Q Why are there so many different drywall compounds, and which ones are best for taping?

A Myron Ferguson, a drywall and home-performance contractor from Middle Grove, N.Y., responds: The combination of tape and compound is what connects the drywall seams and inside corners together. So it goes without saying that you should use the products that create the strongest seams. But all the different compound choices can be mind boggling.

Drywall compounds fall into two general categories: setting compounds and drying compounds. Setting compounds come as powders that mix with water and harden through a chemical reaction. Drying compounds come premixed—in either a bucket or a box—and harden by air drying.

As a professional drywaller, I usually use setting compounds only when I need a product that will set quickly, such as when prepping a room (see "Prep Work Before Taping," Aug/19). For most of my drywall work, I prefer drying compounds, especially for embedding paper or fiberglass-mat tape. Drying compounds are available in many varieties, including all-purpose compounds (in various weights) and specialized taping and topping compounds.

Taping compounds are formulated to have excellent bonding strength and crack resistance for embedding paper tape, although they work well with fiberglass-mat tape as well. Taping compounds are slick and easy to work with for embedding tape, but I would not recommend them for finish coats. They are difficult to smooth and feather, and they are tough to sand.

The next best product for embedding tape is standard all-purpose compound, which can also be used for finish coats. This is the compound you see most often at lumberyards and home centers. All-purpose heavyweight compound goes on slick and doesn't dry out, which gives you a longer working time for embedding paper or mat tape. Although this compound can be used for finish coats, it doesn't feather out and sand as easily, so I try to use it only for taping.

Lightweight all-purpose compound can be used for embedding tape, but it is not as strong as taping compound or heavyweight compound, so I try to use it only for fill and finish coats. Topping compounds formulated specifically for the finish coats are not nearly as strong as taping compounds, so I never use topping compound for embedding tape. Because topping compounds and lightweight all-purpose compounds are easier to smooth and feather, easier to sand, and shrink less, they make the best choices for the fill and finish coats.

I also recommend using the same lightweight or topping compound for both the fill coat and finish coat. The final finish coat or coats tend to be quite thin, and they are the coats that get sanded. When sanding the finish coat, you often sand through at high spots, ridges, or tool marks. If the fill and finish layers are the same material, they will sand the same, which results in a smoother finish. If you've used a harder compound for a lower layer, then the layers will not sand the same and the finish could have imperfections.

The "three bears" version of drywall compound is the midweight all-purpose compound. Midweight compound sands more easily than heavyweight compound and is better than lightweight compound for bedding tape. Many tapers use this product for the convenience of having just a single product on the jobsite.

If you're looking for a specific type or weight, be aware that individual brand names for different compounds and formulations can be a bit misleading, and some products may not be available in certain parts of the country. Always read the label carefully to make sure the compound you're buying will do the job you want it to do.

Photos by Roe Osborn

Companies such as USG and National Gypsum offer joint compound in a wide variety of weights and formulations. A few examples from USG are shown above: All-Purpose compound on the left can be used for embedding tape as well as for finish coats. Plus 3 is lighter weight and is for finish coats. Midweight is between the two and can be used for both taping and finish.

Q We replaced an old yellow-pine ceiling with T&G hickory last winter. This summer, the boards warped and literally started popping off. We don't want to replace them until we understand the problem.

A Clayton DeKorne, editor of *JLC*, responds: Hickory is not the most stable wood, so it moves a lot with changes in humidity. In winter, when you installed the ceiling, the air (and wood) were very dry, but as indoor humidity climbed in summer, the boards swelled and buckled. The "problem" is likely in the material selection. True hickory is strong and hard, but its cell structure reacts to moisture.

First, the basics with any solid-wood paneling or flooring: Nail one side only through the tongue to allow each board to move without splitting. Before installation, bring the wood indoors for a few days to acclimate to indoor conditions. Test the moisture content (MC); hickory should be installed at 6.5 to 7.5 percent MC. But unless indoor humidity levels are stable, dry wood will swell as it takes on moisture from the air. This is more pronounced in humid-summer climates, especially if there is no AC in the home. (And even if there is, the HVAC system may be oversized and not run long enough to dehumidify. Maintaining a stable indoor climate in a humid climate usually happens only with dedicated dehumidification.)

Wood does not change much in length (parallel to the grain). Hickory expands about 0.1%, or about 3/32 inch in 8 feet. A shorter board moves less, but the expansion is cumulative across the total length of the ceiling. Wood moves a great deal more in width (perpendicular to the grain). Space must be left on all sides of any wood-paneled area to accommodate total expansion.

The width of that space can be calculated using the wood's dimensional-change coefficient: board width x annual change in MC x dimensional-change coefficient, which for hickory is .00411. (For a list of other woods, see Table 13-5 in the USDA *Wood Handbook*; free from the Forest Products Laboratory; fpl.fs.fed.us.) Expansion across the width of a single 5-inch hickory board can be 3/32 inch (almost 1 3/4 inches over 8 feet). By comparison, a 5-inch yellow (long leaf) pine board, with a coefficient of .00263, expands less than 3/64 inch, or half as much.

These numbers assume flat-sawn boards and an annual change of moisture content at 4%. If your indoor climate isn't stable, you should probably choose a wood other than hickory with its relatively high dimensional-change coefficient. To find an alternative flat-sawn wood in the *Handbook* table, look for a dimensional-change coefficient in the C_t (tangential) column in the range of .0025. Quarter-sawn wood (in the C_r (radial) column) has lower coefficients and is even more stable.