



FROEHLING & ROBERTSON



AIA Approved  
Continuing Education



Helping You **CRACK**  
the **CODE**

**CRACKING the CODE.** F&R offers an array of AIA approved building code presentations addressing special inspections and primary construction related code issues. Our training seminars are FREE and are available to groups of all sizes and can be conducted, conveniently, at locations of your choosing. All courses are approximately one hour in duration and include technical handouts. Best of all, F&R's training sessions earn participants 1.0 AIA Learning Unit, 1.0 Professional Development Hour (PDH) and includes Health and Safety/Sustainability Credit. **Let F&R's Mobile Classroom Come to YOU!**

## SPECIAL INSPECTIONS PRESENTATION TOPICS

### IBC 2015 SPECIAL INSPECTIONS

This program addresses all of the different types of special inspections required by IBC 2015. Specific disciplines of geotechnical, soils, concrete, masonry, reinforcing steel, structural steel are discussed as well as applicable reference codes and standards that make the IBC code work. A special emphasis is placed on the new concrete code (ACI 318) and the new masonry code (TMS 402/602) both of which have been revised and updated as new reference codes for IBC 2015.

### ACI 318-14 BUILDING CODE REQUIREMENTS for STRUCTURAL CONCRETE

This program takes a journey through the various concrete special inspections required by ACI 318 and the International Building Code (IBC). The new concrete building code (ACI 318-14) represents the first total REORGANIZATION since 1971 almost fifty years ago. The titles of two chapters of the new concrete code are the same as it has been in previous concrete codes; however, the other twenty-five chapters are different and some are brand new. This course addresses ALL of the special inspections and tests required by the concrete code and the IBC code including where to sample concrete in the field, quality control tests, mix design criteria and the new mix design data required for the different "exposure classes" of concrete placed in the project.

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### ❖ ACI 305 HOT WEATHER CONCRETING

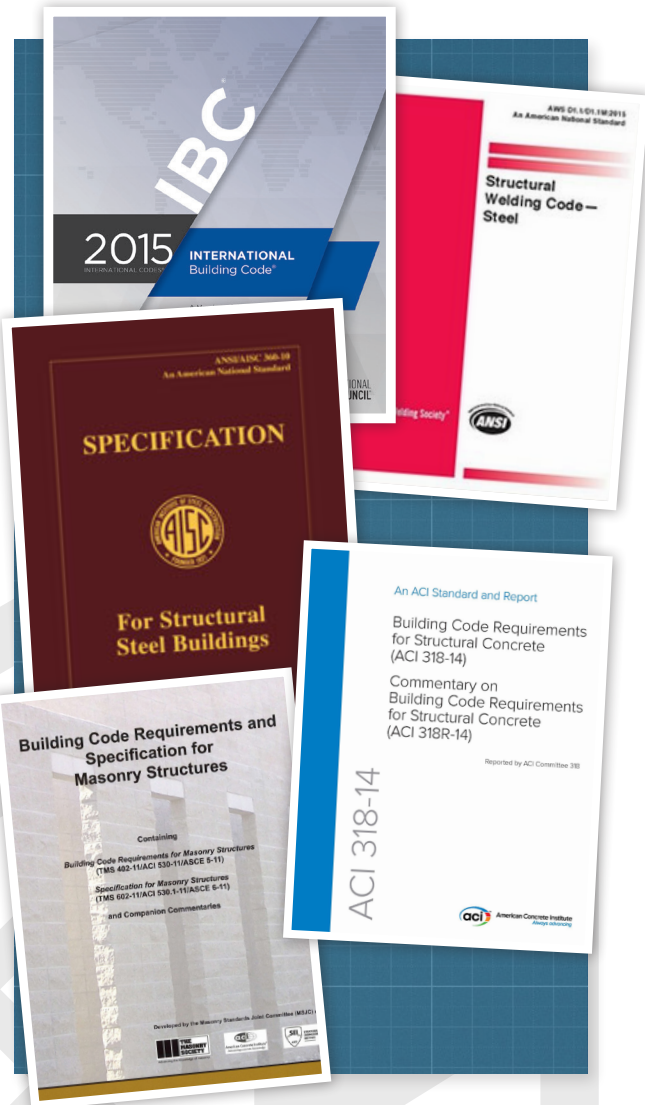
The effects of increased temperatures on plastic and hardened concrete properties are discussed in this presentation. The conversation will include what measures should be taken to control the consequences of hot weather with respect to production and delivery, placing and curing and testing and inspection. What ACI 305 says constitutes the definition of hot weather is addressed as well as the various components of concrete. This course devotes some time to discuss the “planning stage” so that advance steps and procedures are taken in order to avoid and/or minimize “hot weather concrete” complications.”

### ❖ ACI 306-R COLD WEATHER CONCRETE

Special inspections required by the concrete code and the IBC code are addressed in this presentation but there is a LARGE emphasis on “Cold Weather Concrete” and the types of failures that predominate during cold weather and how to avoid them. What is the actual definition of “cold weather” according to ACI 306-R and what are the MINIMUM ambient temperatures and concrete temperatures that are allowed by code. Concrete setting times will be addressed and construction solutions will be advanced regarding compressive strength increases and decreases based on cold weather activities. Protective measures that should be planned and employed during construction to combat cold weather conditions.

