

Johnson Street Bridge

Victoria, BC, Canada

PRODUCT USED:
Con-Fume®

OWNER:

City of Victoria

ENGINEER:

MMM Group

CONTRACTOR:

PCL Construction

READY-MIX SUPPLIER:

Ocean Concrete

BACKGROUND

The third and current version of Johnson Street Bridge was built at its present location in Victoria, British Columbia, in 1924. A 2009 assessment of the existing bridge identified extensive corrosion to the bridge's structural beams, obsolete mechanical and electrical systems, and a seismic vulnerability. It highlighted the fact that a construction team was going to have to replace such an important transportation connection into Victoria's central business, entertainment, and tourism districts. 30,000 crossings are made daily to get to those regions, so leaving the bridge as is was not an option.

To find a suitable replacement solution, the City of Victoria retained MMM Group, a Canadian engineering firm with expertise in movable bridges. Under the city's contract with them, the group would provide engineering services for the design and project management of a replacement option. To that end, MMM Group decided the best solution was to develop the largest single lift bascule bridge in Canada. The new bridge's piers and foundations would be designed to serve Victoria for the next 100 years. The City of Victoria approved of this long-lasting design, allowing construction to start in May 2013.

SOLUTION

A key ingredient for the concrete needed for this type of bridge is silica fume. As a pozzolanic material used in concrete mix designs, silica fume helps produce high-performance concrete for increased strength, impermeability, and durability.

To ensure MMM Group had the highest quality version of this concrete, Kryton supplied over 12 tonnes of top-level CSA- and ASTM-approved Con-Fume for approximately 525 m³ (18,540 ft³) of high-performance concrete, which was supplied by Ocean Concrete. Manufactured in Calgary, Canada, Con-Fume was the perfect choice of silica fume for Ocean Concrete's ready-mix supply. It provided price assurance and supply availability in a way that worked for a demanding, budget-conscious project like Johnson Street Bridge. It was also engineered for enhanced flowability in pneumatic and storage equipment, making Con-Fume a cost-effective and reliable solution.

