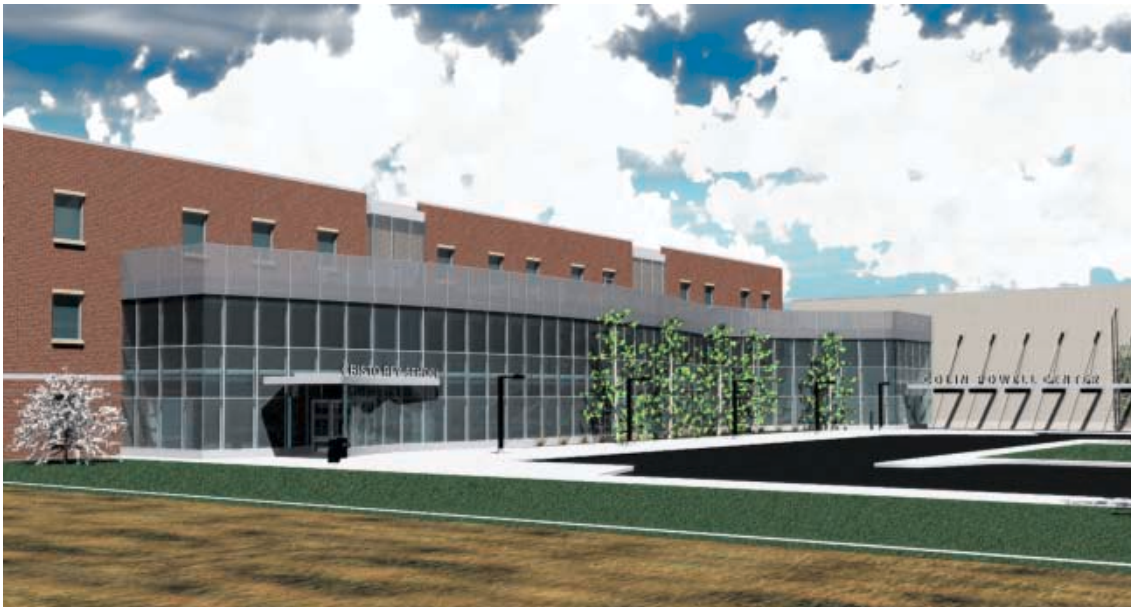


STRUX® 90/40

Synthetic Macro Fiber Reinforcement

A new high school takes state-of-the-art concrete construction to new levels.



The Cristo Rey Jesuit High School and Colin Powell Youth Leadership Center under construction
Minneapolis, Minnesota

To help meet the needs of the children of Minneapolis, the Cristo Rey Jesuit High School and Colin Powell Youth Leadership Center came together under one roof – literally. A new facility would not only provide college preparatory education for city youth, but also offer a safe place where young people can gain leadership skills during non-school hours.

The combined facility includes an auditorium, conference center, theater, classrooms, learning labs, a chapel and basketball courts – all built on a state-of-the-art concrete floor. That’s because while Grace’s STRUX® 90/40 synthetic macro fiber reinforcement has been successfully used for years in slab-on-ground applications, for the first time the innovative admixture could be used on the facility’s elevated composite steel decks since it met both the 1-hour UL listing fire-resistance requirement and the Steel Deck Institute’s revised code for shrinkage and temperature reinforcement.

The new approval was welcome news to the project’s forward-thinking construction team, which then reviewed the data and costs for STRUX reinforcement versus the welded wire mesh that had been previously specified. The results pointed to STRUX – eliminating the

“We’re quite pleased with the performance of the STRUX® 90/40 and its ability to control cracks. In fact, we’re using it on several upcoming jobs and look forward to getting similar results.”

Scott Saunders
Erickson Roed & Associates

need for welded wire mesh that can make placing and finishing the concrete a much harder task. With the green light, approximately 1,000 cubic yards of 6 inch slump normal weight concrete containing STRUX® 90/40 was pumped onto the facility's elevated steel decks to form 2-1/2 floors, or 66,000 square feet. Each 6 inch thick floor consists of a 3 inch deep metal deck with a 3-1/2 inch top slab.

“Our crews didn't have any problems placing and finishing the concrete with the STRUX,” said Andrew Haarklau, project manager at Ryan Companies. “And we saved time and labor since we didn't have to cut and install the wire mesh – which translates into a lower bottom line cost for our customer.”

Haarklau added that placing wire mesh also presents challenges if it's moved during construction and not positioned properly. “With the fibers, I'm more confident in the integrity of the slab because the reinforcement is more uniform than with wire mesh,” he said.

“We plan on placing more STRUX® 90/40 concrete for composite decks because it's easier, safer and has a lower overall in-place cost compared to wire mesh.”

Kerry Willert
Ryan Companies

The project's engineer was also pleased. “Using STRUX made sense from both a financial standpoint and in terms of ease of construction,” added Scott Saunders, senior project manager at Erickson Roed & Associates. “This concrete deck didn't have the usual cracking we see when wire mesh is used. In fact, we had trouble finding any cracks. I'll certainly specify it again on future projects.”



STRUX eliminated the need for welded wire mesh reinforcement and helped maximize crack control and durability.



With new regulatory approvals, the combined facility was one of the first applications in the nation of STRUX® 90/40 synthetic macro fibers in elevated concrete and steel composite decks.

The result of the team's effort was a high-quality floor – a fitting foundation for a center designed to help build a better future for the youth of Minneapolis.

PROJECT CREDITS:

Owner: Twin Cities Jesuit High School and Urban Ventures Foundation, Minneapolis, MN

Contractor: Ryan Companies US, Inc., Minneapolis, MN

Concrete Producer: Aggregate Industries, Eagan, MN

Engineer: Erickson Roed & Associates, Inc., St. Paul, MN

Fibers: Grace Construction Products

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

Visit our web site at: www.graceconstruction.com

W. R. Grace & Co.-Conn. 62 Whittemore Avenue Cambridge, MA 02140

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