

**REPORT DATE** June 28, 2007

**PAGE:** 1 of 1

Xypex Chemical Corporation  
13731 Mayfield Place  
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**ATTENTION:** Mr. Vic Barber

**PROJECT:** CDOT - City of Boulder, Colorado, Box Culvert Concrete

**SUBJECT:** Water Permeability Testing of Concrete with Xypex Admix C500

Concrete samples were cast by Lafarge North America in Colorado and shipped to Xypex Chemical Corporation's lab in Richmond, BC. The concrete is part of a project for a box culvert and has a w/cm of 0.42 and 20% Class C fly ash. Samples were cast of control concrete and concrete with Xypex Admix C500 added at a rate of 1.9% of total cementing materials. The concrete was cast in October of 2006 and was shipped to Xypex Chemical Corporation's lab in Richmond BC for water permeability testing and kept in a moist condition. Testing was completed on three replicate samples (100 diameter x 200 mm long cylinders) from each mix. Testing was completed by McGrath Engineering Ltd using the water penetration procedure according to DIN 1048 (similar to CRD 48) with modifications as noted. Results are as follows:

Property	Control	Xypex
Average Depth of Penetration (mm)	10.64	7.80
	5.94	6.50
	<u>9.76</u>	<u>3.96</u>
	<b>8.8 (ave)</b>	<b>6.1 (ave)</b>
Maximum Depth of Penetration (mm)	20.62	11.23
	8.76	9.16
	<u>11.17</u>	<u>6.83</u>
	<b>13.5 ave</b>	<b>9.1 (ave)</b>

Note: Sample diameter is 102 mm which is less than 150 mm minimum in standard  
Driving pressure was 0.28 MPa which is less than 0.50 MPa in standard

The results show a reduced depth of water penetration (reduced water permeability) in the Xypex treated concrete.

per

  
Patrick F. McGrath, Ph.D., P.Eng.

