



CONTREN® LEARNING SERIES

# **Insulating**

**Level Three**

## **Module 19310 Jacket Fabrication – Piping and Fittings**

### **EXAMINATION PACKET**

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This packet contains the reproducible Module Examination, Answer Key, and Performance Profile Sheet(s).

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**NATIONAL CENTER FOR  
CONSTRUCTION EDUCATION AND RESEARCH**

Pearson Education, Inc.

Upper Saddle River, New Jersey Columbus, Ohio

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

Social Security Number: \_\_\_\_\_

- \_\_\_\_\_ 1. Which of the following jacketing materials is the most widely used weather barrier over pipe insulation for outdoor application?
- Plastic
  - Steel
  - Aluminum
  - Laminate
- \_\_\_\_\_ 2. What is the most widely used thickness of aluminum jacket?
- .006
  - .016
  - .020
  - .024
- \_\_\_\_\_ 3. Which is the most common thickness for PVC jacketing?
- 24 gauge
  - .030 mil
  - .016 mil
  - 20 gauge
- \_\_\_\_\_ 4. How many pieces of 36-inch wide jacketing would be required for 120 feet of pipe if the jacket is installed with a 2-inch lap?
- 40
  - 120
  - 43
  - 48
- \_\_\_\_\_ 5. What is used to prevent jacketing from slipping on vertical pipe?
- Glue
  - Screws
  - Z clips
  - Mastic
- \_\_\_\_\_ 6. Screws must not be applied to jacketing material on \_\_\_\_.
- vertical pipe
  - horizontal pipe
  - hot piping
  - cold piping
- \_\_\_\_\_ 7. Laps should be overlapped \_\_\_\_.
- 2 inches
  - 3 inches
  - 4 inches
  - according to the specifications
- \_\_\_\_\_ 8. Jackets and mastics are sometimes used together on \_\_\_\_.
- elbows
  - flanges and valves
  - tees
  - bevels

## Jacketing Fabrication – Piping and Fittings

- \_\_\_\_\_ 9. Moisture barriers on aluminum jacketing are used to \_\_\_\_\_.  
a. keep water out of the insulation  
b. keep water off the pipe  
c. prevent water from escaping the insulation  
d. protect the aluminum from corrosion
- \_\_\_\_\_ 10. Small diameter pipe jacketing is normally held temporarily in place by \_\_\_\_\_.  
a. wire  
b. bands  
c. screws  
d. tape
- \_\_\_\_\_ 11. The most common method of securement for jacketing is \_\_\_\_\_.  
a. bands  
b. screws  
c. wire  
d. tape
- \_\_\_\_\_ 12. The longitudinal lap should be \_\_\_\_\_.  
a. on top of the pipe  
b. on the bottom of the pipe  
c. visible  
d. located to shed water and in an inconspicuous position
- \_\_\_\_\_ 13. Preformed aluminum ells are manufactured from \_\_\_\_\_ thick aluminum.  
a. .020  
b. .024  
c. .016  
d. .032
- \_\_\_\_\_ 14. Stainless steel jacketing is \_\_\_\_\_.  
a. inexpensive  
b. easy to work  
c. lightweight  
d. used for fire protection
- \_\_\_\_\_ 15. If an elbow cover is marked with 3 x 1-1/2 LR, what kind of elbow is it?  
a. Prefabricated  
b. Standard  
c. Short radius  
d. Gore
- \_\_\_\_\_ 16. If the circumference of the pipe is 20 inches, the proper length to cut the jacketing is \_\_\_\_\_ inches.  
a. 22 to 23  
b. 21 to 22  
c. 23 to 24  
d. 23<sup>1</sup>/<sub>2</sub> to 24<sup>1</sup>/<sub>2</sub>
- \_\_\_\_\_ 17. A universal ell cover cannot be used on a \_\_\_\_\_.  
a. 14 x 2 elbow  
b. short or long radius elbow  
c. stove pipe fitting  
d. bend

