2017 AASHTO re:source Technical Exchange
March 27 through 29, 2017 | The Westin Annapolis
The AASHTO Materials Specifications are now available as a web-based edition that includes a number of enhanced features. The web-based Specifications are available to purchase as an online, 12-month subscription. Check out these features of the web-based Materials Specifications and purchase, or renew, your subscription today!

**FEATURES OF THE WEB-BASED MATERIALS SPECIFICATIONS**

- **Instant Online Access.** Once you purchase your subscription, enjoy immediate online access, with nothing to download or install.
- **Automatic Updates.** As a current subscriber, you automatically receive all updates published during your subscription period.
- **Navigation and Note-taking.** With the web-based format, you can easily search the Materials Specifications by keywords, highlight text, and add bookmarks and notes that can be shared throughout your organization.
- **Printable.** Print individual specifications and test methods right from your computer screen, as needed.
- **Portable.** Because of the digital format, the web-based Materials Specifications are portable and can be accessed on multiple devices, including computers, tablets, and smartphones.

- **More Frequent Annual Updates.** Specifications are now updated three times a year—in April, June, and August—with updates grouped by subject areas. The April 2017 Update will include 4 new and 25 revised specifications, and will update the sections on Hydraulic Cement and Lime, Fresh Concrete, Hardened Concrete, Pavement Measurement, Bridge and Pavement Preservation, and Quality Assurance and Environmental.
- **Access to Previous Editions.** As a subscriber, not only can you access the current Materials Specifications, you also have access to recent past editions of the Specifications, with changes between editions highlighted for easy reference.
- **Single- and Multi-User Licenses.** Choose the number of user licenses to best accommodate your organization’s needs. Purchase either a single-user license, or choose among several multiple-user licenses, which offer deeper price discounts.
AASHTO re:source is part of the Engineering and Technical Services division of AASHTO (American Association of State Highway and Transportation Officials), an international leader in setting technical standards for all phases of highway system development. The primary vision of AASHTO re:source is to be the center for promoting quality and achievement of excellence in construction materials testing (CMT). We provide services and tools through our three major programs: the Laboratory Assessment Program (LAP), the Proficiency Sample Program (PSP), and the AASHTO Accreditation Program (AAP). Through these activities, we evaluate testing competency, promote continual improvement, and instill confidence in the laboratories and specifiers that use our programs.

Social Media Guide for AASHTO re:source Technical Exchange

TWITTER
@aashtoresource
Follow AASHTO re:source for the latest meeting information and developments.
#resourceTechEx
Use this hashtag to join and track Twitter conversations related to the meeting.

ATTENDEE ROSTER
http://www.cvent.com/d/8vq14w/3A
Browse the online attendee list. The roster will only be available electronically.

SESSION RESOURCES and HANDOUTS
Due to the proprietary nature of the meeting presentations, the presentations will not be made available to attendees after the sessions or on the event website.

EXHIBITOR BINGO
Thank you to our sponsors and exhibitors for their generous support of the Technical Exchange. We encourage each attendee to visit with each sponsor and exhibitor during the networking breaks and throughout the meeting. By visiting with exhibitors, each attendee has the opportunity to win one of three Amazon Echo Dots. To be eligible to win, you must acquire a ‘stamp’ from each sponsor exhibitor display for your bingo card. All entries must be returned to the registration desk by 11:00 a.m. on Wednesday, March 29. Prize drawings will be held at the Customer Roundtable session on Wednesday afternoon. Must be present to win. Exhibitors, sponsors, AASHTO staff, and CCRL staff are not eligible to win prizes.

GRAND PRIZE DRAWING
All attendees will be entered into a grand prize drawing for an Amazon Echo. The grand prize drawing will be held at the Customer Roundtable session on Wednesday afternoon. Must be present to win. Exhibitors, sponsors, AASHTO staff, and CCRL staff are not eligible to win prizes.
### Monday, March 27

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>8:00 a.m.-Noon</td>
<td>AASHTO SOM Executive Council Meeting (by invitation only)</td>
<td>Capitol Ballroom A</td>
</tr>
<tr>
<td>1:00 p.m.-5:00 p.m.</td>
<td>AASHTO Administrative Task Group Meeting (by invitation only)</td>
<td>Capitol Ballroom A</td>
</tr>
<tr>
<td>4:00 p.m.-5:00 p.m.</td>
<td>AASHTO re:source Customer Council Meeting (by invitation only)</td>
<td>Capitol Ballroom A</td>
</tr>
<tr>
<td>5:30 p.m.-7:00 p.m.</td>
<td>Evening Reception/Ice Breaker (all attendees welcome)</td>
<td>Prefunction area</td>
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### Tuesday, March 28

