George Bush Intercontinental Airport Repair

Houston, TX, USA (2015)

PRODUCTS USED:

Krystol T1® Krystol Plug™ Krystol Repair Grout™

OWNER:	ENGINEER:	APPLICATOR:	DISTRIBUTOR:
Houston Airport System	CDM Smith	Dry Concrete	Builders Products

BACKGROUND

The George Bush Intercontinental Airport opened in 1969 and has undergone numerous expansions since. Despite those expansions, at some point, groundwater infiltrated the inter-terminal train (ITT) underground tunnel. Because the ITT acted as a passenger train service that connected to all airport terminals and a hotel, immediate repairs were needed. However, Houston Airport System would only have a limited amount of time each night to shut down the ITT to conduct the repairs. So they needed a solution that could be applied to the inside of the tunnel that could also be effectively applied in short windows of time.

SOLUTION

The repair team chose the Krystol Leak Repair System and Krystol T1 to provide blindside integral Krystol® crystalline waterproofing, which would address the most severe cracks and leaks that were threatening the tunnel's serviceability. The Krystol T1 was also chosen for its ability to penetrate concrete walls and stop water under hydrostatic pressure. The choice was a natural one as the product met the US Army Corps of Engineers' standards in the project specification, including the ability to reduce the permeability of concrete and increase its chemical resistance.

After selecting such products, the repair team first chiseled a chase for the leaking cracks and applied the fast-setting Krystol Plug, which halted the leaks immediately. Then, they applied Krystol Repair Grout over the plug to permanently stop the water. The team went on to apply some Krystol T1 over the leak repair and to the concrete walls to protect against future water intrusion. The last two products contained Krystol technology, which chemically reacts with water and unhydrated cement particles to form insoluble needle-shaped crystals that fill capillary pores and micro cracks in the concrete and block the pathways for water and waterborne contaminants. A unique feature of the Krystol technology is its ability to lie dormant indefinitely within the concrete. If a new crack should form and water begins to penetrate the concrete, the technology will react to seal the leaking location, giving the repair and the concrete a self-sealing ability.

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