CORTEC CORPORATION

ENDURACON TECHNOLOGIES
Quality Admixtures for Concrete

Proven products for the fast track

Concrete gains strength within 24 hours to keep project ahead of schedule

Quality suppliers, quality materials and the latest innovations in concrete technology contributed to M.A. Mortenson Co. bringing the Wells Fargo Home Mortgage parking garage in ahead of schedule.

The concrete set up so uniformly, finishing, float work and brooming operations were completed on one end of a deck while pouring continued on the other end. Even with the low water content, the mix exhibited excellent finishing properties and the need for an evaporation surface retardant was very minimal.

The innovative concrete mix was low in water content, but flowed easily and consistently.

Objective:

Complete an 1,800-vehicle, six-level parking garage within one year of project start. Each deck pour of the total 22,000 yards of concrete must meet or exceed 3000 psi strength within 18 to 24 hours.

Project:

The Wells Fargo Parking Garage is adjacent to the newly renovated home of the Wells Fargo Home Mortgage division in the Phillips neighborhood of Minneapolis. Official starting day was June 18, 2001; half of the ramp opened May 1, 2002, and the remaining sections were completed ahead of schedule.

Team meets success with right combination of new concrete technology

With 365 days to construct a six-level post tension parking garage, concrete specifications called for a high early, innovative concrete mix. The assignment was to create a mix utilizing Type III cement that would achieve strength within 18 to 24 hours, rather than the typical three days. The mix also had to minimize shrinkage while not compromising quality. The solution? A team of construction specialists put together a new – and successful – combination of corrosion inhibiting and superplasticizing chemicals that met the project's strict schedule and quality requirements. The 3000 psi goal was met within 18 hours for some pours, with the average at 20 to 24 hours.

Key ingredients were Cortec Corp.'s MCI-2005 NS, a liquid admixture that provides corrosion protection, and Enduracon Technologies' Enduracon HR, a liquid superplasticizer that achieves early strength, workability and predictable setting times.

Project Stats

Owner:

Wells Fargo Home Mortgage

Structural Engineer:

Meyer Borgman & Johnson, Inc.

Minneapolis

Contractor:

M.A. Mortenson Co., Minneapolis

Concrete Supplier:

Aggregate Industries, Minneapolis

Concrete Pumping:

E-con-Placer, St. Paul

Concrete Corrosion Inhibitor:

Cortec Corporation, St. Paul

Concrete Superplasticizer:

Enduracon Technologies, St. Paul

Perspectives:

"Independent test data indicates that the MCI 2005 NS provides effective corrosion protection with no increase to the shrinkage potential to the mix design."
- Mike Ramerth, P.E., structural engineer with Meyer, Borgman & Johnson, Inc.

"There is far less shrinkage from a visual standpoint. These products performed, and have higher strength gaining properties using Type III cement."
- Mike Anderson, superintendent for M.A. Mortenson Co.

"Enduracon Technologies' support, both at the plant and in the field, was outstanding. Aggregate Industries appreciates having Enduracon supply these types of projects."
- Mark Bintzler, director of technical services for Aggregate Industries

"These products are doing what they were promoted to do. They're a good combination to work with."
- Pete Nelson, project manager for M.A. Mortenson Co.

"The Enduracon HR superplasticized concrete provided our pumps with a very workable, fluid and cohesive mix. This concrete mix enabled us to pump at lower pressures, providing a significant increase in productivity."
- Rob Tousignant, president of operations for E-Con-Placer.

The Cortec-Enduracon combination offers results

MCI-2005 NS is a proven, long-term corrosion protection inhibitor that doubles the time to initiation of corrosion and reduces the corrosion rate up to five times over the life of the structure. It also reduces the effects of shrinkage and cracking, of particular concern for this project due to the fast strength gain the Enduracon HR produced. The project's construction superintendent reported, in observations from under the decks, that much less cracking due to shrinkage occurred than he has seen on projects with other corrosion inhibitors.

The predictable setting time, the early strength and the concrete's finishing quality decreased overtime and significantly helped keep the project four weeks ahead of schedule.

For more information

on how you could benefit from the innovative products available from Cortec Corporation and Enduracon Technologies, contact:

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