several interior finishing and drywall contractors.

### Four problem sources

As the world's leading producer of gypsum board and joint treatment products, United States Gypsum Company is quite familiar with drywall finishing techniques.

Through our research, we have identified four primary sources of non-uniformity:

- 1) texture variation,
- 2) porosity variation,
- 3) deformation, and
- 4) color variation.

These primary sources are the root causes of the most common drywall decorating problems, including "joint banding", "telegraphing," "flashing," "ridging" and "photographing."

Solving these problems requires a synergistic approach to the finishing process, in which the interior finishing contractor must select the right combination of materials while employing the correct application techniques and job practices.

### Texture variation

Variation in texture between drywall face paper and joint compound is perhaps the most common cause of non-uniformity. It results in "joint banding" ("photographing"), a problem which is especially noticeable under critical lighting conditions or when

semi-gloss paints are used. The problem can be accentuated through improper or sloppy sanding techniques.

Rick Miller, of Drywall Resources, Inc., in Kirkland, Washington, notes one potential cause of texture-related problems. "Many of today's 'muds' are softer and easier to sand," he says. "The workmen like it because it's easier to work with, but we've noticed that at times the material will build up beneath the sanding pad in the wall surface and actually scratch itself to the point where it leaves very fine scratches that fill up with dust and are hard to notice until they are primed."

Sanding the finished joint compound with 100 grit or coarser sandpaper and/or employing excessive "body" sanding (as opposed to lighter, less abrasive "surface" sanding) can create disruptive patterns similar to those described by Miller.

A related problem which can cause texture non-uniformity is fiber raising. This occurs when the drywall face paper is accidentally roughened during sanding of the joint compound. The result is a disruptive transition from the smooth joint compound to the roughened, raised fibers of the paper located adjacent to the treated joint area.

This finishing problem is especially apparent when egg-shell or semi-gloss paints are used, and will be magnified