

# BONDING TILE DIRECTLY TO ORIENTED STRAND BOARD (OSB)

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Wood-based panels, like Oriented Strand Board (OSB), expand and contract with changes in moisture content. Therefore, according to the 2012 TCNA Handbook, they are not recommended as a substrate material for direct bonding of ceramic or natural stone tile with cement mortars. Plywood manufactured with a fully waterproof adhesive, and with an exposure durability rating of Exposure 1 or Exterior, may be used on interior, residential, horizontal surfaces when installed in accordance with ANSI A108.1 Article 3.4, for direct bonding.

OSB panels are manufactured under the provisions of APA PRP-108 or PS 2-92 and are comprised of soft, thin wood strands or chips, which are held together with waterproof adhesives. Plywood panels are thin veneers of wood glued together to form the desired panel thickness. Although both panels perform well from a structural standpoint, it is the surface of each which must be considered for direct bonding of ceramic tile. OSB will change dimensionally as the moisture in the environment and board changes. This regular expansion and contraction with changes in the environmental humidity will weaken the bond of a cement mortar to the OSB surface. Exterior grade plywood is an acceptable substrate because the latex or polymer-modified mortar is bonding directly to a continuous wood surface.

In cases where OSB is to be used as an underlayment on interior floor installation, it must be properly treated before the installation of tile. If direct bonding of the ceramic tile to the OSB is required, a membrane must be installed on the OSB, before ceramic tile installation, that will compensate for the movement in the OSB due to changes in the moisture content. Custom® Building Products' RedGuard® Waterproofing and Crack Prevention Membrane, applied at 30 mils wet film thickness, will provide the needed protection. As a waterproofing agent, CUSTOM®'s RedGuard® will protect the OSB from moisture in the thin-set mortar and subsequent surface exposure. As an anti-fracture membrane, CUSTOM®'s RedGuard® will prevent any movement in the OSB from transferring to the tile assembly. Once the RedGuard® is dry, tile can be safely installed to the RedGuard®-coated OSB with one of CUSTOM®'s polymer-modified thin-set or medium bed mortars.

Note: OSB must be protected from water or moisture exposure during shipping and throughout the installation process. The underside of an OSB subfloor must be properly protected from moisture to prevent the sheets from warping.

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