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:00 a.m.-8:00 a.m.</td>
<td>Continental Breakfast</td>
<td>Annapolis Ballroom</td>
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<tr>
<td>8:00 a.m.-Noon</td>
<td>OPENING PLENARY SESSION</td>
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<tr>
<td>8:45 a.m.</td>
<td>Welcome. Steven Lenker, Director, AASHTO re:source and CCRL</td>
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<tr>
<td></td>
<td>Keynote Address. James Williams, Deputy Executive Director, Mississippi DOT</td>
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<tr>
<td>10:00 a.m.-10:30 a.m.</td>
<td>Break</td>
<td>Capitol Ballroom Prefunction area</td>
</tr>
<tr>
<td>10:30 a.m.</td>
<td>AASHTO Accreditation Program (AAP) Overview, Q&amp;A</td>
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<td></td>
<td>Brian Johnson, Manager, AASHTO Accreditation Program, AASHTO re:source</td>
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<tr>
<td>Noon-1:00 p.m.</td>
<td>Lunch</td>
<td>Annapolis Ballroom</td>
</tr>
<tr>
<td>1:00 p.m.-2:45 p.m.</td>
<td>BREAKOUT SESSIONS ROUND A</td>
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### Wednesday, March 29

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<thead>
<tr>
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<tbody>
<tr>
<td>Noon-1:00 p.m.</td>
<td>Lunch</td>
<td>Annapolis Ballroom</td>
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<tr>
<td>1:00 p.m.-3:00 p.m.</td>
<td>CLOSING PLENARY SESSION</td>
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Hotel Floorplan

The Westin Annapolis
Annapolis, Maryland
AASHTO re:source would like to say ‘Thank You’ to all of our Sponsors for their support of this inaugural event.

<table>
<thead>
<tr>
<th>Gilson Company, Inc.</th>
<th>CANNON Instrument Company</th>
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<td>HW Headwaters Resources</td>
<td>asphalt Institute</td>
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<tr>
<td>ElmTree System</td>
<td>Paragon Technical Services, Inc.</td>
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Their support contributes greatly to the success of the 2017 Technical Exchange.
**Session Abstracts**

**TUESDAY, MARCH 28**

8:45 a.m.–10:00 a.m.

**AAP Overview**  
*Capitol Ballroom D*

An overview of the AASHTO Accreditation Program will be presented, including the development of requirements, common uses, and future expectations. Attendees will have an opportunity to ask questions about the program following the presentation.

10:30 a.m.–Noon

**LAP Overview**  
*Capitol Ballroom D*

An overview of the AASHTO re:source Laboratory Assessment Program will be presented, including a review of frequently asked questions from customers. Attendees will have an opportunity to ask questions about the program following the presentation.

10:30 a.m.–Noon

**PSP Overview**  
*Capitol Ballroom D*

An overview of the AASHTO re:source Proficiency Sample Program will be presented, including a review of frequently asked questions from customers. Attendees will have an opportunity to ask questions about the program following the presentation.

1:00 p.m.–2:45 p.m.

**BREAKOUT SESSIONS ROUND A**

**Introduction to Measurement Uncertainty**  
1:00 p.m.–5:00 p.m.  
*Capitol Ballroom C*

The course focuses on the physical understanding of the measurement task and makes only very limited use of complex mathematical and statistical tools. The course covers the following topics:

- The concept of uncertainty.
- The difference between error and uncertainty.
- The philosophy in the GUM method and why it makes sense.
- Identifying uncertainty contributors.

- The tool box—type A and type B evaluations. When to use which type. How to translate available information into standard uncertainties.
- Estimating uncertainty—combining uncertainty contributors to find the expanded uncertainty.

**Making the Most of Your QMS**  
*Capitol Ballroom D*

Most of us are familiar with the focus on quality in the construction materials world, but is your company’s quality management system really working for you? Learn how your organization can benefit from implementing and continually improving its QMS, starting with an emphasis on what quality is and how it relates to your business. The three main components of a QMS will be explained, with the use of real-world examples. Tips and tricks to maintaining an effective QMS will be discussed, along with ways to measure quality and pitfalls to avoid. Learn how AASHTO re:source has benefited from developing its own QMS. A fully documented and effective QMS will ensure that the requirements of both your organization and your customers are met.

