

Technical Tip

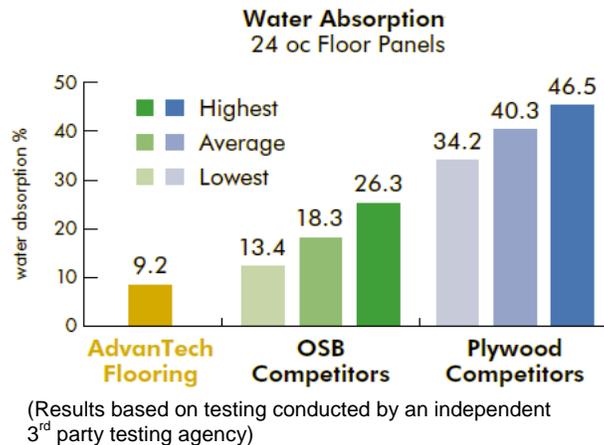
AdvanTech's Advantage with Gypsum Underlayment



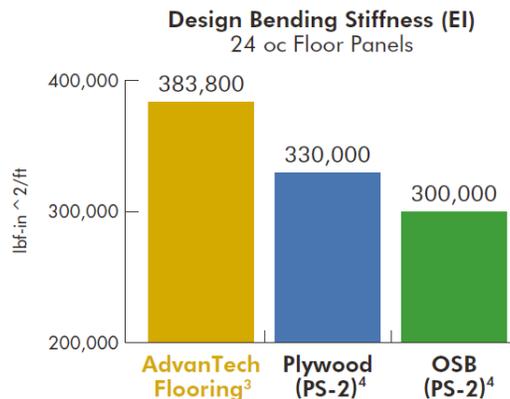
Gypsum Concrete is commonly used as a floor underlayment in wood-frame multi-family construction for fire ratings, sound reduction, radiant heating and smooth surface. The basic mixture includes gypsum, portland cement, sand and water. It installs by pumping a very low-viscosity mixture of water and underlayment on the wood subfloor to a desired thickness, commonly 3/4-inch. When dry, a very smooth surface is left for the installation of finished flooring.

The quality and condition of the wood subfloor at the time of gypsum concrete underlayment installation can have a direct affect on the performance of the underlayment and finished flooring, especially if the finished flooring is ceramic or porcelain tile. The subfloor needs to be structurally sound and designed to a maximum deflection of $L/360$. 23/32 commodity OSB will typically satisfy this deflection requirement for most conditions. However, if the long side of the panel is installed parallel to the floor trusses, it will not satisfy this minimum deflection requirement for most loading conditions. This panel orientation sometimes occurs because of framing direction changes or by accident. Commodity OSB is also prone to swelling on the edges. Swollen edges can lead to corresponding areas of gypsum concrete that are less than the target thickness. These thinner areas would be the most likely place for a crack or fracture to occur in the gypsum underlayment.

AdvanTech® Flooring first appeared in the market in 1997 as a solution to the problems builders were having with their OSB and plywood subfloors swelling and delaminating. Although it is manufactured in a process similar to typical OSB, the recipe, engineering and quality control measures are quite unique. In addition to putting more wood into the panel which results in higher density and durability, AdvanTech utilizes MDI resin technology as the primary binder. MDI resins are generally waterproof and do not contain formaldehyde. The resins used to produce AdvanTech are the reason why it outperforms its competitors when it comes to moisture resistance. AdvanTech edges will not swell. This leads to a gypsum underlayment that has a consistent thickness throughout the entire floor without weak spots over swollen panel edges. Please see the chart below for AdvanTech water absorption properties compared to commodity OSB and plywood.



In addition to its water-resistant properties, AdvanTech also has strength and stiffness performance that exceeds typical flooring panels. Most wood structural panels only have to meet the minimum performance requirements of PS2. PS2 is the product standard referenced in the International Building and Residential codes that establishes minimum performance values for OSB and plywood flooring and sheathing. Huber Engineered Woods chose to pursue an elevated set of performance requirements that surpasses the PS2 minimums. Design values for AdvanTech are published in an International Code Council Evaluation Service (ICC-ES) Evaluation Service Report (ESR-1785). ICC-ES is a nonprofit, limited liability company that does technical evaluations of building products, components, methods, and materials. The design values for 23/32" AdvanTech exceed the strength and stiffness values published for 24oc OSB and plywood. This means that it will not deflect like commodity OSBs even when installed parallel to supports. Less deflection means less movement and less chance of cracking the gypsum underlayment and the finished floors.



AdvanTech Flooring is an excellent substrate for gypsum underlayment. Please follow the manufacturer installation instructions for installing poured gypsum underlayment. Visit advantechperforms.com or contact our technical services department at 800-933-9220 ext. 2716 for more information.

3.) ICC-ES ESR-1785

4.) 2005 edition of the AF&PA American Wood Council's, *Allowable Stress Design (ASD)/LRFD Manual for Engineered Wood Construction*.