

Brian J. Wolfe, P.E.
Principal Engineer and Petrographer

EDUCATION

B.S. of Civil Engineering, 2001, University of Illinois Champaign/Urbana
Danish Technological Institute – Concrete Petrography Training Course

PROFESSIONAL REGISTRATIONS

Professional Engineer, Civil, GA (38133), AL (33292), FL (75795), MS (21218), NC (40227), IL (65887)

PROFESSIONAL MEMBERSHIPS

American Concrete Institute (ACI)
International Concrete Repair Institute (ICRI) (GA Chapter President 2012)
American Society for Testing and Materials (ASTM)
Society of Concrete Petrographers (Voting Member)

PRESENTATIONS & PUBLICATIONS

ACI (Georgia Chapter): Value of Petrography in Concrete Repair (February 2009)
SWRI (Winter Technical Seminar): Value of Petrography in Concrete Restoration (Feb. 2010)
ICRI (Georgia Chapter): Methods for Testing Slab Moisture (October 2010)
ICRI (Georgia Chapter): Restoring Mortar Joints in Historic Buildings (November 2010)
ICRI (Georgia Chapter): Concrete Petrography Case Studies (August 2011)
ASCE and SEI (Georgia Chapters): Value of Petrography in Concrete Repair (September 2013)
Georgia Institute of Technology, Concrete Rehab Course, for Concrete Petrography Lecture
ICRI (Carolinas Chapter): Determining Suitable Repointing Material for Historic Masonry (2016)
Applicator Magazine, “The Value of Petrography in Concrete Restoration” (Summer 2010)

CAREER SUMMARY

Mr. Wolfe joined TCE Services in January of 2005 as a Project Engineer and Concrete Petrographer performing investigations and evaluations of existing structures, structural engineering reviews, materials evaluations, petrographic examinations and structural design. He has performed material evaluations utilizing investigative techniques such as petrographic evaluation, chemical analysis, infrared spectroscopy, x-ray diffraction and physical testing. With TCE Services, Mr. Wolfe has performed structural analysis and design related to rehabilitation of and/or modification to existing concrete, steel, and timber structures. He has analyzed existing structures utilizing three-dimensional computer-modeling techniques to assess structural integrity and recommend action when warranted. Mr. Wolfe has also participated in building and parking deck condition assessments, various forms of data collection, petrographic examinations, concrete materials testing and nondestructive testing. Mr. Wolfe also has experience with the various building codes that are used throughout the United States.

Prior to joining TCE Services, Mr. Wolfe worked for MACTEC Engineering & Consulting, Inc. formerly known as LAW Engineering & Environmental Services, Inc. for 3½ years. With MACTEC Mr. Wolfe performed similar structural and material testing, evaluations and design as described above for TCE Services.

Mr. Wolfe also worked for the Illinois Department of Transportation as an Assistant Engineer performing numerous site observations and recommendations dealing with concrete, steel and asphalt materials. Mr. Wolfe gained extensive experience with the DOT Construction Standards and data collection methods through this position.

SPECIALTY EXPERIENCE

Mr. Wolfe is the resident concrete petrographer for TCE Services. He has performed petrographic evaluations of hardened concrete for the purpose of determining causes of distress, mix design compliance, determination of concrete constituents including proportions, air void parameters and water-cement ratios. He has also utilized concrete petrography to identify and evaluate alkali aggregate reactions, fire damage, corrosion related distress, aggregate popouts, surface delaminations, freeze thaw damage, mix stability, improper finishing, poor curing, delayed ettringite formation, etc. Additional materials evaluated with petrographic techniques include fiber reinforced concrete, plasters, stuccoes, coatings, polymer modified concretes and overlays. Mr. Wolfe has also assigned, performed and reviewed chemical laboratory tests to determine cement content of hardened concrete and soluble salts within the concrete. Mr. Wolfe also performs evaluations of historic mortar for the purpose of determine suitable repair mortars.

Mr. Wolfe has extensive experience in non-destructive testing of structural systems including visual condition assessments, sounding, load tests, ultrasonic testing, impact echo and pachometer (covermeter) testing to locate reinforcing steel. These tests are typically combined with structural analysis and/or materials testing to determine the need for repair or strengthening.

Mr. Wolfe has extensive experience in using a pachometer to successfully detect reinforcing steel and post tensioned strands in concrete beams, columns, walls and slabs. Mr. Wolfe has also used a pachometer to locate vertical, horizontal bed joint and bond beam reinforcing in concrete masonry block walls along with wall ties in multiple wythe brick masonry walls.

Mr. Wolfe also has extensive experience in testing concrete slab moisture content and evaluating adhesion failure of impermeable flooring materials. His testing experience includes performing and evaluating the results of moisture vapor emission (MVE), internal relative humidity (RH) and surface RH tests.

Mr. Wolfe has provided expert testimony and consulting services in projects which have reached litigation. These projects typically involved evaluation of concrete failures or noncompliant issues. His services included preparation of exhibits, assistance during depositions and trial preparation and expert testimony.

Mr. Wolfe has presented the on the topics of petrographic examination, mortar analysis and slab moisture testing for ICRI, ACI, ASCE and SWRI. Mr. Wolfe also had an article published in Applicator Magazine about the value of petrography in concrete restoration.

TECHNICAL PROJECTS

Date	Project Name	Description
Oct 2003	Nashville Train Station	Structural design of elevated exterior plaza.
Oct 2006	Agnes Scott College (Campbell Hall)	Evaluation and repair of corrosion related distress due to the presence of a chloride based accelerator within the concrete.
Mar 2007	Google ATL Facility	Consulting of concrete mix and construction procedures to minimize shrinkage related distress in water cooling tanks.
Aug 2007	Wrigley's Gum Plant	Evaluation of delaminating cementitious overlay.
Dec 2008	Front Range College	Delayed ettringite formation deteriorating precast double tees.
July 2011	Tensar Warehouse	Evaluation of fire damage to warehouse concrete slab on grade.
Jan 2012	NY Subway Tunnel	Evaluation of overhead spall of shotcrete material.
Aug 2012	Atlanta Beltline	Concrete slab surface delaminations from trapped bleed water.
Nov 2014	Interstate 40	ASR of pavement resulted in significant distress
Dec 2015	Precast Tank Lid	Delayed ettringite formations
Mar 2016	UGA Sanford Bridge	Evaluation of deteriorated concrete bridge deck adjacent to University of Georgia Sanford Stadium