**Common Errors in Asphalt Mix Design**  
*Capitol Ballroom AB*

This session will be led by a subject matter expert in asphalt mix design. Learn what the most common errors are when developing mix designs, the problems caused by these errors, and solutions and suggestions that you can implement in the future.

3:15 p.m.–5:00 p.m.

**BREAKOUT SESSIONS ROUND B**

**Internal Audits, Management Review, and Corrective Action**  
*Capitol Ballroom D*

This session will include in-depth explanations of internal audits and management reviews, and the key differences between them. Learn how to effectively plan and implement these activities for maximum benefit to your organization. The importance of the corrective action process will also be explored, with
a strong focus on how to determine, and eliminate, the true root cause of nonconformities. The differences between corrective action and preventive action will also be discussed. Interactive exercises will be included in this session, and participants will see exactly how AASHTO re:source handles its own internal audits, management reviews, and corrective actions.

**Common Errors in Concrete Mix Design**  
*Capitol Ballroom AB*

This session will be led by a subject matter expert in concrete mix design. Learn what the most common errors are when developing mix designs, the problems caused by these errors, and solutions and suggestions that you can implement in the future.

**WEDNESDAY, MARCH 29**

8:00 a.m.–9:45 a.m.  
**BREAKOUT SESSIONS ROUND C**

**Application of Calibration Data**  
*Capitol Ballroom C*

This workshop will ask and answer the question: “What should you do with equipment calibration data after you get it?” We will examine the criteria for good calibration data and then show how to apply it in the lab. This is an important but usually overlooked step in the calibration process — failure to complete this step can lead to over-stated confidence, and even to inaccurate test results. We will use examples to show a good methodology to apply and to demonstrate the possible impact on test results.

**AASHTO R 18**  
*Capitol Ballroom AB*

In this workshop, R 18 updates from 2016 and 2017 will be presented, and the requirements will then be explored by groups of attendees. Attendees will be divided into teams based on their interests. Each team will discuss the requirements along with their own best practices. The team will then develop discussion points to share with the other workshop attendees. Through the process, the team will also suggest potential changes to R 18 that could help everyone improve their own quality management systems.

**Lab Manager 101**  
*Capitol Ballroom D*

This session will focus on the attributes of a productive and knowledgeable Laboratory Manager, and is applicable to those that are already in this position and those that aspire to this position. Considerable time will be spent on management of staff, development of staff, and tips for getting the most out of them. Understanding the importance of material sampling and sample preparation will also be discussed, as these are concepts vital to accurate and valid results. Group discussion and ideas will be shared.

10:15 a.m.–Noon  
**BREAKOUT SESSIONS ROUND D**

**Technician Certification**  
*Capitol Ballroom AB*

This workshop is designed to communicate the importance of technician certifications and the requirements of ASTM quality management system standards C1077, D3666, D3740, and E329. We will then break into small groups and review relevant certifications in your area of the country and discuss how to determine if a certification will meet the certification requirements for a quality management system standard.

**Thermometry**  
*Capitol Ballroom C*

This workshop will include a discussion of the different types of thermometers available on the market today. We will discuss the construction, limitation, and proper use of each thermometer type. We will also discuss AASHTO’s accreditation requirements for both working thermometers and reference thermometers. Finally, we will discuss how to select the proper thermometer for your application and calibration techniques.
Session Abstracts (continued)

Quality Manager 101
Capitol Ballroom D
For those who are new to the role of Quality Manager in their organization and want to better understand their role, this session will present Quality Manager responsibilities associated with successful implementation of the AASHTO R18 quality standard and associated ASTMs (e.g., C1077, D3666, D3740, E329). Some major topics to be discussed are:
– Establishing and managing a quality management system
– Confirming training and qualification of personnel
– Controlling measuring and test equipment
– Procuring external calibration and test agency services
– Maintaining documents and records

1:00 p.m.–3:00 p.m.
Customer Roundtable/Q&A
Capitol Ballroom D
The conference will conclude with a roundtable discussion for all attendees. During this session, attendees will be given the opportunity to share experiences, best practices, tips, etc. relating to the construction materials testing industry. This is a great opportunity to learn from your colleagues and improve your testing services!

