



## **wedi TECH TIP October 2006**

### **Exterior Applications With wedi Building Panels**

#### **Basic Substrate Preparation**

Prior to beginning an installation, it is necessary to insure that local building codes are met; especially all fire protection and structural requirements. Regarding exterior applications, wedi building panels can be used on vertical (wall) or sloped and roofed horizontal substrates.

On vertical surfaces, minimum 1/2" thick wedi building panels should be installed with latex-modified mortar (per ANSI 118.4) and mechanically fastened with wedi Fasteners (8 per 3' x 5' sheet) to the plywood or other substrate. All building panel joints have to be tightly butted and set in a staggered pattern. On horizontal surfaces, regular wedi floor installation instructions apply, depending upon the substrate to which the building panel is adhered. All building panel seams and fastener head penetrations have to be treated with wedi Joint Sealant or wedi Waterproof Sealing Tape.

#### **Tile & Stone Application on Facades and Exterior Floors**

On facades, technical requirements may necessitate that ceramic tile and natural stone veneer is adhered or anchored. Lightweight and thin tile and stone is normally bonded using a high flex latex-modified mortar or an epoxy setting compound. According to the Marble Institute of America (MIA), stone should be adhered with 100% bonding, only in projects where the height of the stone is maximum 96" off grade and the stone shall have a maximum dimension of 24" x 24" with a thickness of 5/8". Adhesion practice should be limited to this height and stone size. Grout fillers are to be chosen capable of withstanding eventual prolonged exposure to moisture and the occurrence of structural movement. Expansion joints are needed in all cases.

Bonding through all types of mortar requires careful consideration of shear strength properties handling the weight applied on the substrate and mortar. When hard setting natural stone is used, structural movement often results in cracks because of expansion and contraction at different rates than the substrate and mortar. As such, independent anchoring should be considered in addition to expansion joints filled with flexible sealant 2 to 4 times larger than anticipated movement. Please be advised that some tile and stone is highly absorbent and will increase the weight of the surface which can lead to either mortar bond or fastener failure in anchoring applications.

This leads to another important issue, exposure to repeated freeze and thaw cycles. Absorbed water in mortar and porous stone veneer can expand its volume approximately 10% and lead to damage. Sealing may be required in certain applications and geographic regions. This is especially a problem found on horizontal substrates such as balconies and terraces. Epoxy grout fillers and thinsets are highly recommended on installations where there is standing water on the surface. wedi building panels should not be installed on any exterior, horizontal substrate which is not properly sloped or roofed.

#### **Stucco Application On Facades**

Although the minimum thickness of wedi building panels used for stucco application in exterior areas is 3/4 inches, also consider the insulation/R-value of thicker panels such as 1", 1 3/16", 1 1/2" or 2". In order to avoid chromatic aberrations due to joint taping, cover the entire wedi building panel with a wide fiberglass mesh tape embedded in a layer of high-flex latex modified mortar (per ANSI 118.10) or prime the wedi building panel surface with 2 to 3 layers of primer. Stucco should be applied in a minimum thickness of 3/8".

