

L1 SPRINKLER FITTING

LEVEL 1



Curriculum Notes

- 155 Hours
- Includes 75 hours of Core, which is a prerequisite for Level 1 completion and must be purchased separately. For more information, please refer to page 9 of the full Curriculum Catalog or visit www.nccer.org/catalog.
- Revised: 2021, Fourth Edition to reflect NFPA 13
- Downloadable instructor resources that include module tests, PowerPoints®, and performance profile sheets are available at www.nccer.org/irc.

PAPERBACK

Trainee Guide: \$69.99

ISBN

978-0-13-747549-0

MODULES

The modules listed below are included in the Trainee Guide. The following ISBNs are for ordering individual modules only.

Occupational Overview: The Sprinkler Industry

(5 Hours)

ISBN 978-0-13-747554-4

(Module ID 18101) Describes the basic types of sprinkler systems, the tools used to install them, and the codes and standards that apply to these systems. Covers the apprenticeship requirements for sprinkler fitters, employer and employee responsibilities, and career paths in the sprinkler industry.

Introduction to Components and Systems

(10 Hours)

ISBN 978-0-13-747556-8

(Module ID 18102) Provides an overview of the four main types of sprinkler systems. Describes testing laboratories and Listing requirements. Covers sprinkler characteristics, including thermal response, spray pattern and coverage area, orientation, K-factors, and temperature ratings. Describes various types of piping, valves, and pumps.

Steel Pipe and Fittings (20 Hours)

ISBN 978-0-13-747560-5

(Module ID 18103) Describes the steel pipe used in sprinkler systems, including pipe types, schedules, and sizes. Covers common methods of end preparation, including cutting, reaming, grooving, and threading pipe. Describes various types of grooved, threaded, flanged, and plain-end fittings, along with the installation methods and applications of each type.

CPVC Pipe and Fittings (12.5 Hours)

ISBN 978-0-13-747561-2

(Module ID 18104) Covers the special type of chlorinated polyvinyl chloride (CPVC) pipe and fittings used in sprinkler systems. Describes the procedures for cutting, beveling, cleaning, and joining CPVC pipe and fittings. Provides an overview of how to test the installed sprinkler system.

Copper Tubing and Fittings (10 Hours)

ISBN 978-0-13-747564-3

(Module ID 18105) Copper tubing and fittings are introduced along with cutting and bending tools. The soldering process is described, including techniques for measuring, cutting, reaming, and cleaning tubing. Brazing is described, as are brazing metals, fluxes, and brazing equipment. Also covers grooved couplings and compression connections.

Underground Pipe (12.5 Hours)

ISBN 978-0-13-747582-7

(Module ID 18106) Describes the installation of underground piping systems. Covers ductile iron and PVC piping and components, including risers, backflow preventer assemblies, hydrants, and restraints. Also covers trench safety requirements, backfilling, and testing.

L2 SPRINKLER FITTING

LEVEL 2

Curriculum Notes

- 152.5 Hours
- Revised: 2022, Fourth Edition to reflect NFPA 13
- Downloadable instructor resources that include module tests, PowerPoints®, and performance profile sheets are available at www.nccer.org/irc.

PAPERBACK

Trainee Guide: \$94.99

ISBN

978-0-13-747571-1

MODULES

The modules listed below are included in the Trainee Guide. The following ISBNs are for ordering individual modules only.

Hangers, Supports, and Restraints (17.5 Hours)

ISBN 978-0-13-747573-5

(Module ID 18201) This module identifies strength/spacing requirements, types, and installation of pipe hangers, supports, and restraints. It also covers the installation of firestopping.

General Purpose Valves (15 Hours)

ISBN 978-0-13-747575-9

(Module ID 18202) This module explains the valves used to start, stop, direct, and regulate water flow in sprinkler systems. It covers the operation, applications, and basic maintenance of various valves, including indicating control valves, trim valves, check valves, hose valves, pressure control valves, and air venting valves.

Math for Sprinkler Fitters (20 Hours)

ISBN 978-0-13-747570-4

(Module ID 18203) This module reviews basic mathematical principles and explains how to apply them to various sprinkler fitting calculations, including floor areas, pitch, offsets, sprinkler spacing, pressure, and volume.

Shop Drawings (30 Hours)

ISBN 978-0-13-747583-4

(Module ID 18204) This module covers the shop drawings used in sprinkler fitting. It describes the symbols used for various sprinkler system components and explains how to use a shop drawing to identify the types and locations of piping and components. It also provides an overview of Building Information Modeling (BIM).

Standard Spray Sprinklers (20 Hours)

ISBN 978-0-13-747584-1

(Module ID 18205) This module describes the characteristics of standard spray sprinklers. It also covers types of construction, NFPA 13 light and ordinary hazard occupancy classifications, and installation considerations.