Speaker Biographies

Tracy Barnhart, CQA, CCT
Quality Manager
AASHTO re:source
Frederick, MD
Tracy has been with AASHTO for 27 years. Her current position is Quality Manager, but she has also served as a Laboratory Assessor, Quality Analyst, and Assistant Program Supervisor. Tracy is responsible for ensuring that AASHTO re:source’s quality management system is maintained in accordance with the requirements of ISO 9001, for which AASHTO re:source has been certified since 2006.
• Making the Most of Your QMS; and Internal Audits, Management Review, and Corrective Action

Phil Blankenship, P.E.
Senior Research Engineer
Asphalt Institute
Lexington, KY
Phil joined the Asphalt Institute in 2007 as the Senior Research Engineer. He currently manages the AI’s Mixture and Performance Testing Laboratory, where they perform private and government testing research. Phil has a BSCE and MSCE from the University of Kentucky and has worked in both the public and private sectors throughout his career in asphalt technologies.
• Common Errors in Asphalt Mix Design

Jasmine Gilmore
Quality Analyst
AASHTO re:source
Frederick, MD
Jasmine Gilmore is a Bowie State University Graduate, with a B.S. in Biology. In January 2014, she joined AASHTO as a Laboratory Assessor. In 2015, Jasmine joined the AASHTO Accreditation Program team as a Quality Analyst. Jasmine is heavily involved with developing thermometer policies and training. Jasmine has been the lead of the AASHTO re:source Thermometer Committee since 2015.
• Thermometry
Brian Johnson
Manager
AASHTO Accreditation Program, AASHTO re:source
Frederick, MD

Brian Johnson is the AASHTO Accreditation Program Manager at AASHTO re:source. Brian has been with AASHTO for over 17 years. He is the chair of ASTM Subcommittee D04.30 on sampling and is actively involved in the AASHTO and ASTM standards development processes. Brian has been moderating an asphalt binder technician workshop for the Rocky Mountain Asphalt User-Producer Group for 10 years.

• AASHTO Accreditation Program (AAP) Overview, Q&A; and AASHTO R 18

Maria Knake
Manager
AASHTO re:source Laboratory Assessment Program
Frederick, MD

Maria Knake is the Manager of the AASHTO re:source Laboratory Assessment Program and has been with AASHTO for nearly 12 years. Maria is responsible for managing approximately 25 full-time staff and contractors who perform technical audits of nearly 2,000 construction materials testing laboratories across the United States and Canada.

• AASHTO re:source Laboratory Assessment Program and Proficiency Sample Program Overview, Q&A; Application of Calibration Data; and Thermometry

Steven Lenker, P.E.
Director
Construction Materials Reference Laboratories
Frederick, MD

Steven E. Lenker is the Director of the Construction Materials Reference Laboratories (AASHTO re:source and the Cement and Concrete Reference Laboratory (CCRL). Steve previously served as the Vice President of Engineering and Operations at the National Stone, Sand and Gravel Association (NSSGA) where he was responsible for the Association’s administrative and technical activities.

• Opening Plenary Session

Robert Lutz
Manager
AASHTO re:source
Frederick, MD

Bob Lutz is an engineering graduate of Lafayette College in Easton, Pennsylvania and has worked for AASHTO since 1989, currently serving as the Manager of AASHTO re:source, one of AASHTO’s largest technical-service programs. In his current role, Bob is responsible for the day-to-day operations, including strategic planning, marketing, budgeting, program development, training, and accreditation and auditing activities.

• Application of Calibration Data

John Malusky
Manager
AASHTO re:source Proficiency Sample Program
Frederick, MD

John Malusky has been with AASHTO for over 10 years and is the Program Manager for the AASHTO re:source Proficiency Sample Program. John develops sample schemes, performs homogeneity and stability testing, and conducts data analysis for the program. The Sample Program distributes over 20,000 samples annually to participants worldwide.

• AASHTO re:source Laboratory Assessment Program and Proficiency Sample Program Overview, Q&A

Gary Mullings
Executive Vice President of Operations and Compliance
National Ready Mixed Concrete Association (NRMCA)
Silver Spring, MD

Gary M. Mullings is the Executive Vice President of Operations and Compliance for the National Ready Mixed Concrete Association in Silver Spring, Maryland. He has primary responsibility for overseeing the association’s regulatory compliance with federal agencies such as OSHA, EPA, and FMCSA. Mr. Mullings has more than 43 years of service for the National Ready Mixed Concrete Association.

