

# Accelerate Schedules with RAPIDFORCE®: Four-Star Hotel and Conference Center



This new full-service, four-star hotel and conference center will be the mainstay of a massive 200-acre mixed-use development in the Upper Midwest. The 356,000-square-foot building will feature 320 finely appointed guest rooms, two-story hospitality lounges, multiple retail outlets and specialty restaurants, indoor pool, and a state-of-the-art spa and fitness center.

The expansive facility will also include more than 35,000 square feet of meeting space inclusive of a 7,500-square-foot ballroom and a 4,410-square-foot event center. From boardroom meetings and conferences to large galas, receptions, and intimate concert settings, the 14-story complex will be a first-class destination for leading companies, business travelers, and leisure visitors alike.

BUILT WITH  
**RAPIDFORCE**®  
PART OF THE **MasterMix** Series™



## The Challenge

Groundbreaking for the high-profile development property was delayed for three months due to unforeseen circumstances. It was of vital importance to the ownership team to make up for lost time and get the construction back on track for meeting a previously announced grand opening date.

One of the biggest challenges was finding the ideal solution for expediting placement of the elevated post-tensioned concrete floors. The original plan called for concrete with specified strengths of 3,000 psi in 24 hours and 6,000 psi in 28 days. Based on new accelerated construction goals, the project team now needed to push up the 3,000-psi early-strength attainment to 18 hours.

According to Allen Skogquist, project manager for the Northland Concrete & Masonry Company, the job required an advanced mix offering superior placement, finishability, and early-strength properties to save time and improve productivity. "If the concrete didn't hit the new 18-hour early-strength target, we would have to wait until 24 hours until releasing the post-tensioning tendons," he said. "This six-hour delay is an eternity when you are working on a demanding fast-track construction schedule."

## The Solution

To meet the stringent performance and speed-of-construction requirements for the 18,000-square-foot post-tensioned floor slabs, Holcim developed and supplied 8,500 cubic yards of its next-generation high-early strength concrete technology, called RAPIDFORCE.

The advanced custom-designed RAPIDFORCE® mix was rigorously tested in the laboratory and in the field to come up with the highest-quality concrete for delivering rapid high strength and easier workability for the challenging application. Field testing to ensure a high degree of consistency, reliability, and quality control involved placement of a full-size elevated slab deck at the job site that did not require high-early strength attainment for post-tensioning.

## The Results

"The outstanding performance of the RAPIDFORCE mix made a strong contribution to making up time in the project schedule by saving us a full day of work per week," said Skogquist. "It allowed us to be very productive the day after the pour, immediately stressing the deck in the morning and then pouring the columns and placing the next deck on top."

In addition to exceeding the required 18-hour strengths consistently, RAPIDFORCE allowed for easier placement and finishing. "I was really impressed with the workability of the product," said Chris Glyzinski, the project's finishing foreman for Northland Concrete & Masonry. "With the RAPIDFORCE mix, I didn't have nearly as many finishers on the job as I would for a typical difficult to work with early strength concrete, which was a huge benefit in terms of time and labor cost savings."

Learn about RAPIDFORCE at  
[www.holcim.us](http://www.holcim.us)



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Allen Skogquist  
Project Manager,  
Northland Concrete & Masonry Company

