



Insulating

Level Three

Module 19306

Large Boilers, Breechings,

EXAMINATION PACKET Precipitators, and Apparatus

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

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SECURE AREA!**

**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: _____

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>_____ 1. What is a boiler?</p> <ul style="list-style-type: none"> a. Heater b. Pressure vessel where water is heated to make steam c. Furnace d. Generator | <p>_____ 6. The sheet metal covering over the boiler insulation is called _____.</p> <ul style="list-style-type: none"> a. lagging b. duct c. covering d. metal work |
| <p>_____ 2. Factory-built boilers are usually called _____ boilers.</p> <ul style="list-style-type: none"> a. smaller b. auxiliary c. packaged d. heating | <p>_____ 7. Refractory materials are ____.</p> <ul style="list-style-type: none"> a. fire stops b. high-pressure materials c. flame and heat-resistant materials d. leak stops |
| <p>_____ 3. What part of a factory-insulated boiler might require insulation?</p> <ul style="list-style-type: none"> a. Fire box b. Exhaust header c. Drum ends d. Sidewalls | <p>_____ 8. The area of a large boiler where combustion takes place is the _____.</p> <ul style="list-style-type: none"> a. high-pressure area b. furnace c. exhaust d. economizer |
| <p>_____ 4. What might be the operating pressure of a boiler in a hospital?</p> <ul style="list-style-type: none"> a. 150 psig. b. 650 psig. c. 750 psig. d. 1,000 psig. | <p>_____ 9. Where might inspection ports and primary and secondary air ports be located in a large boiler?</p> <ul style="list-style-type: none"> a. At the bottom b. On furnace sidewalls c. Economizer d. Air duct |
| <p>_____ 5. What must be left uncovered when insulating boiler drums?</p> <ul style="list-style-type: none"> a. Round ends b. Hot section c. Welds d. Inspection markings | <p>_____ 10. A buckstay is a _____.</p> <ul style="list-style-type: none"> a. reinforcing beam b. support beam c. retaining beam d. drum support |

Large Boilers, Breechings, Precipitators, and Apparatus

- _____ 11. What is one of the highest temperature surfaces of a boiler?
- Steam drums
 - Flue gas discharge
 - Downcomer
 - Furnace floor
- _____ 12. Precipitators remove combustion particles using _____.
- bag filters
 - charged plates
 - plate filters
 - liquid
- _____ 13. What is an economizer?
- Fuel valve
 - Air mixer
 - Preheater for boiler feedwater
 - Reheater for steam
- _____ 14. The function of the air heater is to _____.
- keep fuel warm
 - preheat combustion air
 - heat the powerhouse
 - heat smoke for smoke stack
- _____ 15. The most common insulation used for boiler drum heads is _____.
- mineral wool
 - calcium silicate
 - fiberglass
 - foam

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.

Craft: Insulating

Task Module Number: 19306

Task Module Title: Large Boilers, Breechings, Precipitators, and Apparatus



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 the unlabeled diagram of a large boiler, identify the major parts.	
2. Using the unlabeled diagram of a precipitator, identify the major components.	
3. Identify at least five of the ten general guidelines for the storage and handling of materials at a boiler insulation project.	

Answer Key to Module Examination

<u>Answer</u>	<u>Section</u>
1. b	2.0.0
2. c	2.1.0
3. c	2.1.1
4. a	2.0.0
5. d	2.1.0
6. a	2.2.0
7. c	2.2.0
8. b	Trade Terms
9. b	2.2.1
10. c	2.2.1
11. a	2.2.1
12. b	2.3.0
13. c	2.2.1
14. b	2.2.1
15. b	6.1.0

