FINISHING FIBERGLASS MAT FACED GYPSUM WALLBOARD

NORTHWEST WALL AND CEILING BUREAU
Presenter:

Terry Kastner
Technical Consultant
Northwest Wall and Ceiling Bureau
What we are going to be looking at today

- Evolution of glass mat sheathing
- The shift to interior products
- Review of the levels of finish
- Review of the effects of critical light & high sheen paints
- Discuss the NWCB Recommendations for glass mat
- Review the manufactures recommendations
- How to bid or plan for finishing glass mat products
- Importance of the Mock-Up
- How to specify the finish for glass mat products
HISTORY OF GLASS MAT WALLBOARD

Paper Faced Exterior Sheathing

Moisture
Mold
Delamination
Structural Failure
Delamination
Moisture
Structural Failure
GLASS MAT SHEATHING ADVANTAGES

Stronger facing material than paper products
Moisture resistant core
Mold resistant
Resistant to incidental wetting

***Scheduling
CertainTeed, CGC, Georgia-Pacific, Lafarge, National, Temple Inland and USG
if it’s that good on the exterior?

GLASS MAT INTERIOR PRODUCTS

Mold and Moisture Resistant Panels
Abuse Resistant
Impact Resistant
Pre-Rock
Shaftliner
Hospitals, Schools, City/State/Federal
what do the manufacturers recommend?

“Similar to paper faced products”
“In accordance with GA-214”
With few exceptions
Levels 1-5
Higher the number the better the finish and more labor and material
LEVEL 1 FINISH

One coat
No Accessories
“Fire” Taping
Plenums
No Decoration
LEVEL 2 FINISH

One coat & wiped down
Fastener heads & Trim Accessories
Garages, Storage rooms
Backing for tile
No Decoration
LEVEL 3 FINISH

One additional coat
Medium to heavy textures
Medium to heavy wallpaper
Apartments, low to medium priced homes
Not for paint finish without texture
LEVEL 4 FINISH

Three coat application
Smooth surface, Light texture or Light grade wall covering
High quality work
Not Recommended for Critical Light or High Sheen Paints
why.....why upgrade to a level 5 finish?

LEVEL 5 FINISH

Three coat & Skim coat of joint compound or Proprietary Products
Highest quality Smooth surface Gloss paints/dark tones
Subject to critical light
differences between the Level 4 and the Level 5

CRITICAL LIGHTING
Understanding Level 4 and Level 5 Finish

There are 5 levels of finish for gypsum wallboard. The various levels are intended to provide a desired final appearance and give clear direction to the contractor as to the proper steps. Typically, the higher level provides a better surface finish quality. Each level has its own criteria (steps), which are intended to achieve specific appearance and functional requirements. Please refer to the Northwest Wall and Ceiling Bureau Field Technical Document 300-301 Recommended Levels of Finish.

Some hallways and rooms are subject to critical (natural or artificial) side light conditions. Because of the porosity and surface texture differences between the gypsum panel face paper and the joint compound, walls can exhibit "joint banding" or "photographing". The use of a high sheen paint will magnify this condition.

Most complaints arise from contractors given direction to provide a level 4 in the interest of economy when a level 5 is better suited to the situation. In some cases a level 4 finish has performed satisfactorily when a level 5 should have been specified and misled designers to believe a level 4 will "always" provide the desired result. When a level 4 finish is used where a level 5 should have been specified and there are aesthetic problems, it can lead designers to feel that the contractor failed to due a proper level 4. After all, level 4 has worked in similar situations so it must be the contractor who made the mistake. While a poorly done level 4 is possible it is more often than not a slight change in one or more criteria has made the level 4 not acceptable to the owners. Here are some examples of what can make a smooth wall level 4 not acceptable when it seemed to work on other projects:

- If the sunlight hits a wall at the just the right angle
- The paint used has a slightly higher sheen than previous job sites
- If wall wash lights or accent lights are used
- The color is deeper in tone

The NWCB would suggest using a flat (low sheen) paint for better results. The other option would be to specify a level 5 and use a skim coat of joint compound over the entire surface to equalize porosity and minimize surface texture variations. There are also several proprietary products designed to achieve a level 5.

