

**SPRINKLER FITTING: Level One**

**18101 Introduction to the Trade (6 Hours)**

Explains the importance of having goals and maintaining good working relationships on the job. Introduces workplace safety, material handling, and common tools.

**18102 Hangers, Supports, Restraints, and Guides (12 Hours)**

Describes types of pipe hangers, supports, restraints, and guides found at the job site and shows trainees how to determine their field placement. Hanger installation and earthquake bracing are also covered.

**18103 Threaded Steel Pipe (15 Hours)**

Identifies the various materials used in threading piping systems and explains the types and used of various screwed fittings. Covers steps for threading steel pipe and determining lengths.

**18104 Flanged, Grooved, and Plain-End Fittings (15 Hours)**

Identifies and describes flanged, grooved, and plain-end fittings and explains how to groove pipe and install fittings. Covers procedures for determining correct pipe length.

**18105 Plastic Pipe (9 Hours)**

Provides the size classifications, fitting and joining methods, and handling and storage requirements of CPVC. Discusses tools used to assemble CPVC systems as well as hanger requirements.

**18106 Copper Tube Systems (9 Hours)**

Identifies the types of copper tube and fittings approved for use in fire sprinkler systems. Explains how to solder and braze joints and describes support spacing requirements.

**18107 Underground Pipe (12 Hours)**

Discusses properties and classifications of soils, sloping requirements, excavation support systems, and backfilling requirements. Provides the size classifications, fittings, joining methods, and handling and storage requirements of underground pipe.

**SPRINKLER FITTING: Level Two**

**18201 Introduction to Sprinklers (9 Hours)**

Introduces various types of sprinklers used in the fire protection industry. Identifies and explains fusing elements, sprinkler orientation, spray patterns, and finishes of various sprinklers.

**18202 Standard Sprinkler (21 Hours)**

Identifies and explains standard sprinklers and differences in water distribution patterns between sprinkler spray upright and sprinkler spray pendent sprinklers. Location, area of coverage, spacing, and positioning requirements for standard sprinklers are also covered.

**18203 Special Sprinklers and Nozzles (24 Hours)**

Introduces special sprinklers and nozzles and their limitations. Address area of coverage, positioning requirements for standard sprinklers are also covered.

**18204 General Purpose Valves (15 Hours)**

Covers the various types of valves used in the sprinkler industry and their applications. Explains the function, used, and operation of various types of valves used in sprinkler system installations. Offers practice in maintaining and installing valves.

**18205 Wet Fire Sprinkler Systems (36 Hours)**

Explains the purpose, function, and operation of components used in wet fire sprinkler systems. Simplified and/or nonstandard risers and trim, flow switches and pressure switches, fire department connections, hose stations, inspector's test connections and auxiliary drains are also covered.

**18206 Dry-Pipe Systems (45 Hours)**

Explains the purpose, function, and operation of components used in dry-pipe systems, including appropriate air pressure precautions and calculations methods for determining system volume. Discusses differential dry-pipe valves, air and nitrogen supplies for dry-pipe valves and systems, and their requirements.

**SPRINGKLER FITTING: Level Three**

**18301 General Trade Math (33 Hours)**

Explains math used to perform sprinkler system design, layout, and installation. Describes the use of English, metric, and SI systems measurement and identifies the similarities and differences in the units of measurements.

**18302 Construction and Plans (33 Hours)**

Describes the types of construction and plans used for the installation system symbols, sprinkler system layout, and building codes and standard that must be followed. Includes blueprints.

**18303 Water Supplies (24 Hours)**

Identifies the chemical and physical properties of water and covers the different water supplies available for automatic sprinkler systems. Describes the types of tanks, water main configuration, flow test procedures, system meters, and fire department connections, and split pit requirements.

**18304 Standpipes (24 Hours)**

Identifies and explains wet and dry standpipes; describes standpipe sizing, classification, and building codes; and reviews standards that must be followed for installation. Explains fire department connections, sleeves, bracing, and fire stopping.

**18305 Preaction/Deluge Systems (39 Hours)**

Covers different types of preaction/deluge systems. Discusses deluge valves, auxiliary detection systems, release systems, and hydraulic and pneumatic activation. Discusses installation and troubleshooting techniques.

**SPRINKLER FITTING: Level Four**

**18401 Fire Pumps (36 Hours)**

Identifies and explains various fire pump systems, pumps and drivers, controllers, and sensing line. Describes supervision and project requirement checklists. Testing, maintenance, and troubleshooting are discussed, as well as inspection and maintenance in existing pump rooms and frequently encountered problems.

**18402 Special Extinguishing Systems (42 Hours)**

Identifies and explains exposure systems, water spray systems, foam systems, carbon dioxide systems, Halon systems, auxiliary systems and local alarm systems. Limited water systems, fire extinguishers and water mist suppression systems are also covered.

**18403 System Design (36 Hours)**

Identifies and explains basic hydraulic concepts and selection of hydraulic design methods. System configuration, design criteria, discharge characteristics, and types of pressure loss are explained. Performing fire sprinkler systems hydraulic calculations is also covered in this module.

**18404 Inspection and Maintenance (15 Hours)**

Identifies and explains inspection and maintenance of wet pipe systems, dry pipe systems, preaction/deluge systems, and special systems.

**18405 Foremanship (15 Hours)**

Introduces the trainee to foremanship and covers responsibilities, leadership, and safety. Also explains project documentation and reports related to materials tracking and labor tracking.