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TyRoc – Another Innovative “Green” Building Material using Magnum Board®

Maxwell: Canadian innovation makes basement floors better

August 31, 2010 **Steve Maxwell**

SPECIAL TO THE STAR

If you're planning to finish your basement, then you've got important issues to think about. Basements are fundamentally different than above-ground living spaces, and finishing techniques need to be different, too. This is especially true with basement floors, where three key differences hold sway.

While typical above-ground, wood-framed floors are flat, dry and warm; concrete basement floors are more likely to be uneven, damp and cold. This is why a whole range of basement-friendly flooring strategies have developed, including a unique new Canadian option that's currently one of the best.

Every good basement flooring strategy includes two parts — the subfloor and the finished floor — and they need to be dealt with differently. But before you get excited about any kind of finished basement, you need to begin with a reliably dry space. Don't let your enthusiasm get the better of you. Although the best basement finishing strategies are tolerant of moisture, none can gracefully handle large leaks. If your basement isn't completely and reliably dry year-round, forget finishing until you get this issue fixed.

Twenty years ago, finished basement floors were typically carpet laid over thick underpad directly on the concrete (a sure-fire way to create that musty basement smell), or a wooden subfloor frame built on the concrete (virtually guaranteed to grow hidden mold under your feet). The problem with both these options is the same. It puts biodegradable material directly in contact with potentially damp concrete. Microbes never miss an opportunity, and that's why food plus water always equals rot.

The first major breakthrough in basement subfloor technology happened about 10 years ago, and included microbe-proof, inorganic material for the critical interface between the underside of the subfloor and the concrete basement floor.

Products like Subflor and Dricore came out of this initial wave of innovation. They're 24-inch by 24-inch interlocking tiles made of wood-based oriented strand board (OSB), with a layer of dimpled plastic underneath. The plastic provides a sealed air space beneath the OSB, providing a little insulation and a microbe-proof barrier between wood and concrete. A product called OvrX is similar, except that it includes a layer of foam underneath the OSB, instead of dimpled plastic.

I know from experience that all three of these OSB-based subfloor tiles work very well, though they do have two limitations. Their small 24-inch x 24-inch tile size makes installation progress move more slowly than it could. Also, the rigid nature of the tiles means they need to be shimmed over uneven basement floors — a rather common problem in many basements, both old and new.

Tyroc (519.763.5553) is the next evolution in basement subfloor technology, and it's substantially different than OSB systems. I've been testing Tyroc at my own place since April, and I'm impressed enough to recommend it. Cost is about \$1.75 per square foot.

At 16 x 48 inches, each panel is narrow enough for easy transport, yet long enough to cover floors quickly. That said, the really interesting thing about Tyroc isn't panel size, but composition. The product is made entirely of inorganic materials that are not only environmentally green, but also physically flexible and completely unappetizing for microbes.

Each panel has two layers. The bottom is made of recycled rubber and plastic — about 28 used tires and 200 pounds of old bottles for one typical basement's worth of Tyroc. This bottom layer is molded into a raised checkerboard pattern that creates 1/8-inch of air space for drainage of small amounts of water in the event of an unexpected leak. The top layer is made of magnesium oxide, a mineral that's mined from the earth then combined with water to harden in sheet form. This process uses little energy and the result is a completely non-toxic, hard-surface board. Food-grade magnesium oxide is even used as medicine.

Since Tyroc is somewhat flexible, it sits stable, even when used over uneven floors. This speeds installation. But beware: If your ultimate plan is to install laminates or any other kind of click flooring, use floor leveling compound before Tyroc goes down. All types of click flooring require a very flat subfloor to perform properly and Tyroc simply undulates over whatever's underneath.

Need to economize? The top surface of Tyroc is perfectly smooth and designed to take paint. Roll on a couple of coats of latex while you save up for a finished floor, while still enjoying a reasonable looking space.

Canadians love finished basements, so it's not surprising that we're pretty good at innovations to make these spaces cozy, healthy, inviting and durable — right from the subfloor up.

Steve Maxwell is Canada's award-winning home improvement expert, technical editor of Canadian Home Workshop magazine and co-author of The Complete Root Cellar Book. Sign up for his free homeowner newsletter and pose your home renovation questions at www.stevemaxwell.ca. Steve will do his best to answer all queries, but letter volume sometimes prevents individual response.

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