

# In Situ Evaluation of Concrete Transport Properties using Surface Resistivity

**Prof. Andrew J. Boyd**  
McGill University  
Department of Civil Engineering  
Montreal, QC, Canada

The surface resistivity test is quickly becoming the accepted quality control criterion for assuring sufficient resistance to mass transport in concrete, with several transportation agencies already having specifications in place. The method, however, has many potential applications beyond simple quality control. Current research is investigating the feasibility of implementing the surface resistivity test for the *in situ* detection and evaluation of early age cracking and deterioration. Though well suited from a functionality perspective for *in situ* application, numerous difficulties arise related to the field conditions of the tested concrete. Several correction factors are necessary in order to obtain reliable, repeatable measurements during *in situ* application.

**BIO:** Dr. Boyd obtained a BScEng from the University of New Brunswick (1993), an MASc from the University of Toronto (1995), and a PhD from the University of British Columbia (2001), all in Civil Engineering. He joined the Department of Civil Engineering at McGill University in 2006, following a six-year stint in the University of Florida Department of Civil & Coastal Engineering. He is a registered professional engineer in Canada, was named a Fellow of the American Concrete Institute in 2008, and former chair of the nondestructive testing committees of both ACI and ASTM. Prof. Boyd's research interests lie in the areas of construction materials and sustainability, particularly as they relate to transportation infrastructure. Specific fields of research include durability, nondestructive testing & evaluation, standards & specifications, repair & rehabilitation, recycling, and hazardous waste reduction & mitigation.