L1 MECHANICAL INSULATING

LEVEL 1

Curriculum Notes

REVISION COMING SOON!

- 167.5 Hours (Includes 72.5 hours of Core Curriculum, which is a prerequisite for Level 1 completion and must be purchased separately. See p. 11 for ordering information.)
- Updated: 1999

PAPERBACK	ISBN
Trainee Guide: $67	978-0-13-909359-3
Instructor Guide: $67	978-0-13-909383-8

MODULES

All of the modules listed below are included in the Trainee and Instructor Guide(s) listed above. The following ISBN and pricing information is for ordering individual modules only.

Orientation *(5 Hours)*

Trainee $19 ISBN 978-0-13-909169-8
Instructor $19 ISBN 978-0-13-909235-0
(Module ID 19101) Provides an overview of the insulation industry, factors to consider when choosing a vocation in the insulation industry, and why insulation is used.

Trade Relations *(7.5 Hours)*

Trainee $19 ISBN 978-0-13-909177-3
Instructor $19 ISBN 978-0-13-909243-5
(Module ID 19102) Discusses the importance of contracts, relationships with other members of the construction team, and effective communication.

Tools of the Trade *(7.5 Hours)*

Trainee $19 ISBN 978-0-13-909185-8
Instructor $19 ISBN 978-0-13-909250-3
(Module ID 19103) Identifies tools of the insulation trade, their proper use and care, and safety procedures for each.

Material Handling, Storage, and Distribution *(2.5 Hours)*

Trainee $19 ISBN 978-0-13-909193-3
Instructor $19 ISBN 978-0-13-909268-4
(Module ID 19104) Covers receiving, stacking, and storage of insulation materials, as well as material movement.

Characteristics of Pipe Insulation *(5 Hours)*

Trainee $19 ISBN 978-0-13-909201-5
Instructor $19 ISBN 978-0-13-909276-3
(Module ID 19105) Covers identification of types, sizes, and uses of pipe and insulation thickness. Explains the relationship between pipe size and insulation size.

Installing Fiberglass Pipe Insulation *(30 Hours)*

Trainee $19 ISBN 978-0-13-909219-0
Instructor $19 ISBN 978-0-13-909284-8
(Module ID 19106) Describes characteristics of fiberglass pipe insulation and sizing requirements, as well as characteristics of ASJ jacketing.

Installing Pipe Fittings, Valves, and Flanges *(40 Hours)*

Trainee $19 ISBN 978-0-13-909227-5
Instructor $19 ISBN 978-0-13-909292-3
(Module ID 19107) Explains insulation requirements for basic types of fittings, valves, and flanges; cutting and installing mitered segments to pipe elbows; cutting for application to flanged pipe valves and insulating pipe flanges; and cutting and installing plug 90-degree ells.

L2 INSULATING

LEVEL 2

Curriculum Notes

- 147.5 Hours
- Updated: 1999
- A revision is under way and will be in stock in 2016; for more information visit www.nccer.org/book-updates.

PAPERBACK	ISBN
Trainee Guide: $97	978-0-13-909417-0
Instructor's Guide: $97	978-0-13-909433-0

MODULES

All of the modules listed below are included in the Trainee Guide and the Instructor's Guide. The following ISBN and pricing information is for ordering individual modules only.

Installing Flexible Foam Insulation *(32.5 Hours)*

Trainee $20 ISBN 978-0-13-910167-0
Instructor $20 ISBN 978-0-13-910266-0
(Module ID 19201) Covers proper tool use and procedures for installing flexible foam insulation, including how to cut and install flexible foam insulation on pipe fittings, valves, flanges, equipment, and air ducts.

Installing Blanket Insulation for Ducts *(7.5 Hours)*

Trainee $20 ISBN 978-0-13-910175-5
Instructor $20 ISBN 978-0-13-910274-5
(Module ID 19202) Covers fiberglass blanket installation to ducts and apparatus and discusses vapor-sealed blanket insulation facings.

Installing Board Insulation for Ducts *(20 Hours)*

Trainee $20 ISBN 978-0-13-910183-0
Instructor $20 ISBN 978-0-13-910282-0
(Module ID 19203) Covers fiberglass board insulation applications, such as cutting fiberglass board insulation to fit over standing seams and stiffeners, vapor-seal applications, and cutting and installing fiberglass board insulation on round or oval ducts.

Installing Calcium Silicate/Expanded Perlite Pipe Insulation *(15 Hours)*

Trainee $20 ISBN 978-0-13-910191-5
Instructor $20 ISBN 978-0-13-910290-5
(Module ID 19204) Discusses the safe handling and storage of calcium silicate pipe insulation, how to make accurate cuts, and how to install single- and double-layers of calcium silicate pipe insulation.

Installing Mineral Wool Insulation *(12.5 Hours)*

Trainee $20 ISBN 978-0-13-910209-7
Instructor $20 ISBN 978-0-13-910308-7
(Module ID 19205) Describes how to measure, cut, and score mineral wool insulation. Discusses attachments used on mineral wool, installation methods, sealing requirements, and how to use pin welding equipment.

Installing Rigid Foam Insulation *(20 Hours)*

Trainee $20 ISBN 978-0-13-910217-2
Instructor $20 ISBN 978-0-13-910316-2
(Module ID 19206) Covers the proper use of tools; handling and storage of rigid foam insulation; measuring, cutting, installing, and sealing rigid foam plastic and cellular glass insulation; cryogenic installation; expansion joints; contraction joints; and vapor stops.

