

# JFK, AMERICAN AIRLINES NEW PASSENGER TERMINAL



ARMOR JOINT REPAIR



HONEYCOMB REPAIR

## PROJECT DESCRIPTION

The new pedestrian tunnel for American Airlines terminal at JFK Airport, in New York, runs 25 feet under finished grade, 1500 feet in length, with a ground water height of 12' at high tide. Conventional methods of waterproofing were utilized on tanking the tunnel. Dewatering was accomplished using grout injection.

The tunnel was constructed with a 3'- 5' thick structural mat slab with conventional PVC waterstop and membrane for a water tight seal.

During the initial phase of concrete work however, shrinkage cracks, cold joints and construction joints in the walls and floors began to leak. Over a 1 year period, several methods were utilized to try to repair these leaks. Results were not providing a water tight seal. Faced with serious construction delays, alternative methods were commissioned.



COLD JOINT REPAIR

CONSTRUCTION JOINT REPAIR

Kryton International's Krystol Technology of capillary waterproofing system was utilized on cold joints, construction joints, and shrinkage cracks. In areas where crack openings exceeded .5mm the Krystol crack repair system was installed. Hairline cracks were coated with Kryton T1-T2 surface applied capillary waterproofing, under cold weather conditions.

The results were 100% successful. Surface applied coatings, Krystol T1 and T2, were able to self seal even cracks greater than .75mm when given enough time to achieve crystallization within the matrix of the substrate. This success prompted an unusual attempt by the Crystal application team to repair a possible shifting armor joint connecting two 500 foot concrete tunnel sections. These complex repairs were conducted under freezing temperatures with a continuous flow of 40 degree ground water, at 5 PSI. The repairs were further complicated with a pressure test at 15 PSI for a period of 1 hour, 7 days after the repair. The Crystal team's attempt to repair 87 feet of armor joint, was also 100% successful.

## PARTICIPANTS

Owner / Client:	American Airlines
Architect:	DMJM Harris
Engineer:	DMJM Harris
Contractor:	VRH TORCON
Construction:	VRH TORCON
Sub Contractor:	Peter Scalamandre & Sons
Repair Contractor:	The Crystal Group, LLC
Repair Supplier:	Kryton International, Inc.