ELECTROCHEMICAL TREATMENTS

Vector™

Norcure® Chloride Extraction

Project History

Chloride Extraction Field Trial on Burlington Skyway

Structure: West Column, Pier S19, Burlington Skyway

Location: Burlington, Ontario, Canada

Client: Ontario Ministry of Transportation

Area Treated: 331.5 ft² (30.8m²)

Duration: 8 weeks

Contractor: Concrete Protection Systems

Project Description:

Built in 1955, the Burlington Skyway was designed with less reinforcement than the typical bridge column, which made this site a perfect candidate for the first field trial use of Norcure Electrochemical Chloride Extraction. The system was installed on the lower 13 ft (4 m) of the west column. Only three sides of the square column were treated, leaving the north side to act as a control area. Throughout the duration of the treatment, the system was monitored very closely, often daily, to have sound results throughout testing. After treatment was completed, it was found that the percentage of chloride ions removed above reinforcing steel was as high as 87% in some areas. Corrosion potential results showed that 6 months later, after depolarization, the reinforcement was in a passive and noncorroding state. MTO has continued to monitor the pier since the application of the Norcure System. These long term results show how ECE's effectiveness has withstood the test of time.

(ECE) in North America. The Ontario Ministry of Transportation funded the field study and built upon the SHRP Contract C-102A findings which indicated the technique was feasible.

<200 Passive Range 200-350 Corrosion Activity Uncertain >350 Active Corrosion Range	North Face (Untreated)			West Face (ECE Treated)		
	<200	200 - 350	>350	<200	200 - 350	>350
Pre-Treatment	0	85	15	0	96	4
1 Yr. After (1990)	41	59	0	98	2	0
2 Yr. After (1991)	41	59	0	100	0	0
3 Yr. After (1992)	26	74	0	96	4	0
4 Yr. After (1993)	26	70	4	98	2	0
5 Yr. After (1994)	19	74	7	96	4	0
6 Yr. After (1995)	26	59	15	96	4	0
7 Yr. After (1996)	30	63	7	96	4	0
8 Yr. After (1997)	11	78	11	96	4	0
9 Yr. After (1998)	15	78	7	96	4	0
15 Yr. After (2004)				100	0	0

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