Spray-Lock®
CONCRETE PROTECTION

SCP and Shotcrete

Shotcrete is concrete or mortar that is pumped through a hose and sprayed at significant velocity onto a surface. Because the material must stick to slopes and vertical surfaces the consistency (slump) is usually dryer than conventional concrete. As with conventional concrete, especially with low water to cementitious (w/cm) ratios, curing plays an important role in developing desired durability properties. Moist curing is widely regarded as the best method for maintaining moisture levels in both conventional concrete and shotcrete. Moist curing can be difficult to maintain properly, along with sometimes being a source of labor, safety, and environmental issues.

Spray-Lock Concrete Protection's (SCP's) products can provide an efficient and cost-effective alternative to moist curing for shotcrete. SCP's colloidal silica is spray-applied to the surface of the shotcrete where it penetrates into the available capillary pore space to react with available alkalis to form primarily calcium silicate hydrate (C-S-H), the same reaction product that cement and water produces that gives concrete most of its strength and durability properties. By filling the accessible pores, SCP products hold water in the shotcrete that the cement needs. External water such as from pools and lagoons is also kept out of the shotcrete's matrix, allowing SCP products to be an important part of any shotcrete waterproofing solution.

SCP products are the result of a proprietary application of colloidal silica technology. Over the course of the last ten years, SCP's colloidal silica technology has proven to greatly reduce permeability of a variety of traditional concrete designs, including shotcrete. SCP products can be an important part of any shotcrete waterproofing solution.

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