



THE UNIVERSITY OF BRITISH COLUMBIA

Department of Civil Engineering

SIERA: Sustainable Infrastructure Research Group

SIERA Webinar Series – No. 30

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Observations and Insights into Test Standards and the Air-Voids System of Wet-Mix Shotcrete



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Dr. Sudip Talukdar is a SIERA Alumni member. He graduated from the University of British Columbia, Department of Civil Engineering in 2013, with a PhD focusing on Construction Materials. His thesis looked at the effects of climate change on concrete infrastructure. He is currently an instructor at the British Columbia Institute of Technology, Department of Civil Engineering, where he teaches courses in Structural Engineering and Construction Materials. He also works as a practicing Field Engineer with Metro Testing and Engineering. Additionally he is a member of ACI Committees 130 and 506, and serves on the board of directors of the ACI-BC Chapter. Currently his areas of research interest include concrete durability, development of alternative cementitious materials, and issues regarding shotcrete test standards.

Abstract: The wet-mix shotcreting process consists of pumping a plastic or flowable concrete through a conveying hose or tube, and then adding pressurized air at the nozzle to spray the concrete towards the substrate at a high velocity to achieve compaction. It is used for a variety of structural and repair applications including shoring walls, lining tunnels, or renovating existing structures.

This presentation will provide some insights and observations regarding testing standards for wet-mix shotcrete projects in the Lower Mainland, and in Western Canada, focusing in particular on a case study in Northern British Columbia involving the effects of pumping air-entrained wet mix shotcrete on its air content and air void system. Some recommendations for practitioners and suggestions for further research will be discussed.

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