



Level One

MODULE 28101 - INTRODUCTION TO MASONRY

1. Review the history of masonry.
2. Describe modern masonry materials and methods.
3. Understand career ladders and advancement possibilities in masonry work.
4. Describe the skills, attitudes, and abilities needed to work as a mason.

MODULE 28102 - SAFETY REQUIREMENTS

1. Describe safety precautions and general housekeeping practices that should be followed at a typical work site.
2. Describe the safety precautions that should be followed when working in special areas such as trenches, excavations, confined spaces, scaffolding, and limited access zones.
3. Describe the proper procedures for handling and maintaining masonry tools safely.
4. Explain the importance of safety meetings and what they involve.
5. Identify and discuss the purpose of federal safety designation colors.
6. Demonstrate setting up ladders according to OSHA safety regulations under the supervision of a qualified person.
7. Discuss the uses of and demonstrate proper procedures for putting on eye protection, respiratory protection, and a safety harness.
8. Demonstrate correct safety procedures for fueling and starting a gas-fueled power tool.

MODULE 28103 - TOOLS AND EQUIPMENT

1. Identify and name the tools used in performing masonry work.
2. Identify and name the equipment used in performing masonry work.
3. Describe how each tool is used.
4. Describe how the equipment is used.
5. Associate trade terms with the appropriate tools and equipment.
6. Demonstrate the correct procedures for assembling and disassembling scaffolding according to federal safety regulations, under the supervision of a competent person.

MODULE 28104 - MATHEMATICS, DRAWINGS, AND SPECIFICATIONS

1. Understand and work with denominate numbers.
2. Read a mason's measure.
3. Convert measurements in the U.S. common system into their metric equivalents.
4. Recognize, identify, and calculate areas, circumferences, and volumes of basic geometric shapes.
5. Identify the basic parts of a set of drawings.
6. Discuss the different types of specifications used in the building industry and the sections that pertain to masonry.

MODULE 28105 - MORTAR

1. Name and describe the primary ingredients in mortar and their properties.
2. Identify the various types of mortar used in masonry work.
3. Describe the common admixtures and their uses.
4. Identify the common problems found in mortar application and their solutions.
5. Properly set up the mortar mixing area.
6. Properly mix mortar by hand.
7. Properly mix mortar with a mechanical mixer.

MODULE 28106 - MASONRY UNITS AND INSTALLATION TECHNIQUES

1. Describe the most common types of masonry units.
2. Describe and demonstrate setting up a wall.
3. Lay a dry bond.
4. Spread and furrow a bed joint and butter masonry units.
5. Describe the different types of masonry bonds.
6. Cut brick and block accurately.
7. Lay masonry units in a true course.

Level Two

MODULE 28201 - RESIDENTIAL PLANS AND DRAWING INTERPRETATION

1. Understand the organization of residential plans and drawings.
2. Interpret dimensions and scales on drawings.
3. Interpret information on residential plans.
4. Estimate materials quantities from plans and drawings.

MODULE 28202 - RESIDENTIAL MASONRY

1. Understand the requirements for construction of various types of residential foundations.
2. Identify and explain the characteristics, uses, and installation techniques for brick pavers.
3. Lay out and construct steps, patios, and decks made from masonry units.
4. Lay out and construct chimneys and fireplaces.

MODULE 28203 - GROUT AND OTHER REINFORCEMENT

1. Name and describe the primary ingredients in grout and their properties.
2. Identify the different types of grout used in masonry work.
3. Describe the common admixtures and their uses.
4. Describe the use of steel bar reinforcement in masonry construction.
5. Use the proper techniques to apply grout in low and high lifts.

MODULE 28204 - METAL WORK IN MASONRY

1. Describe the uses and installation of vertical reinforcement.
2. Describe the uses and installation of different types of horizontal joint reinforcements and ties.
3. Describe the uses and installation of different anchors, fasteners, and embedded items.
4. Describe the installation of hollow metal frames.
5. Describe the functions and installations of sills and lintels.

