

Your testing, evaluation and consulting
needs demand proven expertise

NRMCA staff can provide that expertise. We understand concrete. And for over 85 years we have been leaders in applied research, testing and standards development.

Today, in a comprehensively-equipped facility, with a highly trained staff under expert technical leadership, the laboratory is recognized as an authoritative and reliable source of research and testing. The Lab's technical staff expertise and continued participation in standards development is the foundation for technically sound testing and reports.

The laboratory is inspected by the Cement and Concrete Reference Laboratory (CCRL), conforms to ASTM C1077 and maintains its accreditation under the AASHTO Accreditation Program.

A great value for testing and consulting services.

NRMCA members receive a 40% discount.

Technical Staff

Colin Lobo, PhD. PE.

Senior Vice President, Engineering
Colin serves on various technical committees covering codes and specifications for concrete. He is a Fellow of ACI and ASTM and honorary member of ASTM C09 and C01. He is the recipient of the Henry C. Turner Medal, and Mather Member Contribution Award. He has over 30 years experience in concrete technology, and is the author of several papers and books.

Gary Mullings

Senior Vice President, Operations and Compliance
Gary has been with NRMCA for over 40 years, the major part of which has been at the laboratory. He is involved in industry training programs including the administration of the local ACI certification programs for field and lab testing technicians.

Karthik Obla, PhD. PE.

Vice President, Technical Services
Karthik has taken leadership roles in several ACI, ASTM, and TRB committees. He is a Fellow of ACI and a winner of ACI's Young Professional Achievement award and ASTM Award of Appreciation from Sustainability. He has over 25 years experience in concrete technology and has published several books and has over 75 articles.

Stuart Sherman

Laboratory Manager

Danny Dickerson

Laboratory Technician

Cory McGrath

Laboratory Technician

Contact Information

For more information on rate quotes and capabilities contact:

NRMCA Research Lab

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- **Phone:** (703) 706-4873; (301) 728-5455
- **Website:** www.nrmca.org/research/lab.asp

NRMCA
NATIONAL READY MIXED
CONCRETE ASSOCIATION
NRMCA Research Laboratory
5600 Branchville Road
College Park, MD 20740



Providing proven testing, evaluation and consulting services.

We help solve problems.



**The NRMCA
Research
Laboratory**



The NRMCA Research Laboratory

Here are some of the problems we can help you solve

- How do I interpret this concrete specification?
- Can I get help identifying conflicts or potential problems in a specification?
- What is the most optimized mixture that still complies with the specification?
- How do I specify/develop concrete mixtures with:
 - Resistance to Alkali Silica Reactivity (ASR)
 - Low chloride penetrability
 - Sulfate resistance
 - Reduced shrinkage
 - Project temperature limits?
- How can I evaluate/develop products for use in concrete?
- Can I get assistance in material evaluation?
- How can a specification encourage improved quality practices?
- What quality practices at the concrete plant can save money?
- How can I monitor the quality of concrete?
- How can I develop a sustainable concrete mixture?
- How do I interpret code/standards requirements for strength and low strength investigations?
- What are all the code and standard requirements for acceptance testing?
- How can I identify non-standard testing practices?
- How can I improve testing quality in my area?
- How can I ensure compliance with all the code and standard requirements governing the use of ready mixed concrete?
- How can I ensure proper communication between the stakeholders through a pre-construction conference?
- How can I make specifications performance based? What are the pros and cons?
- How to save money using maturity?
- How can I specify/develop pervious concrete mixtures; self consolidating concrete mixtures?
- How can I specify/use internal curing?
- How do I develop a quality plan for producing ready mixed concrete?
- How can I get ready for an NRMCA plant certification, quality certification, and quality award?
- Can I get articles on a particular subjected matter related to concrete technology?