Installing Board and Block Insulation *(17.5 Hours)*

Trainee $20 ISBN 978-0-13-910225-7
Instructor $20 ISBN 978-0-13-910324-7
(Module ID 19207) Covers the measuring requirements of board and block insulation; scoring, beveling, and cutting methods; and how to install board and block insulation on flat or curved surfaces and on large diameter tanks.

Cement and Fabric Finishes & Mastics *(10 Hours)*

Trainee $20 ISBN 978-0-13-910233-2
Instructor $20 ISBN 978-0-13-910332-2
(Module ID 19208) Covers the proper use of finishing tools, cleanup and protection procedures, and the limitations of cements, fabric finishes, and mastics.

Plumbing Systems *(7.5 Hours)*

Trainee $20 ISBN 978-0-13-910241-7
Instructor $20 ISBN 978-0-13-910340-7
(Module ID 19209) Covers cold and hot water plumbing systems, drainage systems in buildings, insulation requirements on plumbing systems, and piping hook-ups.

Chilled and Hot Water Heating Systems *(5 Hours)*

Trainee $20 ISBN 978-0-13-910258-5
Instructor $20 ISBN 978-0-13-910357-5
(Module ID 19210) Covers chilled and hot water heating and dual-temperature systems, including the types of pipes and equipment used in various systems. Explains which systems require insulation and why.

L3 INSULATING

LEVEL 3

Curriculum Notes

- 145 Hours
- Updated: 1999

PAPERBACK	ISBN
Trainee Guide: $97	978-0-13-909458-3
Instructor's Guide: $97	978-0-13-909474-3

MODULES

All of the modules listed below are included in the Trainee Guide and the Instructor's Guide. The following ISBN and pricing information is for ordering individual modules only.

Trade Math *(7.5 Hours)*

Trainee $20 ISBN 978-0-13-910365-0
Instructor $20 ISBN 978-0-13-910480-0
(Module ID 19301) Covers the use of measuring tools and scale rulers; describes how to make decimal, dimensional, and temperature conversions; and explains the use of formulas for calculating insulation surface areas of various objects.

Air Duct Systems *(5 Hours)*

Trainee $20 ISBN 978-0-13-910373-5
Instructor $20 ISBN 978-0-13-910498-5
(Module ID 19302) Covers the identification of various duct systems and their associated components.

Theory of Heat Transfer and Moisture Effects *(2.5 Hours)*

Trainee $20 ISBN 978-0-13-910381-0
Instructor $20 ISBN 978-0-13-910506-7
(Module ID 19303) Describes methods of heat transfer and moisture migration and discusses the application of various types of insulation to slow or prevent these processes.

Adhesives and Their Uses *(2.5 Hours)*

Trainee $20 ISBN 978-0-13-910399-5
Instructor $20 ISBN 978-0-13-910514-2
(Module ID 19304) Covers the identification, application, and use of adhesives.

Steam, Condensate, and Process Water Systems *(5 Hours)*

Trainee $20 ISBN 978-0-13-910407-7
Instructor $20 ISBN 978-0-13-910522-7
(Module ID 19305) Covers the identification of steam and condensate piping and describes steam and process water systems and their components.

Large Boilers, Breechings, Precipitators, and Apparatus *(10 Hours)*

Trainee $20 ISBN 978-0-13-910415-2
Instructor $20 ISBN 978-0-13-910530-2
(Module ID 19306) Describes boilers and related equipment, and their insulation requirements.

Refrigeration and Cryogenic Systems *(2.5 Hours)*

Trainee $20 ISBN 978-0-13-910423-7
Instructor $20 ISBN 978-0-13-910548-7
(Module ID 19307) Introduces air conditioning and refrigeration systems and their insulation requirements. Also describes the special insulation requirements of extremely low-temperature cryogenic systems.

Specialized Insulation Systems *(5 Hours)*

Trainee $20 ISBN 978-0-13-910431-2
Instructor $20 ISBN 978-0-13-910555-5
(Module ID 19308) Describes special-application insulation systems, including low-temperature and prefabricated panels; refractory insulation; soft pads and pre-shaped removable covers; preinsulated systems; spray, foam, and pour-in-place insulation; fire stops; noise and sound control systems; and cryogenic applications.

Blueprints and Specifications *(12.5 Hours)*

Trainee $20 ISBN 978-0-13-910449-7
Instructor $20 ISBN 978-0-13-910563-0
(Module ID 19309) Describes how to determine the insulation requirements of a project by interpreting construction drawings. Includes a set of blueprints with the Trainee module.

Jacketing Fabrication – Piping and Fittings *(40 Hours)*

Trainee $20 ISBN 978-0-13-910456-5
Instructor $20 ISBN 978-0-13-910571-5
(Module ID 19310) Covers the identification and applications of pipes and pipe fittings and describes types of pipe and fitting jacketing, along with layout installation procedures and securements.

Jacketing Fabrication – Vessels and Equipment *(40 Hours)*

Trainee $20 ISBN 978-0-13-910464-0
Instructor $20 ISBN 978-0-13-910589-0
(Module ID 19311) Covers the identification of vessel and equipment jacketing, along with layout, fabrication, installation procedures, and securements.

Sheet Metal Lagging *(12.5 Hours)*

Trainee $20 ISBN 978-0-13-910472-5
Instructor $20 ISBN 978-0-13-910597-5
(Module ID 19312) Describes the identification and application of common sheet metal tools, discusses fabrication and installation methods, and covers flashing and sealing techniques.