Wet Pipe Sprinkler Systems (25 Hours)

ISBN 978-0-13-747589-6

(Module ID 18206) This module describes the operation and installation of wet pipe sprinkler systems. It covers various system controls and switches and explains how they operate. It also describes how to complete a Contractor's Material and Test Certificate for Aboveground Piping and provides an overview of basic system troubleshooting procedures.

Dry Pipe Sprinkler Systems (25 Hours)

ISBN 978-0-13-747591-9

(Module ID 18207) This module describes the operation and installation of dry pipe sprinkler systems. It covers differential and mechanical dry pipe valves and trim, including switches, gauges, air sources, accelerators, and drains. It also provides an overview of basic system troubleshooting and acceptance testing procedures, including the completion of a Contractor's Material and Test Certificate for Aboveground Piping for a dry pipe sprinkler system.

Continued on following page

Sprinkler Fitting Level 3

L3 SPRINKLER FITTING

LEVEL 3

Curriculum Notes

- 147.5 Hours
- Revised: 2013, Third Edition to reflect NFPA 13
- Downloadable instructor resources that include module tests, PowerPoints®, and performance profile sheets are available at www.nccer.org/irc.

PAPERBACK

Trainee Guide: \$94.99

ISBN

978-0-13-383079-8

MODULES

The modules listed below are included in the Trainee Guide. The following ISBNs are for ordering individual modules only.

Deluge/Preaction Systems (40 Hours)

ISBN 978-0-13-378871-6

(Module ID 18301-13) Describes deluge and preaction systems and explains installation techniques and troubleshooting. Covers hydraulic and pneumatic release mechanisms, non-interlocked and interlocked preaction systems and Firecycle® Systems.

Standpipes (25 Hours)

ISBN 978-0-13-378872-3

(Module ID 18302-13) Describes standpipe classifications and explains flow capabilities of each type. Covers requirements for sizing and installation of standpipes. Discusses pressure-reducing valves under flow and no-flow conditions. Also covers LINK-SEAL® installations.

Water Supplies (15 Hours)

ISBN 978-0-13-378873-0

(Module ID 18303-13) Covers basic water chemistry and properties. Discusses methods of determining water supply requirements and considerations for supply systems. Discusses infrastructure, measurement of water supply capability, water supply appurtenances, fire department connections, and typical city water pits.

Fire Pumps (40 Hours)

ISBN 978-0-13-378874-7

(Module ID 18304-13) Covers fire pump categories and components. Describes fire pump controller requirements and fire pump performance and alignment. Explains pump and driver characteristics and performance curves as well as controllers, sensing lines, supervision, and starting methods. Outlines project requirements, installation, maintenance, and troubleshooting.

Application-Specific Sprinklers and Nozzles

(27.5 Hours)

ISBN 978-0-13-378875-4

(Module ID 18305-13) Describes application-specific sprinkler types and requirements. Discusses area of coverage, positioning, and obstruction requirements and explains system selection.

L4 SPRINKLER FITTING

LEVEL 4

Curriculum Notes

- 145 Hours
- Revised: 2013, Third Edition to reflect NFPA 13
- Downloadable instructor resources that include module tests, PowerPoints®, and performance profile sheets are available at www.nccer.org/irc.

PAPERBACK

Trainee Guide: \$90

ISBN

978-0-13-383105-4

MODULES

The modules listed below are included in the Trainee Guide. The following ISBNs are for ordering individual modules only.

System Layout (45 Hours)

ISBN 978-0-13-378882-2

(Module ID 18401-13) Identifies basic hydraulic concepts and selection of hydraulic design methods. System configuration, design criteria, discharge characteristics, and types of pressure loss are explained. Explains how to perform fire sprinkler system hydraulic calculations.

Inspection, Testing, and Maintenance

(17.5 Hours)

ISBN 978-0-13-378883-9

(Module ID 18402-13) Describes initial and periodic testing and inspection requirements, as well as maintenance and repair of wet-pipe systems, dry-pipe systems, preaction/deluge systems, and special systems.

Special Extinguishing Systems (42.5 Hours)

ISBN 978-0-13-378884-6

(Module ID 18403-13) Identifies the following extinguishing exposure systems: water spray, foam, carbon dioxide, Halon, auxiliary and local alarm. Limited water systems, fire extinguishers, and water mist suppression systems are also covered.

Introductory Skills for the Foreman (20 Hours)

ISBN 978-0-13-378885-3

(Module ID 18404-13) Introduces the role of foremanship and covers responsibilities, leadership, and safety. Also explains project documentation and reports related to materials tracking and labor tracking.

Procedures and Documentation (20 Hours)

ISBN 978-0-13-378887-7

(Module ID 18405-13) Explains the importance of proper documentation to ensure correct installation and avoid future rework and possible unintentional releases. Emphasizes the need to properly document the actual installation using written reports and photographs. Includes causes of and responses to water damage, and provides a case history of an unintentional release.