

Sprinkler Fitter Apprenticeship Program

Revised September 1, 2004

Overview

Sprinkler fitters are employed by contractors to perform the installations of sprinkler fire protection systems. Installations of these life safety systems vary in application and types of systems. Work is performed in new construction of buildings or within existing structures. Most jobs require working at heights on ladders and/or lifts. Some work is also performed on underground fire mains inside excavated trenches. The work includes lifting, bending and working with hand-held tools.

Course Descriptions

FSF101 Introduction to Construction Basics

Prerequisite: None

Textbooks: Core Curriculum-Introductory Craft Skills and Sprinkler Fitter-Level 1

This course provides a basic introduction to construction work. Emphasis is placed on construction job site safety. Topics include: basic math and the selection, inspection, use and maintenance of common hand tools and the basic components of blueprints. Skills that apply to all trades, such as basic rigging and crane use are also covered. Students will develop techniques for communicating effectively with co-workers and supervisors.

FSF102 Introduction to Sprinkler Fitting

Prerequisite: FSF101

Textbooks: Sprinkler Fitter-Level 1 and Level 2

This course covers pipe hangers, supports, restraints, threading pipe systems and flanged, grooved and plain-end fittings. The student will also learn size classifications, fittings, joining methods and handling and storage requirements of plastic pipe, copper tube and underground pipe. The student will be introduced to the various types of sprinklers used in the industry and learn how to properly space and position sprinklers. Emphasis is placed on work place safety and material handling.

FSF103 Intermediate Sprinkler Fitting

Prerequisite: FSF 102 or instructor approval

Textbooks: Sprinkler Fitter-Level 2 and Level 3

This course covers additional types of sprinklers used in the fire protection industry. Emphasis is placed on area of coverage, positioning and obstruction requirements. The student will learn about the various types of valves used in the sprinkler industry and their applications. In addition, the student will learn trade math fundamentals and the types of construction and plans used for the installation of sprinkler systems. Special attention is given to types of drawings, sprinkler system symbols, sprinkler system layout and building codes standards that must be followed.

FSF201	Introduction to Sprinkler Fitting Systems
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Prerequisite: FSF 103 or instructor approval

Textbooks: Sprinkler Fitter-Level 2 and Level 3

This course covers the purpose, function and operation of components used in wet fire and dry-pipe systems and the different types of preaction/deluge systems.. Differential dry-pipe valves and their requirements are discussed and students are taught how to calculate system volume and capacity. Topics include: 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, air and nitrogen supplies for dry-pipe, how to calculate system volume and capacity and air pressure precautions. Special attention is given to deluge valves, auxiliary detection systems, release systems and hydraulic and pneumatic activation. Installation, operation, maintenance, and troubleshooting are explained in depth by using fully functional equipment installed in lab/classroom.

FSF202	Principles of Water Supplies, Standpipes, Pumps, and Foremanship
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Prerequisite: FSF 102-106 or instructor approval

Textbooks: Sprinkler Fitter-Level 3 and Level 4

This course is a study of the chemical and physical properties of water as it relates to the different water supplies available for automatic sprinkler systems. Fire department connections, sleeves, bracing and fire stopping are also explained. The use and requirements for pressure reducing valves, flow considerations, and high-pressure systems are explained. The students will also learn the duties and responsibilities associated with being a foreman. Topics include: the types of tanks, water main configurations, flow test procedures, system meters, fire department connection and backflow prevention, fire pump systems, pumps and drivers, and sensing line. Students also perform live pump tests using an electric horizontal split case fire pump as an example.

FSF203	Advanced Topics of Sprinkler Fitting
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Prerequisite: FSF 202 or instructor approval

Textbooks: Sprinkler Fitter-Level 3 and Level 4

This course covers the inspection and maintenance of special extinguishing systems. The type of systems covered include: exposure systems, water spray systems, foam systems, carbon dioxide systems, halon systems, auxiliary, local alarm systems, fire extinguishers and water mist suppression systems, wet pipe systems, dry pipe systems, and preaction/deluge systems. The student will also be taught how to identify the basic hydraulic concepts and selection of hydraulic design methods. Emphasis is placed on system configuration design criteria, discharge characteristics and types of pressure loss.