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ABSTRACT:

Greenboard is commonly understood to be water resistant gypsum board, but not all WR boards are green. The standard governing greenboard is gone, and the term "greenboard" must be retired. Learn what should replace greenboard to ensure the correct performance is provided.

FILING:

UniFormat™
C1010 - Interior Partitions
C1070 - Suspended Ceiling Construction

MasterFormat®
09 29 00 - Gypsum Board

KEYWORDS:

Gypsum Board, Greenboard, Water Resistant, Mold Resistant, Abuse Resistant, Impact Resistant

REFERENCES:

IBC - International Building Code, 2009 edition.
ASTM C1396 - Standard Specification for Gypsum Board
ASTM C1629 - Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels
ASTM D32730 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber

It's Not Your Father's Greenboard

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Background

The industry has for years referred to water resistant gypsum board by the colloquial term "greenboard." Why? Well the board's water resistant paper face was colored green. There was nothing magic about the color, other than to easily distinguish it from other gypsum boards.

One of the biggest misconceptions was that greenboard was waterproof. The paper face was specially treated to be water resistant, only, not waterproof. If the board was subject to wetting, the gypsum core and ultimately the entire board would degrade.

Greenboard was meant to be used in dry locations (not showers and tub surrounds). The special paper face was designed resist water used in tile setting materials, until the materials cured.

Historically gypsum board colors - brown, gray, blue and green indicated a specific application. The color made visual inspection on jobsites fairly easy.

Codes and Standards

ASTM C1396 - Standard Specification for Gypsum Board is the current reference standard for gypsum boards used for interior applications plus exterior soffit boards. In December 2004, this single standard replaced nine, now historic, standards. One of the replaced standards was ASTM C630 that described water resistant greenboard designed as a wall and ceiling substrate for ceramic tile finishes.

Gypsum board types specified by ASTM C1396 include:

- Gypsum wallboard, predecorated board, and laminated board
- Gypsum backing board, coreboard, and shaftliner board
- Water-resistant gypsum backing board
- Exterior gypsum soffit board
- Gypsum sheathing board
- Gypsum base for veneer plaster
- Gypsum lath
- Gypsum ceiling board

ASTM C630 was first published in 1978 and last published in 2003. The standard is still referenced in the IBC 2009 edition Table 2506.2, but current products are manufactured to meet ASTM C1396, also listed in the same IBC table.

Water and Mold Resistance

All gypsum board manufacturers offer water resistant boards with both 1/2 inch thick regular and 5/8 inch thick Type X fire-resistant gypsum cores. Some manufacturers offer water resistant board with Type C, fire resistant core in both 1/2 inch and 5/8 inch thicknesses. These boards have a paper face which allows them to be finished the same as regular gypsum board.

In addition to water resistance, manufacturers offer boards that are mold resistant, too. The boards are subjected to an environmental chamber test: ASTM D3273. This 4-week long accelerated test measures surface resistance to mold growth when subject to a 90 degree F and 95-98% RH atmosphere with

continuous inoculation of the surface with mold spores.

All manufacturers indicate mold resistance test results as 10 when tested in accordance with ASTM D3274. Results are reported on a scale of 0 - 10 with zero being the least resistant, and ten being the most resistant - essentially unaffected by the test.

It is important to remember the mold-resistance test is an accelerated test. A score of 10 does not mean mold will never form on the gypsum board surface. It does mean that a board with a score of 10 will perform better than a board with a lesser score. It is also important to remember that gypsum boards are rarely left unfinished. Applied finishes such as paint, wall covering, and tile and the maintenance cleaning may affect the actual mold resistance of the completed construction.

Abuse Resistance & Impact Resistance

Water and mold resistance - what More could a specifier want from greenboard? How about abuse and impact resistance? No need to even

ask. Manufacturers are already producing water resistant boards to provide abuse and impact resistance measured by ASTM C1629.

This test measures resistance to surface abrasion, indentation, soft body impact and hard body impact. The results are reported by Level from 1 - 3 with one being the least and three being the most resistant.

Generally, abuse resistant boards provide surface abrasion and indentation resistance. Think of high traffic corridors where people brush against the walls.

Impact resistant boards provide hard and soft body impact resistance.

Think of a person's angry reaction of kicking or punching a wall.

Conclusion

Forget "greenboard!" Label gypsum board for the type it is rather than the color it may be. Use the term "water resistant gypsum backing board" or simply "WR gypsum board."

Water resistant boards are meant for normally dry applications with virtually any finish applied to the paper face.

For wet applications, use either the glass mat faced or cementitious tile

backer boards with a waterproofing system and a tile finish.

Just because gypsum boards are rated water and mold resistant does not mean the products can be delivered to a project site early and stored without weather protection. The products are not indestructible - they are sufficiently resistant to receive wet applied finishes and occasional, limited water exposure.

Technicolor Boards Today

Today, gypsum board manufacturers make water and mold resistant boards in a variety of colors. The colors distinguish the board type and each brand.

Manufacturer	Product	Face Color	Back Color
American Gypsum	M-Bloc	NR	NR
CertainTeed	ProRoc with M2Tech	Light Violet	Bronze
Georgia-Pacific Gypsum	ToughRock Moldguard	Green	NR
Lafarge Gypsum	Mold Defense	Green	Gray
National Gypsum	Gold Bond XP with SporGuard	Purple	Gray
US Gypsum	SHEETROCK Mold Tough	Green	Brown

NR = Not reported

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