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The Drywall Defect Trifecta: *The spec was met but the walls are a wreck*

Caution Notes >>

Ever hear this one? This paint inspector walks onto a jobsite and sees a drywall surface that's just been meticulously painted with an intermediate coat of premium high performance interior latex…and his stomach turns: the wall looks awful, with the joints clearly visible at both the bevel joint seams and butt joints. The architect and owner are upset and the painting contractor is pointing at the drywall contractor. The drywall contractor, however, insists the work was done to spec.

And according to GA-214-10e "Recommended Levels of Gypsum Board Finish," the drywall contractor is right.

That's what the intrepid inspector faced on a large construction project for a new community center,

What to Expect from an ASTM Level 4 Finish

Here's how it starts: specifiers and owners are reluctant to specify an ASTM Level 5 Drywall finish (as described in ASTM C840) because the cost goes up appreciably: Level 5 takes more time and requires greater skill (because if you don't know how to properly apply the required skim coat, you'll have a mess on your hands). So the vast majority of new construction specs require an ASTM Level 4 Drywall Finish for painted surfaces, instead of the more uniform surface described by Level 5.

The Gypsum Association's GA-214-10e "Recommended Levels of Gypsum Board Finish" is a consensus document designed to help architects and facility owners anticipate the final appearance of the wall system. The document stipulates that an ASTM Level 4 Drywall Finish should be specified "where flat paints or light textures are to be applied" and that "Paints with sheen levels other than flat..are not recommended over this level of finish."

The guide also suggests that *joint telegraphing* (also called *joint photographing*; it's the defect where finished seams and joints in the drywall are clearly visible through the finish) is magnified in areas of critical lighting, which is defined as "wall and ceiling areas abutting window mullions or skylights, long hallways, or atriums with large surface areas flooded with artificial and/or natural lighting."

The guide further warns that light striking the surface obliquely, at a very slight angle, greatly exaggerates surface irregularities.

So here's the challenge: if the drywall contractor meets all the requirements for ASTM Level 4 finishing, with its multiple coats of joint compound over joints and angles, he will not consider surface irregularities that are visible due to critical lighting, oblique angles, or the use of a non-flat paint to be "defects" — yet that's what they are to the paint inspector or owner who's staring at the coated surface.

The Case of the New Gymnasium Walls

This was the case faced by the intrepid paint inspector at the handsome new community center that housed a huge gymnasium. The gym's 36-foot-high walls were constructed with wood paneling on the bottom eight feet, followed by eight feet of soundproofing panels. The remaining 20 feet above the soundproofing was drywall…and these drywall surfaces represented the perfect-storm trifecta for creating visible drywall defects:

- they were bathed in natural light from the expansive windows set high in the walls
- the spec required an MPI Gloss Level 3 finish (equivalent to a 'pearl' or 'eggshell') instead of a flat, because a flat could be marked easily by flying basketballs and volleyballs
- the height of the walls guaranteed that from almost anywhere in the gym, they could be viewed at an oblique angle. Standard practice for wall paint inspection is to view walls from a 45-degree angle – and in this facility, the view from 45 degrees came from the center of the gym. Defects were plainly visible even from that distance, and appeared more conspicuous as the inspector approached the wall (the smaller the angle, the more visible the defect).

These joints are telegraphing so clearly through the finish that you can count the wallboards

So even though the drywall contractor had met the requirements for an ASTM Level 4 finish, the joints were telegraphing so clearly through the intermediate that from a distance of 30 feet away, the inspector — and the frustrated facility owner — could count the drywall boards.

To exacerbate the problem, tight scheduling demanded that a solution be found and executed quickly: all the work at 36 feet had to be finished before the gym floor could be installed, since the heavy access lifts weren't practical for use on hardwood — and the floor installation date was fast approaching. How to solve this?

Tips for Masking Drywall Finishing Defects

One seemingly obvious solution – troweling on more joint compound to hide the seams — is not recommended. As we explained in our February 2012 newsletter (click here to read the complete article), drywall repairs should only be made after application of the primer/sealer, and not after application of the intermediate coat; otherwise, you're likely to make the problem worse.

An alternative practice suggested in the GA-214-10e guide is to first apply a texture to the walls, and then apply the paint finish. These spray-applied texture products can mask the flaws in drywall so effectively that sometimes an ASTM Level 3 Drywall Finish is sufficient for painting. However, textured finishes can quickly pick up dirt, which is undesirable in a gymnasium setting, especially at heights that create a considerable maintenance headache.

The most practical solution was to try reducing the gloss. So the contractor painted a test patch with the MPI Gloss Level 2 version of the

specified coating; Gloss Level 2 is a high-side-sheen flat with a velvet-like finish. To simulate the final service conditions, the contractor set up portable lights to flood the walls with the strong side lighting that would eventually pour through the windows.

Upon viewing the new finish, the inspector and owner agreed that the defects where sufficiently diminished, so the Gloss Level 2 finish was then applied on the remaining drywall surfaces. Fortunately, because a high performance interior latex was specified, the finish's resistance to marking and burnishing will not be significantly affected by taking the gloss level down one notch.

So what's the moral of the story? Anomalies and defects in new drywall finishes may be minimized by (a) applying the afore-mentioned textures to the walls prior to painting; (b) applying a skimcoat to the gypsum board surface (essentially creating an ASTM Level 5 Drywall finish); or (c) specifying the use of draperies and blinds to soften shadows. But in general, be warned that paints with higher sheen, or specifying the deep colors that are so trendy these days, will always tend to highlight surface imperfections.