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Sponsoring Technical Committee: Optimal Structural Design

Proposed Session Title

Pushing the Envelope in Material and Structural System Choice in High-Rise Buildings

Session Track

Buildings – High Rise

Waterview Tower: Finding the Right High-Strength Concrete Mix

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Abstract:

The main vertical and lateral structural elements used in Waterview Tower, a 90-Story hotel/condominium currently under construction in downtown Chicago, have concrete strengths ranging from 6 ksi to 14 ksi. The assignment of specific concrete mixes to specific structural elements was a very interesting balancing act between cost, constructability, strength, and stiffness. This paper will discuss some of the key structural elements of Waterview Tower and the analyses performed to find the desired balance. Also discussed is the creep and shrinkage analysis completed as part of the design and the resulting adjustments for both horizontal and vertical deformations.