• Common Errors in Concrete Mix Design
Dr. Henrik Nielsen  
President  
HN Metrology Consulting and  
HN Proficiency Testing  
Indianapolis, IN  
Dr. Henrik S. Nielsen is the president of HN Metrology Consulting and HN Proficiency Testing. His areas of expertise include geometrical product specifications, dimensional metrology, uncertainty estimation and quality assurance for calibration laboratories. Dr. Nielsen holds a M.Sc. in Mechanical Engineering and a Ph.D. in Metrology, both from the Technical University of Denmark.  
• Introduction to Measurement Uncertainty  

Amy Ridenour  
Quality Analyst  
AASHTO re:source  
Frederick, MD  
Amy Ridenour is a graduate of Frostburg State University where her studies focused on Earth Science. She has been an employee at AASHTO re:source since 2012 and a Quality Analyst for the last 2 ½ years. Amy has led the Certification Exam Review Team at AASHTO re:source since 2015.  
• Technician Certification  

Tom Taylor, P.E.  
Principal  
Director of Laboratory Services  
Specialized Engineering  
Frederick, MD  
Tom is the Laboratory Director for two material testing laboratories that have been AASHTO and WACEL accredited and Army Corps of Engineers validated for the last ten years. He has experience in the CMT field as an inspector, supervisor, and manager. Tom holds NICET, WACEL, MARTCP, and ACI certifications in nine different areas and is currently NICET Level IV Asphalt and Concrete, Soil Level III.  
• Lab Manager 101  

Benjamin Trujillo, CQA, CQIA  
Integrated Quality  
Albuquerque, NM  
Benjamin has more than fifteen years’ experience in the quality management field, focused on designing, implementing, and auditing quality management systems for organizations engaged in commercial and nuclear design and construction projects. He currently serves as the Chair for the Design & Construction Division of the American Society for Quality.  
• Quality Manager 101  

James Williams, P.E.  
Deputy Executive Director  
Chief Engineer  
Mississippi Department of Transportation  
Jackson, MS  
James was named Deputy Executive Director/Chief Engineer for the Mississippi Department of Transportation (MDOT) in November 2016. James is responsible for the oversight of the Office of Highways, which oversees all MDOT projects including planning, design, construction and maintenance. James previously served as Assistant Chief Engineer of Operations, State Materials Engineer, and an engineer in the Geotechnical Department branch of the Materials Division at MDOT, where he began his career in 1992.  
• Opening Plenary Session
**AASHTO re:source Technical Exchange**  
**Professional Development Hours (PDH) Tracker**  
**March 27 – 29, 2017**

*Check off the sessions you attended, tear out this form and return your completed form to the meeting registration desk after your last session. You must also sign-in at each session attended. AASHTO re:source will email PDH certificates within 4 weeks.*

<table>
<thead>
<tr>
<th>SESSION</th>
<th>PDH</th>
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<tbody>
<tr>
<td><strong>Tuesday, March 28, 2017</strong></td>
<td></td>
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<tr>
<td>AASHTO Accreditation Program Overview, Q&amp;A (8:45 a.m. – 10:00 a.m.)</td>
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<tr>
<td>AASHTO re:source Laboratory Assessment Program and Proficiency Sample Program Overview, Q&amp;A (10:30 a.m. – 12:00 p.m.)</td>
<td>1.5</td>
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<tr>
<td>Introduction to Measurement Uncertainty (1:00 p.m. – 5:00 p.m.)</td>
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<tr>
<td>Making the Most of Your QMS (1:00 p.m. – 2:45 p.m.)</td>
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<tr>
<td>Common Errors in Asphalt Mix Design (1:00 p.m. – 2:45 p.m.)</td>
<td>2</td>
</tr>
<tr>
<td>Internal Audits, Management Review, and Corrective Action (3:15 p.m. – 5:00 p.m.)</td>
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<tr>
<td>Common Errors in Concrete Mix Design (3:15 p.m. – 5:00 p.m.)</td>
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**Wednesday, March 29, 2017**

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<tr>
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<tr>
<td>Application of Calibration Data (8:00 a.m. – 9:45 a.m.)</td>
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<tr>
<td>AASHTO R 18 (8:00 a.m. – 9:45 a.m.)</td>
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<tr>
<td>Lab Manager 101 (8:00 a.m. – 9:45 a.m.)</td>
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<td>Thermometry (10:15 a.m. – 12:00 p.m.)</td>
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**TOTAL**

Print Name:  
Company:  
Signature: 
A web-based application that manages your Quality Management System following the guidelines of AASHTO R18 featuring intuitive setup, complete quality management, email notifications, remote access for assessors and inspectors plus unlimited multi-user access.