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## **Gypsum-based floor leveling materials are fast, reliable, economical and problem free**

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Quality gypsum-based products are not only floor-friendly, but eco-friendly as well. Gypsum is a natural occurring rock, one of the most plentiful minerals. It generally is found in two forms, anhydrite and dihydrate, which roughly translated means without significant combination with water molecules and with water molecules. The dihydrate form is either calcined into "plaster" or is used for Portland cement manufacture, agricultural uses, and as fillers. Plaster or stucco is made by driving off half the water molecules from the gypsum rock and crushing the resulting materials. When water is added to plaster, it combines to produce the gypsum rock again. This can literally be done over and over again. There is no chemical reaction beyond the combination of water and plaster. The slurry simply sets to form a new rock and dries by losing any excess water. The anhydrite form is not calcined and will not re-combine. It is sometimes used as filter material, for certain chemical properties in other products, and for agriculture as a nutrient and soil conditioner.

Plaster and gypsum are totally recyclable. In fact, much of today's wallboard, and some gypsum-based flooring materials are made with recycled gypsum that is a by-product of coal emission "scrubbing" from electricity generating plants, rather than virgin gypsum rock. Because of more demanding performance standards for industrial plasters used in casting and molding, dental and other uses, and because of the presence of contaminants, these plasters are made from virgin gypsum rock, but the resulting products can be recycled.

One of the great myths about gypsum is that it is weaker than cement products. This reputation was largely created by some very inexpensive products that contain mostly fillers such a sand or limestone, and minimal quantities of lower quality gypsum products. However, some industrial plasters have compressive or "crush" strength of over 10,000 psi, or nearly 3 times Portland cement. The gypsum plaster-based materials we install use these industrial materials and result in "crush" strengths of the finished product of between 3,500-8,000 psi, usually reduced by the addition of latex materials added to the plasters.

In flooring uses, the ability of a material to bend or take stress without cracking is often of even greater importance than the crush strength. This is especially true in thinner applications under 1 inch thick. Gypsum materials are more flexible than cement, which is a very brittle material and easily cracks. This allows our gypsum flooring materials to cover suspended floors and handle floor movement much more comfortably and easily than cement levelers.

One of the unique properties of a gypsum-based material is the way it sets and hardens. Because it simply re-combines with the water previously taken from it and hardens (sets), it simply needs to lose any excess water. There is no chemical reaction or ongoing use of water as there is with cement-based products. Generally, in thin application, such as with patches and thin self-levelers, the drying occurs very quickly. Where deeper pours or applications are made, the time it takes the

water to work to the surface and escape increases somewhat geometrically.

However, because there is no chemical reaction, dehumidifiers, heat and other "force drying" techniques can be used that would be disastrous with cement materials. Once a gypsum plaster-based product is hard set, the faster it dries, the faster it gains its full final strength, which is when 93% of the excess water is driven off.

Because time is so critical on most flooring installations, the ability to advance the time when installation can occur over the gypsum levelers can be a significant time-saver.

Plaster or gypsum-based flooring is almost always the better choice for suspended floors, whether wood or concrete substrate, because of its tolerance for all substrates and increased flexibility. Where thin materials are used, it has the additional advantage of much faster natural drying and compatibility with adhesives. Gypsum-based materials would usually not be used for a wearlayer because of abrasion resistance or where standing or running water may be present. Because in the presence of heat, gypsum gives off water, it is actually a fire-retarding material in certain applications.

At one time, many sources incorrectly blamed "gypsum" for certain moisture and staining problems in flooring, and claims have been made it will void material warranties. In truth, every manufacturer has to stand behind its product's performance, and any fault of one material is not excused by the use of some other product which has nothing to do with the problem. At the same time, most responsible manufacturers, fully warrants the performance of all its products when used as directed, including all our gypsum and cement-based levelers.

When you are looking for fast, reliable, economical and problem-free leveling, as most flooring installers have always known, gypsum-based leveling materials are usually the superior choice.

Rich Tanski, national sales and marketing director for Dependable Floor Products, a manufacturer of professional grade floor products, gave permission for use of this article.

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