Stone – Back to Basics

TRAVERTINE

WORDS: Jim Mann

When most people think of travertine they think of the Colosseum in Rome and its history of use over thousands of years, now this unique stone type has made a comeback – but what is it?

ABOVE: Filled cross-cut travertine used within an entrance lobby. The mottled appearance can assist in hiding wear in high traffic areas. BELOW: Italian cross-cut travertine in raw form (close up and block form). Note the elongated cavities and variations in tone through the beds.

How does Travertine differ from Limestone?

Although both are composed of calcium carbonate, travertine is different from limestone due to its mode of formation and structure. For limestone, the predominant source of calcite is from marine organisms that either die or secrete material that settles to the ocean floor. The limestone subsequently formed may be reinforced at a later date by secondary calcite provided from supersaturated waters.

Travertine owes its origins to limestone deposits that have been dissolved by warm carbon dioxide laden (slightly acidic) water. When this carbonate-saturated water resurfaces at springs, the change in pressure and temperature results in the release of the carbon dioxide causing precipitation and recrystallisation of the calcium carbonate. In most cases the precipitation settles on aquatic plants eventually encasing the vegetation within the newly formed stone producing the typical pores or spongy appearance.

The elongated cavities found in most travertine also change its physical structure and characteristics compared to limestone. Although most stone types have some form of 'grain' or rift which can vary the stones' appearance to some degree, the porous structure of travertine can change the stone markedly when viewed in different orientations.

Appearance

Travertine is typically light cream to tan in colour although some localised deposits have been found to have a light grey-blue colouring. The stone can be produced in a range of finishes including polished, honed, sawn, tumbled and grit blasted.

As discussed earlier, travertine is a highly anisotropic material which gives the stone a distinctly different appearance depending on which way it is cut. Cutting travertine perpendicular to the bedding accentuates the grain and is identified as vein-cut.

The vein-cut finish exposes the natural elongated cavities within the stone which accentuate the texture of the stone but may also trap dirt and general grime. Filling the open cavities on one face of the slab with a cement or resin based filler makes cleaning easier by producing a consistent surface finish.