## Jacketing Fabrication – Piping and Fittings

- \_\_\_\_\_ 18. A \_\_\_\_\_ is used to fabricate flanged valve covers.
- a. beader
  - b. crimper
  - c. Pittsburgh machine
  - d. All of the above.
- \_\_\_\_\_ 19. The same basic procedure used to fabricate a tee is used for a \_\_\_\_\_.
- a. gore
  - b. bevel
  - c. flanged valve
  - d. reducer
- \_\_\_\_\_ 20. A reducer that changes size equally in all directions is said to be \_\_\_\_\_.
- a. corrugated
  - b. eccentric
  - c. concentric
  - d. beveled
- \_\_\_\_\_ 21. Piping subject to abuse would likely receive which of the following thicknesses?
- a. .006
  - b. .016
  - c. .020
  - d. .024
- \_\_\_\_\_ 22. When installing gores, the \_\_\_\_\_ edge goes up.
- a. crimp
  - b. bead
  - c. lap
  - d. longitudinal lap
- \_\_\_\_\_ 23. Temporary wires holding aluminum jacket should be \_\_\_\_\_.
- a. left on the jacket
  - b. cut and allowed to fall
  - c. cut and reused
  - d. cut and disposed of properly
- \_\_\_\_\_ 24. The jacketing system is as strong as \_\_\_\_\_.
- a. the type of securement
  - b. the thickness of the jacket
  - c. the method of installation
  - d. its weakest point
- \_\_\_\_\_ 25. Which of these elbows has a radius of 1.5 times the pipe diameter?
- a. Short radius
  - b. Long radius
  - c. Sweep
  - d. Bend

## **NOTE ON PERFORMANCE PROFILE TESTING**

Performance Profiles are included in this Instructor's Guide in a format that can be easily photocopied for each trainee. The Profiles measure trainee competency in the tasks taught in this module.

Please note the number of tasks to be tested while teaching this module. Each trainee should be tested on the tasks listed in the Performance Profile. Before the performance testing, the instructor should brief the trainees on:

- test objectives and criteria,
- safety precautions, and
- procedures for each task to be tested.

The instructor administering the performance testing should also do the following:

- ensure that all of the needed equipment is available and operating properly;
- set up the testing stations;
- organize and administer the test in a way that allows for optimal performance;
- complete the Performance Profile Sheet for each trainee by assigning a score for each listed task;
- monitor adherence to all safety regulations and precautions;
- provide adequate supervision to prevent injuries; and
- take immediate and effective action to remedy any emergency.

## **ACCREDITATION TESTING**

If this Performance Profile Testing is done in the National Center for Construction Education and Research Standardized Craft Training Program, the following conditions must be met:

1. The Craft Instructor must hold valid NCCER instructor certification.
2. The training must be delivered through a Training Program Sponsor recognized by the NCCER.
3. For every module, the specific performance testing must be completed to the satisfaction of the instructor.
4. The results of the testing must be recorded on the Craft Training Report Form. This form must be provided to the local Training Program Sponsor to be forwarded to the NCCER National Craft Training Registry.

<p><b>Craft:</b> Insulating</p> <p><b>Task Module Number:</b> 19310</p> <p><b>Task Module Title:</b> Jacketing Fabrication – Piping and Fittings</p>	 
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TRAINEE NAME: \_\_\_\_\_

TRAINEE SOCIAL SECURITY NUMBER: \_\_\_\_\_

CLASS: \_\_\_\_\_

TRAINING PROGRAM SPONSOR: \_\_\_\_\_

INSTRUCTOR: \_\_\_\_\_

- Rating Levels:**
1. Passed: performed task.
  2. Failed: did not perform task.

**Recognition:** When testing for the NCCER Standardized Craft Training Program, be sure to record Performance Profile testing results on Craft Training Report Form 200 and submit the results to the Training Program Sponsor.

TASK	RATING
1. Using a piping mock-up with the insulation installed, apply a two-piece metal elbow, straight run aluminum jacket, a metal tee, and a terminus bevel.	
2. Lay out a 14 x 2 gored elbow. Cut the gores out and apply the proper beading and crimping. Apply the gores to the piping mock-up.	
3. Apply PVC jacketing to straight run piping using an adhesive and nylon bands. Finish the fittings with mastic fab and mastic.	

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## Answer Key to Module Examination

<u>Answer</u>	<u>Section</u>
1. c	1.0.0
2. b	1.0.0
3. b	1.0.0
4. c	Terms
5. c	2.5.0
6. d	2.7.0
7. d	1.0.0
8. b	4.0.0
9. d	1.0.0
10. a	2.4.0
11. a	2.0.0
12. d	1.0.0
13. b	2.7.0
14. d	1.0.0
15. b	2.7.0
16. a	2.1.0
17. d	2.7.0
18. d	4.0.0
19. c	4.0.0
20. c	Terms
21. d	1.0.0
22. a	2.7.2
23. d	2.4.0
24. d	5.0.0
25. b	2.7.3