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Title: Specifying High Performance Concrete for the Trump Tower Chicago

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ABSTRACT

When completed in 2009, Trump International Hotel and Tower, Chicago will rise to a height of 345 metres (415 metres feet including the spire). Designed by Skidmore, Owings & Merrill LLP (SOM) the 92 story Trump Tower will be the tallest concrete building in the United States, and the tallest building built in North America since the completion of Sears Tower in 1974. New ground is being broken through a series of high performance concrete mixes designed by Prairie Material Sales, Inc. and employed by SOM on the project. It is believed to be the first application of 110 MPa self-consolidating concrete pumped and placed to an elevation up to 200 metres above grade. Dense limestone 12 mm topsize aggregate from the Material Service Corp. Thornton quarry in northern Illinois has been specified for high strength concrete for the project. The paper presents detailed structural engineering aspects of the tower design including a description of the reinforced concrete systems chosen for the project, design for occupant perception of motion due to wind, design challenges and the creative use of high strength concrete for this landmark project.