

A Soaring High-Rise with Innovation at Its Core

ADVA® 408 high-range water reducing admixture selected for high-rise project.

Project	Spire, Denver, CO
Owner	Nichols Partnership Inc., Denver, CO
Architect	RNL Design, Denver, CO
General Contractor	JE Dunn Construction, Denver, CO
GCP Solution	ADVA® 408 High-range water-reducing admixture



Project Profile

Building impressive residential towers

One of the tallest residential towers in the Western United States, Spire is a \$175 million residential high-rise building standing 41 stories high with 503 condominium units. At the building's heart are two massive concrete cores that structurally support concrete elevated decks and house the elevator units. With the thick core walls containing heavy steel reinforcement, it created an ideal application for self-consolidating concrete (SCC) – a highly flowable concrete that can be placed without vibration and segregation.

"With SCC we didn't have to vibrate the concrete and saved time with continuous pours rather than pouring separate lifts for each core wall form."

Eric Snelling,

JE Dunn

Ensuring an outstanding surface finish

The high-rise contains two massive concrete cores with walls up to three-feet thick, which were created using approximately 8,000 cubic yards of SCC and a new state-of-the-art admixture technology, ADVA[®]408 high-range water reducing admixture.

To get the job done right, general contractor JE Dunn requested that a high-performance SCC be used to ensure complete consolidation while producing an outstanding surface finish. At the same time, the SCC had to be consistent from batch to batch with no segregation, and provide a range of high compressive strengths. At the time of project inception, conventional superplasticizers were used to achieve the desired performance characteristics. However, during the project's construction, GCP launched a new chemical admixture technology, ADVA[®]408, a product that promised greater consistency with improved hardened properties. After an initial evaluation, the choice was clear and JE Dunn made the switch to ADVA[®]408.

The overall benefits were wide ranging, including improved consistency from batch to batch, improved consolidation and surface finish, increased compressive strength, and improved water tolerance and pumpability. In addition, the in-place cost to provide the SCC was reduced, and ADVA[®]408 enabled the SCC mixture to have consistent 120-minute flow-ability from the concrete plant to the job site.

"ADVA[®] 408, a product that promised greater consistency with improved hardened properties."

Reducing concrete labor and placing costs

"The use of this SCC helped reduce labor and placing costs," said Eric Snelling, general superintendent of the Spire project for JE Dunn. "Our ready mix suppliers were able to deliver a consistent SCC product to our jobsite." That kind of consistency adds up on a job like this, with two massive core walls up to three feet thick requiring 80 core wall pours at 100 cubic yards a piece. Conventional concrete would have required far more pours and far more manpower and equipment.

Using SCC with ADVA[®]408 increased the concrete's compressive strength to over 13,000 psi and improved consistency as well as slump retention. With the Spire building promising to bring new vitality to downtown Denver, this residential high-rise is an important part of the city's transformation. The construction team is pleased that it's built around a strong core.

Blue360SM Product Performance Advantage.

Because every project, large or small, deserves the best level of protection.

"The use of this SCC helped reduce labor and placing costs."

gcpat.com | North America Customer Service: +1 (877) 423 6491

We hope the information here will be helpful. It is based on data and knowledge considered to be true and accurate and is offered for consideration, investigation and verification by the user, but we do not warrant the results to be obtained. Please read all statements, recommendations and suggestions in conjunction with our conditions of sale, which apply to all goods supplied by us. No statement, recommendation or suggestion is intended for any use that would infringe any patent, copyright or other third-party right.

ADVA is a trademark, which may be registered in the United States and/or other countries, of GCP Applied Technologies, Inc. This trademark list has been compiled using available published information as of the publication date and may not accurately reflect current trademark ownership or status.

© Copyright 2017 GCP Applied Technologies Inc. All rights reserved.

GCP Applied Technologies Inc., 62 Whittemore Avenue, Cambridge, MA 02140, USA

GCP Canada, Inc., 294 Clements Road, West, Ajax, Ontario, Canada L1S 3C6

GCP Applied Technologies Inc., 2325 Lakeview Parkway, Suite 400, Alpharetta, GA 30009, USA

GCP Canada, Inc., 294 Clements Road, West, Ajax, Ontario, Canada L1S 3C6

This document is only current as of the last updated date stated below and is valid only for use in the United States. It is important that you always refer to the currently available information at the URL below to provide the most current product information at the time of use. Additional literature such as Contractor Manuals, Technical Bulletins, Detail Drawings and detailing recommendations and other relevant documents are also available on www.gcpat.com. Information found on other websites must not be relied upon, as they may not be up-to-date or applicable to the conditions in your location and we do not accept any responsibility for their content. If there are any conflicts or if you need more information, please contact GCP Customer Service.

Last Updated: 2023-04-25

gcpat.com/about/project-profiles/a-soaring-high-rise-innovation-its-core