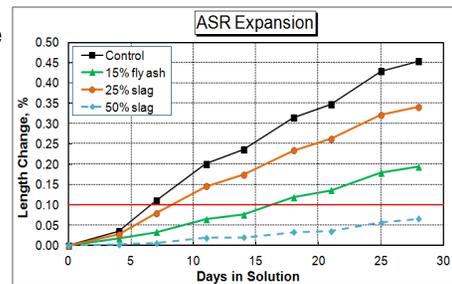


Specialized Testing Capabilities

- Alkali Silica Reactivity (ASR) Testing
- Chloride Testing (Chloride Contents, Permeability, Diffusion, Migration, Resistivity)
- Freeze Thaw, Scaling Tests
- Air Void system, Match Curing
- Pull-out Test, Drying Shrinkage, Sulfate Resistance
- Heat Signatures for Setting & Cementitious-Admixture Interactions

Past Achievements

- Helped establish many of the standards & specification requirements for ready mixed concrete, including:
 - ASTM C94 criteria on batching sequence, mixing & delivery time
 - ASTM C94 criteria on the reuse of mixer wash water
 - Use of 4 x 8 in. cylinders for strength testing (ASTM C39)
 - Precision statement for the AASHTO microwave oven test
 - Cautionary note regarding use of ASTM C1260 test, based on testing more than 150 aggregate sources nationwide
 - Tolerance requirements for high strength concrete testing
 - Improved standards for testing normal and high strength concrete
- 1998 - Awarded ACI Arthur R. Anderson Award
- Use of resistivity tests in fresh, hardened concrete
- Use of crushed returned concrete as aggregate
- Optimizing cementitious content in concrete mixtures
- New permeability tests and criteria
- Chloride limits for reinforced concrete
- Higher fly ash concrete with acceptable performance
- Partners with various universities, labs & federal agencies



Laboratory Facility

Established in 1928, in present location since 1974

- 5,000 square foot all tilt-up concrete lab building with extensive outdoor test area
- Moist Curing Room, 100°F, 140°F Rooms
- Constant temperature (73°F) / 50% relative humidity room
- Classroom Area, Concrete Mixing Area, Aggregate Preparation Area, Ovens

Selected ASTM Tests

A full list of ASTM tests conducted at the lab is available at:

www.nrmca.org/research_engineering/testing.htm

Aggregate Tests

Full ASTM C33 evaluation for aggregate suitability

- C88 Soundness of Aggregates
- C123 Lightweight Pieces in Aggregates
- C142 Clay Lumps & Friable Particles
- C1252 Void Content, Uncompacted of Fine Aggregate
- C1260 Alkali Reactivity of Aggregates (Mortar Method)
- C1293 Alkali Reactivity of Aggregates (Concrete Method)
- C1777 Methylene Blue Value for Fine Aggregate
- D2419 Sand Equivalent Value of Soils & Fine Aggregate

Concrete Tests

Trial batching and 3 point curves (ASTM C192)

Non destructive tests (ASTM C805, C873, C900)

Acid and Water Soluble chlorides (ASTM C1152, 1231)

Tests on SCC, Pervious concrete, Admixture evaluation (ASTM C233 C494), Resistivity, SAM, and chloride migration

- C42 Core Testing
- C78 Flexural Strength of Concrete
- C157 Drying Shrinkage
- C441 Effectiveness of SCM against ASR
- C457 Air Void System
- C469 Static Modulus of Elasticity
- C567 Equilibrium Density of light weight
- C642 Specific Gravity, Absorption, Voids
- C666 Freezing & Thawing
- C1074 Strength by Maturity
- C1202 Rapid Indication of Chloride Penetration
- C1556 Chloride Diffusion
- C1567 ASR Mortar Bar Test (Cementitious Combinations)
- C1876 Resistivity



Cement Tests

Mortar batches (flow, strength, air content), fly ash, slag cement strength activity

- C359 Early Stiffening of Portland Cement (Mortar)
- C596 Drying Shrinkage of Mortar
- C1012 Sulfate Resistance of Mortars