



**CERAMIC TILE INSTITUTE OF AMERICA, INC.**

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## **CTIOA FIELD REPORT 98-6-4**

### **SUBJECT: FACTORY APPLIED BACKINGS ON STONE TILE**

Over the past several years, the demand for stone tile has increased dramatically. This has also given rise to a departure from the traditional installation methods normally associated with stone, as fabrication processes became more sophisticated. A leisurely stroll through any metropolitan area with its intermingling of old and new edifices, can impart to the not so casual observer a history lesson on this metamorphosis. Any office building lobby incorporating stone flooring would be a prime example.

If the building was constructed just a few decades ago, chances are the stone is quite large; 2' - 3' - 4' modules, and is also quite thick  $\frac{3}{4}$ " - 1  $\frac{1}{2}$ " - 3". Now take a look at its contemporary counterpart where it is not uncommon to see 1' modules with a substantial reduction in thickness  $\frac{3}{8}$ " -  $\frac{1}{2}$ " -  $\frac{5}{8}$ ". These thinner modules completely redefined the dynamics of the in-place assembly, in that they rely exclusively on the stability of the substrate and setting materials to impart dimensional stability and strength.

### **ENTER THE GRADE RATING OF MARBLE**

Having to do with fabrication and working qualities, and the methods for strengthening fabricated modules, thick vs. thin. The grade rating is nomenclature addressing the veining generally specific to marble and the fact that some veining can impart a weak plane that *will* cause the marble to fracture more readily along that vein.

The rating, A through D, deals with the tendency of the stone to fracture with "A" being least likely, "B" being somewhat more likely, and well, you

get the picture.

With thicker modules, the stone can be reinforced by cutting slots in the back of the module, perpendicular to the weak line or vein, and inserting reinforcing (set with epoxy) such as pencil rod. With thinner modules, this method becomes impractical and so alternate ways of reinforcing have been introduced. These methods vary from fabricator to fabricator but usually involves the use of an epoxy or polyester resin that laminates a reinforcing material to the back of stone.

### **GETTING TO THE POINT**

As we all know (from thinset 101) cement based setting materials do not bond well to smooth impervious surfaces, such as, epoxy or polyester. As a matter of fact, you will find that our Industry Guidelines do not include epoxy surfaces as a suitable substrate for dryset portland cement mortar or latex-portland cement mortar. This being the case, the proper bonding mortar to use would be epoxy. At the very least, check with your local setting materials supplier for an alternate that is compatible. In the meantime, it is a good idea not to bid stone tile installation until you have seen a sample of the stone.