

Vector™**Norcure® Re-alkalization****Project History****Re-alkalization at Xerox Document University****Structure:** Xerox Document University**Location:** Leesburg, Virginia, USA**Client:** Xerox Corporation**Duration:** 2 weeks**Contractor:** Vector Construction Inc.**Project Description:**

The Xerox Document University campus complex consists of a number of concrete frame buildings with many elevated concrete walkways supported by concrete columns. In construction of these columns the architect wished to achieve a rather unusual marble like appearance to the concrete surface.

In order to obtain this desired effect, a very fluid concrete mix, with high water content, was poured into steel forms. While this did accomplish a very smooth and uniform surface, it also meant that the hardened concrete was extremely porous. Due to this porosity, the concrete carbonated to beyond the depth of the reinforcing steel. It was then only a matter of time before there was evidence of reinforcing steel corrosion resulting in spalling, delaminating and cracking appearing in many locations throughout the complex. The University, realizing that this would now be an ongoing maintenance problem, wanted to find a one time long term solution. It was therefore decided to use the Norcure Re-alkalization process, as this would not just treat the physically

damaged areas, but would treat the entire concrete area that was carbonated but had not yet become physically damaged.

The above photograph shows the results of a simple test for carbonation in concrete both before and after the Norcure Re-alkalization treatment. The magenta colored areas denote non carbonated concrete, while the uncolored area shows carbonated concrete. At the end of the treatment time which was only two days the carbonation had been eliminated and the corrosion process halted.

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