

Concrete Finishing: Level One

23101 Introduction to Concrete Construction and Finishing (10 Hours)

Provides an introduction to the methods and procedures used in concrete finishing. Introduces terms of the trade and tools and equipment used to place, finish, and cure concrete. Explains methods and techniques for constructing concrete structures.

23102 Safety Requirements (5 Hours)

Explains safety requirements for concrete construction and finishing. Provides information on OSHA requirements with regard to hazard communication, fall protection, and use of personal protective equipment. Covers topics such as general work site safety, use of chemicals, and how to safely use hand and power tools.

23103 Properties of Concrete (10 Hours)

Introduces the trainee to the properties of concrete and the components that make up the concrete mixture. Describes chemical and physical properties of cement, aggregate, and various types of admixtures. Explains basic tests used to determine properties such as slump and ultimate strength.

23104 Tools and Equipment (7.5 Hours)

Describes tools and equipment used in the production, placing, and curing of concrete. Explains safe operation and maintenance requirements. (The trainee is given the opportunity to operate each hand tool, and larger pieces of power equipment are demonstrated.)

23105 Preparing for Placement (12.5 Hours)

Details the methods and procedures used in preparing for placing concrete. Includes background information about site layout, forms requirements, and subgrade preparation. Describes requirements for various types of joints and reinforcement. Presents information regarding the ordering of concrete from a mixing or batch plant.

23106 Placing Concrete (12.5 Hours)

Presents requirements and methods for properly placing concrete. Includes information on conveying and placing fresh concrete using various types of equipment, such as wheelbarrows, pumps and conveyors. Describes techniques for spreading, consolidating and striking off concrete.

23107 Finishing, Part One (20 Hours)

Describes basic finishing techniques for slabs and other horizontal structures. Explains proper use of floats, trowels, edgers, and groovers and demonstrates their uses. Discusses requirements for cutting joints using different types of saws. Provides hands- on practice for finishing concrete slabs.

23108 Curing and Protecting Concrete (5 Hours)

Introduces the trainee to the methods and procedures used in curing and protecting concrete. Covers the types of curing commonly performed for both horizontal and vertical placement. Describes techniques for protecting concrete during hot and cold weather.

23109 Introduction to Troubleshooting (5 Hours)

Describes basic problems for the processes of placing, finishing, and curing. Defines symptoms of each type of problem, and discusses their causes. Presents ways to reduce or eliminate these problems.

Concrete Finishing: Level Two

23201 Properties of Concrete, Part Two (7.5 Hours)

Describes the physical and chemical properties of various materials used in a concrete mix. Includes the description of chemical and mineral admixture; lightweight concrete; high strength concrete; flowable fill; and various types of paving materials. Discusses expected results of the use of admixtures.

23202 Estimating Concrete Quantities (10 Hours)

Covers the methods and techniques used in estimating materials quantities for concrete construction. Provides background for use of plans and drawings as well as math calculations. Gives example calculations for estimating quantities of concrete for curb and gutter, stairs, slab, wall footings, and columns.

23203 Forming (20 Hours)

Describes forming requirements. Includes types of forms; forming materials; use of release agents; form accessories; placement of anchors and embedments; and form removal. Highlighted safety requirements are with emphases on reshoring precautions and procedures.

23204 Site Concrete (30 Hours)

Includes descriptions and techniques for forming, constructing, and finishing various types of site work. Focuses on the construction of steps and stairs; curb and gutter; sidewalks and driveways; and low vertical structures. Describes different finishing techniques.

23205 Architectural Finishes (20 Hours)

Introduces architectural concrete and architectural finishes. Provides information on the surface classes of architectural concrete and the treatments commonly specified to make them attractive. Includes special surface treatments, special forms, and form liners.

23206 Industrial Floors (22.5 Hours)

Presents construction and finishing of this special class of concrete work. Describes use of special tools and finishing techniques. Explains procedures for preparation, joint layout, placing, finishing, and curing.

23207 Superflat Floors (22.5 Hours)

Presents requirements for constructing superflat floors and techniques used to achieve required results. Explains procedures for preparation, placing, finishing, and curing. Describes techniques for measuring tolerances of slabs, and methods for troubleshooting during placement and finishing. Explains repair procedures.

23208 Surface Treatments (12.5 Hours)

Provides an overview of the various types of surface treatments that can be applied to concrete structures. Includes the requirements for and application of dry shakes, self-leveling topping, epoxies, and shotcrete.

23209 Quality Control (10 Hours)

Introduces the ideas and tasks related to sampling, testing, and inspection of concrete and its component materials. Describes various types of specifications, along with the standard procedures for sampling and testing concrete mix. Covers inspection procedures for forms, construction methods, and finishing.

23210 Making Repairs (10 Hours)

Explains the requirements for making repairs to concrete based on specific problems. Explains and demonstrates repair methods. Describes the use of special tools and materials.