This month brings a question from Hank Kemper of Quality Drywall Systems, Inc. in Bar- tonville, Ill.:

What is the industry standard for the length of screws used on 5/8-inch drywall and 5/8-inch drywall, in wood and metal. Is it acceptable to use 1-inch coarse thread on 5/8-inch (drywall) into wood?

We assume from the letter that Kemper is working in single-ply application and will base our answer on that supposition.

For wood framing, Section 5.3.3 of Application and Finishing of Gypsum Board (Gypsum Association publication GA-2 16-93) states: “When screws are used in lieu of nails, they should penetrate (wood) framing not less than five-eighths of an inch . . . .” The same criteria are also defined on page 13 of GA-201-90 Using Gypsum Board for Walls and Ceilings in its discussion of type W drywall screws.

Section 12.2 of GA-216-93 defines the criteria for attachment of drywall to metal framing. “Screws . . . should be a minimum of three-eighths of an inch longer than total thickness of gypsum board applied . . . .” GA-201-90 again confirms this.

To answer the second part of the question, we have to assume that Kemper is in compliance with Section 5.1.5 of GA-216: “Screws should be driven so that screwheads are slightly below gypsum board surface without breaking surface paper or stripping framing member around screw surface.”

Installing a screw in compliance with 5.1.5 will, for argument’s sake, lead to a screwhead that is installed
in the same plane as the facepaper of the gypsum board.

More important, to make our point, it does not allow for excess penetration of the screwhead into the core of the board. A 1-inch-long screw properly installed into a half-inch-thick piece of gypsum board will protrude from the back side of the board no more than half an inch.

Therefore, installing half-inch drywall with 1-inch screws presents two problems: Installing the board so that it complies with Section 5.3.3 of GA-216 and attaining the required minimum five-eighths-of-an-inch penetration into the wood substrate will violate the requirements of Section 5.1.5 of GA-216, as screw installation will undoubtedly tear the face paper and begin to destroy the core of the board. On the other hand, compliance with Section 5.1.5 will not permit adequate penetration into the wood substrate in accordance with Section 5.3.3.

The answer? Use a longer screw. Type W screws come in a variety of lengths with one of the most common being 1 1/4 inches. As an additional thought, always remember that compliance with fire and sound tests may require the use of a specific type and length of fastener. CD

About the Author
Michael A. Gardner is director of technical services for the AWCI. If you have a technical question, write to him in care of Construction Dimensions, 307 E. Annandale Road, Suite 200, Falls Church, VA 22042; call him at (703) 534-8300; fax to (703) 534-8307; or e-mail your question via CompuServe at 75222.2200.