KING

Mixing Strength With Satisfaction

TURCOT INTERCHANGE, MONTREAL, QC

MS-D1 SY

PROJECT:	Rehabilitation of Turcot Interchange Montreal, QC
OWNER:	Transports Quebec (MTQ)
SPECIFIER:	SNC Lavalin Montreal, QC
CONTRACTOR:	Béton Projeté M.A.H., Quebec, QC
PRODUCT:	MS-D1 SY
QUANTITY:	80 m^3 (2800 ft^3)
COMPLETION:	Summer 2004

The Turcot Interchange is located in Montreal and serves as the junction of Highway 20, Highway 720 and Highway 15. It is vitally important for through traffic and for local traffic. This interchange, with an area of 71000 m^2 (17 acres), has 7.7 km (4.75 miles) of ramps overlapping on three levels, not counting the underlying municipal road network and railway system. The spans are designed as reinforced concrete caissons. Construction was completed in 1970. Since then, it has been exposed to the rigours of the Quebec climate, and thus to freeze-thaw cycles and deicing salts. After 30 years of service, the concrete is severely damaged in several places.

In summer 2004, Transports Québec decided to carry out repair work on certain particularly damaged spans, over a total surface of approximately 1000 m^2 (10750 ft^2). To perform this work, Transports Québec specified the use of dry mix shotcrete. The shotcrete mix used for the Transports Québec repairs was the result of the joint efforts of King Packaged Materials Company and Transports Québec. This mix contains, among other ingredients, an air entraining agent (AEA), synthetic fibers and silica fume. The AEA is used to increase the resistance to freeze-thaw cycles and to salt scaling. The synthetic fibers considerably reduce the plastic cracking potential. The silica fume allows the mix to bond well to the substrate during shotcreting and largely reduces the concrete's permeability, thus blocking the passage of chlorine ions to the reinforcing steel.

The work was performed on schedule by the shotcrete contractor Béton Projeté MAH, which has 20 years of experience in the shotcrete field.

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