

### **Cementitious Materials (Tony Sorcic - Holcim (US) Inc.)**

Gain an understanding of the history of Portland Cement, its current chemical make-up, and how it's manufactured. You will also learn the basics of Supplemental Cementitious Materials (SCMs) including Pozzolans (Fly Ash) and Ground granulated blast furnace slag.

### **Aggregates (Tony Sorcic - Holcim (US) Inc.)**

Continue your education of Concrete Materials from the Cement course by attending aggregates. During this course you will gain a knowledge of aggregate composition and properties, along with the ASTM specifications that you need to be familiar with to make quality concrete pipe.

### **Admixtures (Ed Mansky - GCP Applied Technologies)**

Admixtures for concrete continue to be an ever increasing part of our concrete production. This presentation will give you a thorough introduction to admixtures for both wet and dry cast concrete. During this course you will gain a knowledge of admixtures, along with the ASTM specifications that you need to be familiar with to make quality concrete pipe.

### **Self Consolidating Concrete (Ed Mansky - GCP Applied Technologies)**

Learn the fundamentals of Self Consolidating Concrete (SCC). In addition to a brief history of SCC, this presentation will include a discussion of the properties, admixes, benefits, cautions, testing requirements, and special production requirements for SCC.

### **Mix Design (John Kallemeyn, P.E. - Forterra)**

Proper mix design is the basis for the quality and cost of our products. This session sets the foundation for understanding basic mix design. In addition to learning what "specific gravity" is and its relationship to the volume calculations in a mix design, you will learn about "aggregate absorption" to help manage moisture in your aggregates during batching and how to apply these concepts to mix design calculations.

### **Concrete Technology (John Kallemeyn, P.E. - Forterra)**

Learn the basics of understanding the proportioning of materials, (cementitious, aggregate, water, and admixtures), to create wet or dry cast concrete for Pipe and Precast. Also included is a discussion of some of the most common "bad" things that can happen to concrete, such as *ASR* and *Sulfate Attack*, and how to avoid them.

### **Reinforcement (Mel C. Marshall - Mel C. Marshall Industrial Consultants Inc.)**

We all know reinforcement makes our product stronger, more durable, and easier to handle. But how does it accomplish all of this? And why is it so important to be produced EXACTLY how the project plans specify? Mel Marshall will discuss the purpose of reinforcing, the types and identifications, basic welding requirements, fabrication of cages, and the specifications that govern it.

### **Curing (Mel C. Marshall - Mel C. Marshall Industrial Consultants Inc.)**

Proper curing is necessary for the production of quality concrete pipe and manholes. Learn about the importance, and purpose, of moisture and temperature in the curing process, as well as ways to make curing more effective.

### **Pre/Post Pour Inspection (Rich Brewster - Northern Concrete Pipe, Inc.)**

This course covers equipment inspection, upkeep and documentation for pre and post-pour inspection of pipe and precast products. Critical areas such as form set-ups, reinforcement and damage inspection and brief look into Q-Cast requirements will also be discussed.

## **Calculations & Review for Quality School Test (Rich Brewster - Northern Concrete Pipe, Inc.)**

### **Product Testing (Paul Krauss - Wiss, Janney, Elstner Associates)**

Learn about the proper methods to test pipe in Three-Edge Bearing (external load crushing strength) and learn about water-tightness testing and strength testing of joints. Test procedures for water tightness (air, vacuum, and hydrostatic), Off-Center Joint test and Joint Shear tests, and the gasketed Storm Sewer joint test will be discussed.

### **Repairs & Finishing (Paul Krauss - Wiss, Janney, Elstner Associates)**

Learn about pipe finishing and repairs. Does all damage need to be repaired? Learn what pipe damage should be repaired and procedures and materials used to complete both cosmetic and structural repairs.

### **Qcast Certification (Paul Krauss - Wiss, Janney, Elstner Associates)**

Most of us know why we should get Q-Cast certified but struggle with getting started or with improving our scores. To assist you with overcoming these problems, the ACPA has gone to the source with Paul Krauss, of Wiss, Janney, Elstner Associates (WJE). WJE, experts in materials science engineering, is the third party auditing firm that conducts the Q-Cast Plant Certification annual inspections. Paul will give an insider's view of what the Q-Cast inspector looks for when inspecting a plant for the first time and subsequent inspections.