### ❖ TMS 402/602 BUILDING CODE REQUIREMENTS and SPECIFICATIONS for MASONRY STRUCTURES

All of the field special inspections, field tests and laboratory tests required by the TMS402/602 Masonry Code and the IBC Code are reviewed during this session. The “old” masonry code (ACI 530) connotation is gone and the present and future masonry code acronym is TMS 402/602. All three levels of masonry special inspections are discussed and which level of special inspections to apply to which project is reviewed clearly. The frequency of masonry field testing and inspections are covered as well as discussing which special inspections are periodic and which are continuous. The age old confusion on masonry mortar field compressive strengths and the interaction of ASTM standards C144, C270 and C780 are addressed.



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### NEW CONCRETE AND MASONRY BUILDING CODES ACI 318 and TMS 402/602

Both the new concrete building code (ACI 318-14) and the new masonry code (TMS 402/602) were adopted by IBC 2015 and both codes offer substantial changes and revisions. ACI 318-14 represents the first concrete code REORGANIZATION since 1971 which is almost fifty years. The changes are very dramatic on many levels and offers brand new chapters (that never existed) like Chapter 26, "Construction Documents and Inspection" which basically stipulates what information that the specification writers should include in the contract documents. The new masonry code also has been reorganized and has expanded from 8 chapters to 14 chapters and five parts which is quite different. Some new mortar bed tolerances are introduced as well as increased compressive strength values for individual masonry units AND the  $f'_m$  masonry design strength.



### STRUCTURAL STEEL SPECIAL INSPECTIONS according to AISC 360 and AWS D1.1

Structural steel special inspections according to AISC 360, AWS D1.1 and the IBC code is discussed in this presentation. AISC 360's Chapter N, "Quality Assurance and Quality Control" has thirty pages of code requirements that replaced the old section M5 (one page) which addressed code requirements. Chapter N deletes all of the previous structural steel continuous inspections and requires ultrasonic testing (UT) on all full penetration welds for the first time in the history of the IBC code era. Welded and bolted connections are discussed in this session as well as cold-formed steel. The AC 472 accreditation program for pre-engineered metal building fabricators is also addressed in the program.



### INTRODUCTION to GEOTECHNICAL ENGINEERING

A basic introduction "101" course that addresses different aspects of geotechnical engineering and the general anatomy of the typical geotechnical report. Topics include subsurface exploration and how the geotechnical engineer develops the subsurface exploration program in order to obtain the field and laboratory data required to offer foundation design recommendations. Some insight is offered as how to use the geotechnical report verbiage during earthwork construction phases of the project to monitor compliance with the geotechnical recommendations and the IBC Code. Shallow and deep foundation special inspections during the installation process of the foundation system are addressed.



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### SPRAYED FIRE-RESISTANT MATERIALS (SFRM)

Join F&R for an AIA approved HOT discussion and presentation addressing primary code issues in the discipline of sprayed fire-resistant materials (SFRM) and special inspections required by IBC Chapter 17. The course will discuss the different types of SFRM related to density and bond strength. The code training session will address what specific tests and special inspections are required by the IBC code regarding thickness tests, density tests, bond strength tests, etc. Included in the overall discussion are the MAJOR code changes due to post 9/11 investigative committee studies and recommendations. ASTM E 605 "Thickness and Density of SFRM" and ASTM E 736 "Cohesion and Adhesion of SFRM" are discussed insofar as how these ASTM test methods contribute to the IBC code requirements.

### SOILS and FOUNDATIONS – ADDRESSING SPECIAL INSPECTIONS and CODE COMPLIANCE

This course addresses what you need to know about the special inspections that are required by the IBC code as they relate to earthwork construction, compacted fill materials and the relationship of site soils and building foundations. What minimum information does the code require to be listed in the geotechnical report and what specific tests and inspections are required by the IBC building code during earthwork phases of the project. The discussion will include the "design bearing capacity" and the uses of the proper materials, proper equipment and proper test methods required by the CODE in order to verify that the design bearing capacity has been achieved. Various code reference standards will be discussed and how they magically make the CODE work. Actual field and laboratory test methods will be discussed so that the presentation attendees will understand how they impact the earthwork operations on a daily basis.

#### MEET YOUR PRESENTER

*Alan Tuck is THE foremost expert on IBC as it relates to Special Inspections in the mid-Atlantic. This may seem a provocative statement, but only if you have not attended one of his presentations and benefitted from Alan's enthusiastic discourse on topics of code. Heck, Alan practically WROTE the code. His research, experience and subsequent work became the foundation of codes developed by counties across the Commonwealth. Not only that, Alan has walked the talk. He is knowledgeable because he has the hands-on work experience to make it so. Over FIVE decades of it. Known all over Virginia and beyond and awarded and honored time and time again by more trade associations than we can name here, Alan Tuck has assisted A/E professionals of all ages and stripes with better understanding how the code relates to what they do every day.*



***F&R's free AIA presentations are ideally suited for lunch and learn seminars.  
For more information please contact:***

Alan S. Tuck  
Executive Director, Code Compliance and Training  
Office: 540.344.7939  
Mobile: 540.798.4440  
atuck@fandr.com