

MEREDITH STROW

MS, Senior Petrographer

Professional Summary

Meredith has several years of experience in petrographic evaluations, aggregate testing and other materials testing. Meredith's experience includes working with concrete affected by freeze-thaw damage, alkali-aggregate reactions, delayed ettringite formation, and fire damage, among other durability issues. On the troubleshooting front, Meredith has worked on assessments of concrete quality, evaluating strength and setting issues, and evaluating delamination and other surface defects. In addition to her background in petrographic examination, Meredith has expertise with an array of aggregate testing methods, as well as experience with US Army Corps of Engineers deleterious aggregate sequential testing. In addition to working with concrete, aggregate and other cementitious construction materials, Meredith has also performed metallurgical testing for failure analysis, corrosion, and welding issues.

Relevant Experience



Education

- » Master of Science, Materials Engineering, University of Illinois at Chicago
- » Bachelor of Science, Geology, Illinois State University

Affiliations

- » American Concrete Institute (ACI), Member of Committees 201 on Durability, 221 on Aggregates, and 240 on Pozzolans
- » American Society of Testing and Materials (ASTM), Member of Committees C09 for Concrete and Concrete Aggregates, C12 for Mortars and Grouts for Unit Masonry, C15 for Manufactured Masonry Units

Selected Publications

- » Monitoring of dielectric permittivity in accelerated alkali-silica reaction concrete with microwave backscattering. *Materials and Structures*, 130 (2020).

Project Experience

- » Assessments of concrete pavements for state and local Departments of Transportation throughout the midwest and northeast, including Arkansas Highway and Transportation Department (AHTD), Chicago DOT, Delaware DOT (DeDOT), Illinois DOT, Illinois Tollway, Massachusetts DOT (MassDOT), Pennsylvania DOT (PennDot), Port Authority of New York and New Jersey (PANYNJ), West Virginia Department of Highways (WVDOT) Pavement Repair Evaluation, evaluation of joint and patch material over more than 20 miles of pavement and examination of sub-base aggregate
- » Mass Concrete Investigations, investigations of mass concrete to determine presence of delayed ettringite formation (DEF)
- » Pavement and Bridge Deck Assessments, assessment of concrete pavement and bridge decks throughout the northeast. Documented deterioration mechanisms ranging from surface scaling to freeze-thaw damage and corrosion of embedded reinforcement
- » Bridge Abutment Evaluations, evaluations included diagnosis and prognosis of ASR and using classic petrography techniques in conjunction with quantitative analysis and physical testing. Petrographic examination identified alkali-silica reaction (ASR), Damage Rating Index (DRI) testing quantified ASR deterioration, and residual expansion testing provided insight regarding further expansion probability.
- » Parking Structure Investigations, investigations documenting condition of slabs, topping slabs, columns and double-tees for corrosion, freeze-thaw damage, fire-damage, scaling, among a variety of other deterioration mechanisms
- » Historical mortar assessments on landmark structures