Joint Tape Led to Joint Cracks

By Lee G. Jones

Q. We used self-adhering glass-mesh joint tape with ready-mixed joint compound, and now we're seeing cracks in the joints. What's going on?

A. Imagine my surprise after a nine-year hiatus to return to a topic that I thought had been long resolved but apparently is still alive and well! Had I missed a new development while off promoting the miracle mineral? Did I not know what I thought I knew? To ensure I knew wherefrom I spoke before responding to this query, I did a little digging, and after pulling up several technical data sheets on the Internet and speaking to some manufacturers' technical support people, I both confirmed what I thought I knew and added a couple of tidbits that were new to me.

First, what I confirmed: The technical data sheets posted on the Internet recommend using self-adhering glass-mesh joint tape only with setting-type joint compound, better known in the trade as "hot mud." Hot mud contains ingredients that cause the compound to harden when mixed with water, much in the way Plaster of Paris does; this reaction creates heat, which no doubt led to the moniker "hot mud." Because setting-type joint compound sets up by a chemical reaction relatively quickly (or in some cases, really, really quickly), it does not sit wet long enough on the self-adhering glass mesh tape to attack the adhesive. Ready-mixed joint compound, or regular drying-type joint compound that sets up as the added water returns to the atmosphere, stays wet for some time, as it is entirely dependent on temperature and humidity to achieve proper hardness. And under less than ideal drying conditions, that can be long enough for the water to attack the adhesive holding the tape to the surface and loosen the bond, which in turn results in cracks in the joint when the building inevitably moves. So, according to all the manufacturers' literature, paper tape is the material to use when working with drying-type joint compound.

There are both self adhering and non-sticky glass mesh tapes out there. The non-sticky variety is most commonly attached with staples to "blue board" in a veneer plaster application, after which the joints are first coated with a base coat plaster mix. This much I knew. What I didn't know is that setting type joint compound—that's our friend "hot mud"—can be also used to cover the joints in a veneer plaster application (best to check the manufacturer's recommendations before trying this!). What I also didn't know is that paper joint tape can be used in a veneer plaster application in lieu of glass-mesh tape. In the past, all the information I had seen on veneer plaster mentioned only the glass mesh tape, so I was mildly surprised to pick up on this factoid.

This led to a little more schooling on paper tape for me: It turns out that paper tape has some advantages in both joint compound and veneer plaster applications. Paper tape, though a bit more cumbersome and slower to work with in some applications, makes for a stronger joint that is less likely to crack. At first, this struck me as odd. Everyone knows fiberglass is far stronger than paper, so surely it should make for a better, stronger joint. But fiberglass tape also stretches more than paper tape, which can result in cracking if the material the tape is embedded in is not particularly strong or flexible. Setting-type joint compound and plaster are usually strong enough to hold up without cracking over joints; however, paper tape resists movement and ensures against cracks even when using these materials. I also learned that there is the standard weight of paper tape, which apparently most everyone uses, but there is also a heavy-duty version that meets ASTM C475, which requires especially robust properties of the material.

Lee G. Jones is AWCI's director of technical services. Send your questions to jones@awci.org, or call him directly at (703) 538.1611.