

POINTE DE LA PRAIRIE LIGHT HOUSE, L'ISLE-AUX-COUDRES, QC

MS-D1 STEEL FIBER SHOTCRETE

PROJECT:	Rehabilitation of the Pointe de la Prairie Light House, L'Isle-aux-Coudres, QC
CLIENT:	Canadian Coast Guard, QC
SPECIFIER:	BPR Inc., Quebec, QC
CONTRACTOR:	Cimota Inc., Quebec, QC
PRODUCT:	MS-D1 Steel Fiber Shotcrete
QUANTITY:	170 m ³ (6000 ft ³)
COMPLETION:	Fall 2004

The Pointe de la Prairie light house is located on the North shore of the Isle-aux-Coudres island across from Baie-St-Paul in the St. Lawrence River. This lighthouse was built in 1972, and has been exposed to extremely severe environmental conditions. Exposure to salt water, continuous freeze-thaw cycles and impact from ice flows, have contributed over the years to severe deterioration of the concrete that makes up the base of the light house. In some cases, the concrete deterioration was so severe that in some areas it reached nearly 1m (3.3 ft) in depth.

In the summer of 2004, The Canadian Coast Guard elected to tender a project to conduct a much needed, major rehabilitation of the lighthouse. The consulting engineers, BPR Inc. recognized the need to come up with a system that would meet the challenges associated with the difficult access while providing protection against the severe environmental conditions.

Working with engineers from King Packaged Materials Company, BPR Inc. specified a shotcrete mix containing silica fume, steel fibre, granite aggregate, air entraining admixture and a set time accelerator. The air entraining admixture provided improved durability and the steel fibre and granite aggregate were incorporated to provide resistance to the impact from ice. The set time accelerator and the silica fume were used to reduce the risk of wash out created by the rapidly moving tides and waves.

To ensure the project would be finished in time to meet the Fall, 2004 deadline, Cimota Inc. elected to use two Aliva AL 246 shotcrete machines, supplied by King's Minequip division and two ACI certified nozzelmen. This challenging shotcrete rehabilitation project was successfully completed on time despite the difficult weather conditions that disrupted shooting schedules. The skill of the Cimota certified nozzelmen and the quality of the specially designed King shotcrete mix were evident by the overall quality of the completed project.

This project was recognized at the 2006 American Shotcrete Association Awards Banquet where both King and Cimota were presented with The Outstanding Shotcrete Project Award in the Repair and Rehabilitation Category.

