Q An inspector on a job recently told me that the shear value of gypsum wallboard is no longer recognized in construction practices. Is this true? Do you know how this came about?
—P.C., via e-mail

A According to Michael Gardner, the code ma-ven for the Gypsum Association, this is incorrect. Gardner explains that each of the regional model codes assigned shear values for gypsum wallboard over wood framing in their respective gypsum board chapters regarding such assemblies as follows: In SBCCI’s 1999 Standard Building Code, those values can be found in Chapter 25, Table 2506; in ICBO’s 1997 Uniform Building Code, Chapter 25, Table 25-I; in BOCA’s 1999 National Building Code, Chapter 25, Table 2502.1. A couple of the same documents also contain tables for gypsum board applied to steel framing in the steel chapters. The International Building Code takes all of the shear values out of the gypsum board chapters and places them in the wood or steel framing chapters. The IBC goes one step further and has separate values for gypsum wallboard over wood or steel framing. Those new values can curiously enough be found in either the steel framing or wood sections of the 2000 IBC: For wood framing, see Chapter 23, Table 2306.4.5 on pages 566 and 567; for steel framing, see Chapter 22, Table 2211.1(2) on page 537. I’m not sure how this misunderstanding came about, but I’m guessing there is likely to be some confusion among the design community at all levels as the switch from one building code to another occurs (or not), especially if an item that’s been in one place for 50 years is now suddenly found in two new places.

And for yet another source, Gardner suggests shear values are also contained in Evaluation Reports, such as ER 1874, published by ICBO Evaluation Services and sponsored by the Gypsum Association.

Q Is there a test method for the “hardness” of plaster white coat once applied to a wall? I live in Perth, Australia, where this method is extensively used—plaster is made up of lime putty and gypsum gauging on the solid wall. There is an increasing problem with weak plaster, which dents easily. —A.M., via e-mail

A The closest I came to finding anything related to a hardness test for plaster was in ASTM C472 “Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters, and Gypsum Concrete.” This standard describes how to test for the proper moisture content in a sample of a gypsum product, but not a plaster wall once it has been finished. However, my firsthand knowledge about the various mixtures, ingredients, test methods, etc., about plaster falls far short of that of some of the veterans out there, so I posted this question on AWCI’s Net-Forum (www.awci.org) in hopes of getting some real expert help with this one. Fortunately, I got a couple of responses.

According to Frank Nunes, “Hardness of materials can be tested using a ‘Moe Hardness Test.’ This method is sometimes used on portland cement plaster, but I know of no recognized standard or range of hardness to evaluate the material in correlation to hardness. You could use this test method and possibly arrive at an industry consensus on range of acceptable hardness.”

And Robert J. Lindegard adds: “I don’t believe there is an objective test procedure that can evaluate the hardness of an inplace smooth trowel finish plaster consisting of lime and gauging plaster. This will probably be a subjective evaluation based on visual observations. The overall hardness of a wall will be affected by the basecoat. A weak finish plaster that dents easily is probably indicative of insufficient gauging plaster in the mix (under-gauging). While the material will probably apply quite easily, the finish hardness will be compromised.”

About the Author
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