MODULE 28205 - ADVANCED LAYING TECHNIQUES

1. Recognize the structural principles and fundamental uses of basic types of walls.
2. Recognize the requirement for, and function of, control joints and expansion joints.
3. Construct various types of walls using proper reinforcement, jointing, and bonding techniques.
4. Construct speciality structures such as manholes, segmented block walls, and screens.
5. Identify and explain the different types of masonry arches used today.
6. Construct a semicircular and jack arch.

MODULE 28206 - CONSTRUCTION TECHNIQUES AND MOISTURE CONTROL

1. Explain and demonstrate techniques for constructing masonry around windows, doors, and other openings.
2. Explain the requirements for wall bracing and demonstrate the techniques used to construct pilasters and other types of bracing.
3. Identify the various types of insulation used in conjunction with masonry construction and explain installation techniques.
4. Identify the need for moisture control in various types of masonry construction and demonstrate the techniques used to eliminate moisture problems.

MODULE 28207 - ELEVATED WORK

1. Describe the appropriate steps necessary for setting up and maintaining elevated workstations.
2. Properly operate material handling and hoisting equipment.
3. Describe the safety requirements and guidelines employed in elevated and high-rise construction.
4. Describe basic activities that can be used on the job to prevent elevated workstation accidents.
5. Understand scaffolding positioning and how it affects laying technique.

MODULE 28208 - CONSTRUCTION INSPECTION AND QUALITY CONTROL

1. Discuss industry standards for quality control.
2. Build masonry sample panels and prisms.
3. Perform field tests on mortar.
4. Discuss and perform field inspections.

Level Three

MODULE 28301 - MASONRY IN HIGH-RISE CONSTRUCTION

1. Recognize and explain the use of high-rise construction equipment.
2. Understand and apply block and brick construction techniques typically employed in high-rise construction.
3. Understand and apply safety guidelines employed in high-rise construction.
4. Safely work with materials handling equipment in high-rise construction

MODULE 28302 - SPECIALIZED MATERIALS AND TECHNIQUES

1. Explain the various techniques used to provide adequate protection during hot- or cold-weather masonry construction.
2. Apply a working knowledge of all-weather construction techniques.
3. Apply construction techniques for surface bonding mortar.
4. Understand and apply techniques for construction of stone walls and other stone building surfaces.
5. Understand and apply basic knowledge of various materials such as glass block, acid brick, and refractory brick.

MODULE 28303 - REPAIR AND RESTORATION

1. Recognize signs of deterioration in masonry structures.
2. Describe the causes of efflorescence, cracking, and faulty mortar joints.
3. Describe the procedures for preventing and correcting efflorescence, cracking, and faulty mortar joints.
4. Describe the procedures for preventing and correcting water damage in basements.
5. Describe the procedures for rebuilding fireplaces.
6. Recognize types of paint failures.
7. Describe the types of paint available for use on masonry.

MODULE 28304 - COMMERCIAL DRAWINGS

1. Recognize the difference between commercial and residential construction drawings.
2. Identify the basic keys, abbreviations, and other references contained in a set of commercial drawings.
3. Accurately read a set of commercial drawings.
4. Explain basic construction details and concepts employed in commercial construction.

MODULE 28305 - ESTIMATING

1. Understand and apply basic materials estimating procedures for concrete block construction and brick construction.
2. Understand and apply basic estimating procedures for reinforcements, ties, and other materials.
3. Understand and apply procedures for quantities of mortar and mortar materials.

MODULE 28306 - PROJECT PLANNING AND SUPERVISION

1. Describe the general duties and responsibilities of masonry foremen and supervisors.
2. Describe the basic activities required to organize project resources.
3. Operate and effectively use basic surveying equipment to lay out foundations, walls, and other structural components.
4. Understand and apply inspection procedures normally used on a project.