



MCC ACI LOCAL CHAPTER TECH TALK TUESDAY

Tuesday, May 21, 2019
11:30 am – 1:30 pm

Midland Hills Country Club
2001 Fulham Street
St. Paul, MN 55113

There is a \$35 co-pay to attend the meeting (\$25 early bird). PRE-REGISTRATION IS REQUIRED. Walk-ins may be turned away. The meeting includes a full, hot buffet lunch, materials and continuing education credits. Please check the MCC website for full event details.

MCC is an AIA CES registered provider. AIA credits may also be available.

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Please contact Margaret Mills, the Administrator of the Minnesota Concrete Council, with any questions at 651-482-9549 or via e-mail at margaret@mnconcretecouncil.com

www.mnconcretecouncil.com

The Minnesota Concrete Council (MCC) is dedicated to advancing education, technical practice, scientific investigation and research into cast-in-place concrete construction by organizing the efforts of its member for a non-profit public service. Membership represents design, construction and support industries associated with reinforced and post-tensioned concrete construction.

THE CONCRETE QUALITY CONTROL CHALLENGE - TWINNS SEPARATED AT BIRTH

Concrete cylinders and the concrete in the actual structure are like twins separated at birth. They both have the same parents, they share the same DNA, and if they were both exposed to the same environments and life experiences, they would grow up to be similar in many ways—perhaps even identical in appearance and behavior.

But the concrete cylinders and the concrete structure were separated at birth. In fact, they were separated at the end of the truck chute. One was made in layers and placed by hand with a scoop with no more than a 12-inch drop, while the other was compressed, decompressed, pushed around 90-degree pipeline elbows, and dropped for up to 4 feet. One was mercilessly poked and prodded with a steel rod, while the other was shaken with a vibrator (or not). While the rod treatment can increase apparent air content, the vibrator always knocks the socks out of the air.

One twin was left more or less alone, all by itself in a cold or hot cruel world for a day or so before it was rewarded by being sent off to a spa where it was pampered and kept warm and moist until its day of reckoning (but the trip to the spa may have been pretty bumpy). The other twin was left for its prime developmental stages in a more or less uncontrolled environment. Finally they meet, in the form of cylinder strength vs. core strength, and air content at the chute vs. air content in place. Is it any wonder that the “twins” are now very different from each other?

This presentation will explore any applications that this story might have on specifying and interpreting standard concrete tests.

Presenter:
Ken Hover, PhD, PE
Cornell University

At Cornell, Ken teaches reinforced and prestressed concrete design at the undergrad and grad levels, and two separate courses on fresh and hardened concrete.