



Mixing Strength With Satisfaction

CHATEAU PARK CONDOMINIUM RESIDENCE, TORONTO, ON

MS-D1 ACCELERATED SHOTCRETE

PROJECT:	Chateau Park Condominium Residence, Toronto, ON
SPECIFIER:	Alterra Group of Companies Toronto, ON
CONTRACTOR:	Deep Foundations Contractors Inc. Thornhill, ON
PRODUCT:	MS-D1 Accelerated Shotcrete
QUANTITY:	50 m ³ (1750 ft ³)
COMPLETION:	Summer 2005

After investigating shotcrete/soil nailing as an alternative measure to support ground after excavation for civil construction projects, Deep Foundations Contractors Inc contacted King Packaged Materials Company to discuss options for shotcrete materials supply. In choosing to work with King, Deep Foundations was also aware of King's ability to provide assistance with equipment requirements through their Minequip division. Minequip is the eastern Canadian distributor for Sika Corporation's line of Aliva shotcrete equipment.

The decision was made by Deep Foundations to proceed after the pile installation at Alterra's Chateau Park job site in Toronto using King's MS-D1 Accelerated Shotcrete. Soldier piles were driven to a depth of 9 m (29.5 ft), 2 m (6.5 ft) below the excavation depth and standard lagging was used for the first stage of excavation. After installation of the tiebacks, excavation resumed to a depth of 3.5 m (11.5 ft) below grade. Wire mesh was then installed over the "I" beams and fastened in the middle of the bays. Rebar was driven into the soil behind the bay and screen was welded to the rebar. This step was necessary to prevent the screen from vibrating during the shotcrete process. Each bay measured 3 m (10 ft) wide by 1.5 m (5 ft) high and shotcrete was to be applied at a thickness of 7.5 cm (3 inches). After the installation of the screen, the bays were shot at a rate of 1 every 15 minutes. The third and final excavation of 1.5 m (5 ft) was then completed and the screen and shotcrete process repeated.

The shotcrete machine chosen for the project was an Aliva AL-246.5. This rotor style dry-mix shotcrete machine has a theoretical output of 1.7- 4 m³/hour (2.25-5.25 yd³/hour). The machine was set-up at ground level and the water and conveyance hoses were extended into the excavation.

The project was completed in six days, 12 days quicker than the 18 days required for standard lagging.