*** SEE NEXT PAGE***

This technical document is to serve as a guideline and it is not intended for any specific construction projects. The NWCB makes no express or implied warranty or guarantee of the techniques, construction methods or materials identified herein.
“While a poorly done level 4 is possible, more often than not a slight change in one or more criteria has made the level 4 not acceptable to the owners.”
joint photographing
CAUSES OF JOINT PHOTOGRAPHING

Porosity - A measure of the void spaces in a material

Light Refraction - Texture

Shadowing
“The other option would be to specify a level 5 and use a coat of joint compound over the entire surface to equalize porosity and *minimize surface texture variations*. There are also several proprietary products designed to achieve a level 5.”
“A slight visible buildup of joints is inherent under certain conditions and is acceptable when joint compound is applied as tight as possible and sanded to provide a smooth surface feathered into the gypsum board surface.”
FACTORS THAT DETERMINE THE PROPER LEVEL OF FINISH

Final decoration
Gloss paints
Severe Lighting conditions
Dark tone paints

***Surface Texture***
FACING TEXTURE

Paper Facings

Glass Mat Facings
“Step two is a separate coat of joint compound over the dry first coat, leaving a smooth surface free of ridges, tool marks and sanding grooves.

Step three is the final coat of joint compound feathered out over the dry second coat, leaving a smooth surface flush with the gypsum board and free of all marks.”
so, where does that leave us?

SANDING TO CREATE A SMOOTH TRANSITION

Paper — Over-Sanding
GA-214 Lightly Sand
Glass Mat — “Adequate-Sanding”

Definitive line between compound and glass mat
what can be done to make the level 4 appropriate for glass mat?

LEVEL 4 FINISH IS INAPPROPRIATE FOR GLASS MAT PRODUCTS

Definitive line between joint compound and fiberglass mat
Even with flat paint and non-critical light conditions
Skim Coat: “A thin coat of joint compound applied over the entire finished gypsum board surface. Wipe down immediately, leaving a tight smooth film of joint compound.”

Troweled in joint compound fills the voids of the fiberglass mat – lightly sand
so how do we finish the glass mat for critical light and high sheen paint products?

ISN'T THIS NOW A LEVEL 5 FINISH?

No, not over Glass Mat surfaces

Under critical light conditions or with high sheen paints the pattern of the fiberglass mat will show through.

Why

The joint compound is only flush with the surface of the mat it is not covering the fiber pattern of the mat – (sanding review)
Specially formulated to develop a Level 5 Finish (on paper faced products).
Spray applied to a thickness of 15 mils WFT, not to exceed 20 mils WFT.
Achieves 9 to 12 mils DFT.
Suitable for paper products because it completely covers the paper face and compound areas.

Not sanded....
PROPRIETARY LEVEL 5 PRODUCTS INSTEAD OF JOINT COMPOUND

No

Insufficient to fill the voids of the glass mat

Perfect for concealing the fiberglass pattern when the voids have been filled with joint compound
Fill the glass mat voids with joint compounds
Followed by the application of a Proprietary Level 5 Surfacer
Or
New Products
If you read the manufacturers recommendations carefully, they do not specifically state that a level 4 is recommended. They state that the product is to be finished per GA-214, which includes 5 levels of finish.

“A level 5 is recommended for critical lighting and gloss paints, and...the effects can be minimized by skim coating...”

Exceptions
Levels 1 & 2 - Fine

Level 3: If other than a heavy texture is applied, where the entire surface is completely covered, the glass mat surface should receive a skim coat.

Level 4: Skim coat entire surface with joint compound.

Level 5: Skim coat entire surface with joint compound followed by the application of a Proprietary Level 5 Surfacer.
Price per specified level of finish per GA 214

Request an upgrade to the specified finish based upon the NWCB recommendations.

“Although a Level ___ finish has been provided as specified, the NWCB recommends that an additional skim coat of joint compound be applied to Glass Mat products for a Level 3, Level 4 and Level 5 Finish.”
Recommended Criteria:

Before starting the finish work, develop a sample space (mockup) demonstrating the final specified surface appearance
THE SPECIFICATIONS

Difficult
ASTM C840
GA-214
NWCB 300-304

Unless you specify an additional step none will be provided.

Include in the “Instructions to Bidder” to include an additional skim coat of joint compound to fiberglass mat products.
When the material used in the manufacture of a wallboard product is such that it cannot be finished in the traditional manner, e.g. ASTM C840, GA 214 or NWCB 300-304 Recommended Levels for Finishing Gypsum Board, the Manufacturer should provide clear and concise directions on how those products are to be finished.
All Architects and Code Officials have free access to all of the Technical Documents on our Website.

QUESTIONS

terry@nwcb.org

www.nwcb.org