

# **P39 Dynamic Size-Rate Effect of Normal Strength and Ultra-High Performance Concrete Cylinders Under Impact**

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## **Abstract:**

The focus of this paper is on the behavior of two sizes of test cylinders made from normal strength concrete (NSC), ultra-high performance concrete (UHPC), and ultra-high performance fiber reinforced concrete (UHPFRC), as part of ongoing research into interaction between size and rate effects under impact loading. Previous research showed a coupling between size and rate effects in NSC and high strength concrete (HSC) cylinders and NSC beams. The current work expands on the previous research by addressing energy flow phenomena that could affect size and rate effects in NSC, UHPC, and UHPFRC cylinders subjected to high energy impact. This paper will present preliminary findings from static and dynamic tests on 100mm x 200mm cylinders and 150mm x 300mm cylinders of all three materials (NSC, UHPC, and UHPFRC). The current study is also investigating 75mm x 150mm and 130mm x 260mm cylinders of the same three mixtures, and some of that data could be presented.

## **Notes:**