Q

When is it necessary to stagger horizontal joints when installing drywall with the long dimension running horizontally?

—B.M., Denver

The caller further explained that a building inspector was insisting that areas where the drywall was installed prior to the installation of the ceiling and mechanical work above the ceiling needed to have the horizontal joints staggered. This didn’t sound entirely right, but the caller needed documentation to stand on firmer ground next time the issue came up, or to have a better understanding of when it is necessary to stagger horizontal joints.

A

It depends. Certain fire-rated wall assemblies do require staggered horizontal wallboard joints. I’ll explain in more detail further on, but let me walk you through my thought process; this question has come up more than once, and perhaps the obvious part that evaded me will be a little more self-evident once I do go through the steps.

To answer this question, I first consulted the ASTM standard, C 840, Standard Specification for Application and Finishing of Gypsum Board, which, in section 7.4, says: “Joints shall be staggered, and joints on opposite sides shall not occur on the same stud.” The standard doesn’t read “just the vertical joints, when installing the boards horizontally,” but it also doesn’t say “all joints” either. This left me a bit confused, because the standard did not define “joint” or “seam.” Did “joint” mean just where two ends of the board meet and not the long edges? What about where the long edges abut—is that not a joint?

An illustration in ASTM C 840 shows the ends of two horizontally installed boards buttting up evenly. I even envisioned for a moment cutting the occasional horizontal board long-wise down the middle for each alternate row in order to comply with the suggestion that the horizontal joints be staggered. That sounded like an awful lot of work for some dubious advantage.

Finally, in a blazing flash of the obvious, I realized that in order for the horizontal joints to be staggered, the vertical joints would all line up. It is not possible to simultaneously stagger both the vertical and the horizontal joints without doing major surgery on the boards that would leave each board resembling the letter “z.” Clearly, there had to be more to this question if an established builder and a building inspector couldn’t agree on the topic.

A couple of e-mails among some very patient industry experts set me on the right path. Several fire-rated wall assemblies incorporate multiple layers of fire-rated gypsum board. The joints from one layer to the next on the same wall, front and back, must be staggered to impede the passage of hot gasses and flames through the assembly. To truly answer the question as to whether or not such staggering of the joints is necessary, one must know whether there is a specific fire-rated design involved, such as ANSI/UL263 Design U642 or U643. Such designs specify the number of layers of gypsum board and the extent that they must be staggered.

About the Author

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