

ADVA® 405

High-Range Water-Reducing Admixture

ASTM C494 Type A and F, and ASTM C1017 Type I Admixture

Building on the science of self-consolidating concrete.



The Western University of Health Sciences Health Education Center under construction
Ponoma, California

Western University of Health Sciences needed room to grow – with a new four-story, 176,000-square-foot Health Education Center. With the University's location in the well-known seismic area of Southern California, one of the challenges for the structural engineering and design firm, Perkins + Will, was to build the Center with optimal strength for safety.

ADVA® 405 takes the science of SCC production to a new level. With its control of static and dynamic segregation resistance, and the latest air management technology, it makes consistent SCC production simple.

With this criteria in mind, structural walls were designed with rigorous steel reinforcement and concrete strengths greater than 6,000 psi. The challenge was consolidating 2,000 cubic yards of concrete within the formwork and still meeting the impressive strength requirements.

To ensure their proposed mix design was up to the task, Robertson's, the leading producer of ready-mixed concrete in the Southern California area, worked with Grace Construction Products to test Self-Consolidating Concrete (SCC) mix designs that could meet the specific Slump Flow, VSI, J-Ring and Stability project requirements. The team pitted a multi-component admixture design – consisting of a conventional high-range water reducer, a viscosity modifying admixture and a retarder admixture – against Grace's new

ADVA® 405, a newly developed all-in-one SCC admixture designed for ready-mix concrete production. The easy to use single component ADVA 405 admixture provided better flow while meeting all of the specification criteria.

Before the project started, Robertson's produced a sample of their SCC mix with Grace's ADVA® 405, and placed it into a small mock wall section to test its flowability and consolidation. Once hardened, it was clear the SCC passed the trial with sound consolidation and impressive surface finish. Based on Robertson's ability to deliver a superior SCC product, coupled with their performance and mix data, they were awarded the opportunity to supply SCC for the entire project.

During the construction phase, the use of SCC on the job eliminated the need for vibration and

As part of the 400 Admixture Series for Ready-Mix SCC, ADVA® 405 offers a range of valuable advantages including greater concrete stability, sustained flow retention, and with its greater consistency, reduced demand for on-site quality control.

manual compaction, reduced equipment requirements, and improved job productivity with less labor required and faster, easier placement. The use of ADVA® 405 provided the added benefit of ensuring a consistent and highly flowable mix from batch to batch on the job site, even in the wide-ranging Southern California temperatures. Thanks to its best in class moisture and air control, ADVA® 405 enabled the concrete to tolerate daily material and water variation, which made quality SCC easier to produce. As a result, of the 2,000 cubic yards of concrete produced, not a single load was rejected due to inconsistent SCC.



Nearly 2,000 cubic yards of highly flowable Self-Consolidating Concrete (SCC) with ADVA® 405 were poured to create the Center's strong structural walls – built to withstand seismic activity.



ADVA® 405 enabled the SCC mix to consolidate easily around extensive steel reinforcement within the formwork while still achieving the specified 6,000 psi compressive strength.

For Western University of Health Sciences, they're expanding for their future – with some help from advances in the science of concrete.

PROJECT CREDITS:

Project: Western University of Health Sciences Health Education Center, Pomona, CA

Concrete Supplier: Robertson's Ready Mix Concrete, Inc., Corona, CA

General Contractor: DPR Construction, Inc., Pasadena, CA

Structural Engineer/Design: Perkins + Will, Los Angeles, CA

Grace Products: ADVA® 405

www.graceconstruction.com

North America Customer Service: 1-877-4AD-MIX1 (1-877-423-6491)

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