Sheet Metal

**MODULES**

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

**Occupational Overview: The Sheet Metal Industry**

- (Module ID 04010) Summarizes the history and development of the sheet metal craft. Explains the benefits of apprenticeship training, and identifies career opportunities in the trade.

**Sheet Metal Tools and Equipment**

- (Module ID 04012) Describes the hand and power tools used in the sheet metal craft, including layout tools and cutting, bending, and forming machines. Includes safety and maintenance guidelines.

**Sheet Metal Math and Measurements**

- (Module ID 04014) Covers calculations using denominate numbers, area and volume calculations, English-metric system conversions, basic geometry, percentages, and calculation of stretchouts.

**Sheet Metal Layout and Processes**

- (Module ID 04013) Introduces parallel line development, radial line development, and triangulation. Covers the selection and use of layout, hand, and machine tools. Discusses how to transfer patterns, and how to cut, form, and assemble parts.

**Bend Allowances**

- (Module ID 04026) Provides instruction and practice in determining proper bend allowances in sheet metal. Also reviews the interplay of different factors that affect the amount of bend allowance needed and the methods for calculating allowance.

**Soldering**

- (Module ID 04207) Identifies soldering tools, materials, and techniques. Also provides a wide range of soldering tasks for practice.

**Air Distribution Systems**

- (Module ID 03109) Describes the factors related to air movement and its measurement in common air distribution systems. Presents the required mechanical equipment and materials used to create air distribution systems. Introduces basic system design principles for both hot and cold climates.
Sheet Metal Level 3

L3 SHEET METAL

Curriculum Notes
• 145 Hours
• Updated: 2019
• NATE-Recognized Training Provider
• Downloadable instructor resources that include module tests, PowerPoints®, and performance profile sheets are available at www.nccer.org/irc.

PAPERBACK ISBN
Individual Modules: $24.99
see module list

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

Commercial Airside Systems (12.5 Hours)
(Module ID 03201) Describes the systems, equipment, and operating sequences commercial airside system configurations such as constant volume single-zone and multi-zone, VVT, VAV, and dual-duct VAV.

Principles of Airflow (25 Hours)
(Module ID 04303) Explains how airflow is affected by duct size, shape, and fittings. Discusses submittals. Covers how airflow passes through openings, fittings, and ducts.

Using Construction Drawings in Sheet Metal (20 Hours)
(Module ID 04308) Covers equipment schedules, material takeoffs, and craft scheduling. Explains how to put knowledge of construction drawings and documents to work as a sheet metal fabricator or installer.

Sheet Metal Job Specifications (20 Hours)
(Module ID 04305) Explains how to balance an air distribution system so that the right amount of air is correctly distributed at the proper velocities and returned to the heating and cooling units. Reviews the tools and techniques used for adjusting fans, volume dampers, registers, and grilles. Provides proper techniques for duct leakage testing.

Air Testing and Balancing (30 Hours)
(Module ID 04302) Describes the use of project specifications and submittals. Covers how specifications and submittals are applied when working on a specific job. Covers the coordination of crafts.

Welding and Brazing (25 Hours)
(Module ID 04403) Introduces the techniques and proper operation of equipment used for welding and brazing. Emphasizes safety and awareness of hazards involved. Trainees practice welds in a variety of positions and perform a basic braise.

Oxyfuel Cutting (17.5 Hours)
(Module ID 29102) Explains the safety requirements for oxyfuel cutting. Identifies oxyfuel cutting equipment and setup requirements. Explains how to light, adjust, and shut down oxyfuel equipment. Trainees will perform cutting techniques that include straight line, piercing, bevels, washing, and gouging.

Architectural Sheet Metal (25 Hours)
(Module ID 04307) Teaches how to lay out and fabricate sheet metal components of a roof drainage system, including flashing, gutters, and downspouts.

Shop Production and Organization (25 Hours)
(Module ID 04401) Introduces the production, organization, planning, and control functions that occur in a sheet metal shop. Emphasizes optimization of processes and accurate estimating for competitive bidding. Discusses project planning techniques, principles of efficient shop layout and materials flow, as well as the roles and relationships of shop personnel.

Blanket Insulation for Ducts (7.5 Hours)
(Module ID 19202) Covers fiberglass blanket installation to ducts and apparatus and discusses vapor-sealed blanket insulation facings.

Board Insulation For Ducts (20 Hours)
ISBN 978-0-13-498775-0
(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.

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