Q We often hang and finish our own drywall on small jobs and have always used premixed joint compound straight out of the bucket. However, another subcontractor on our job was surprised we didn't add water and mix the mud before using it. Is this necessary or does it have an advantage?

A *Lydia Crowder, a drywall finisher and owner of Trinity Drywall based in Boseman, Mont., responds:* Adding water to joint compound creates a smoother compound with fewer air bubbles and helps improve workability. Having a smoother mix allows you to spread it in a thinner layer and avoid overfilling joints. When you have a thick, dry layer of joint compound on the wall, it's harder to spread out in a thin layer, and it takes more work to feather out, so you end up with heavy edges and may even create waves in the coat. Mixing in a little water is also necessary when finishing with semi-automatic or automatic tools.

Premixed joint compounds come in a variety of consistencies, depending on the brand, the factory where they were produced, and even regional formulas. The joint compound manufacturers allow users to add water to the compounds, but the formulas are designed be thinned with water only. There is no reason to add anything else to the mix.

Sometimes, you can open a bucket or box of joint compound and find it is dry and hard to work with **(1)**, and if you try to use it straight out of the box, you will not be happy with the results. On the other hand, you want to be careful to avoid adding too much water, as the compound can fail—that is, crack and flake off—when it's too thin. You may also have to apply multiple coats that you wouldn't otherwise need to do. We want to be right in the middle with the consistency—not too thick and not too thin. For any sort of "heavy" filling, I would recommend using Easy Sand or Durabond. Those are chemical-set muds and are made for prefill and heavier fill applications.

When we mix our joint compound, we typically empty a box into a 5-gallon bucket, and then add 1/2 to 1 cup of water. We then use a mixing paddle with a mud mixing drill to stir the water in until it is fully incorporated into the compound and the consistency is smooth **(2)**. Before using it, we test the mix with a knife to see if it is the right consistency and add more water as needed. If you haven't done this before, you will likely be nicely surprised with the results: smoother joints, better workability, and a nicer finish.

Photos by Lydia Crowder; @drywallshorty

The author typically empties a box of joint compound into a 5-gallon bucket. Out of the box, the material is dry and stiff **(1)**, but after mixing in about 1/2 cup of water **(2)**, she gets a nice, smooth consistency that is vastly easier to work with.

Q During plan review, we submitted a 2x6 wall with unfaced R-21 batts and 1-inch continuous polyiso foam on the exterior. This design exceeds the code's "20 + 5" insulation requirement for climate zone 6, but it was rejected because it doesn't "meet vapor retarder requirements." (Because we are using the foam, we are trying to avoid poly on the interior.) To pass, we were told we needed $1\frac{1}{2}$ inches of foam on the exterior. Can you explain why the code's vapor requirements contradict the insulation requirements?

A *Clayton DeKorne, editor of* JLC, *responds:* The building code is written to be as flexible as possible so you have options. For example, you could install a Class I vapor barrier, such as poly, on the interior and stick with "20 + 5" (R-20 cavity insulation + R-5 continuous insulation). Even though the poly and the foam are both vapor barriers, this wall system does work in cold climates.

But I understand your reluctance to add poly given the trend toward warmer climates and the increased use of air conditioning in cooler climates. I wouldn't say the requirements contradict each other, but the IRC's minimum insulation requirements are confusing. At the very least, the insulation requirements listed in Table R402.1.2 (pre-2021 IRC; in 2021, it's relabeled as Table R402.1.3) should have a footnote that specifies which vapor control option is assumed in the table and refer users to the Chapter 7 vapor retarder options.

It's worth noting that the 2021 IRC has added clarifying information to the Chapter 7 discussion of vapor retarders, including guidance on types of vapor retarders allowed in each climate zone and details on using Class II vapor retarders, such as kraft-faced batts. If you use kraft-faced batts, you should be able to use your proposed wall insulation under the new rules, which specify a minimum R-5 continuous insulation over a 2x6 wall.

Condensation Potential in Wood-Framed Walls

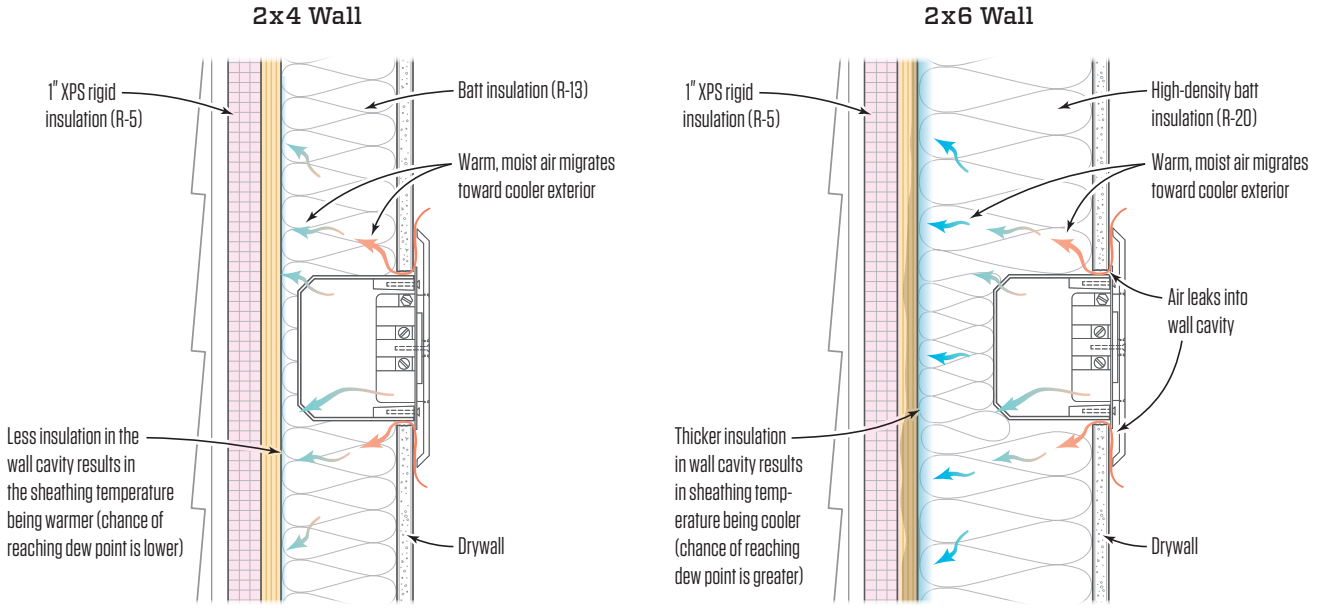

Illustration by Tim Healey

Condensation is more likely to form in the 2x6 wall (right) because, under the same temperature and humidity conditions, the thicker cavity insulation will keep the inside face of the sheathing cooler than will the thinner insulation on the 2x4 wall (left).