

# **Steamfitter, Pipefitter, Industrial Pipefitter**

## **Industry Training Criteria**

O-Net code 47-2152.01S

**Sep 2010**

**Steamfitter/Pipefitter/Industrial Pipefitter Industry  
Standards Criteria  
O-Net code 47-2152.01S**

1. Length of Training

Program sponsors shall establish a minimum of a five (5) year program of not less than 7,200 hours of on-the-job training.

2. Related Supplemental Instruction

The required prescribed courses of related and supplemental instruction shall be no less than 216 hours per year. This instruction must include at a minimum the related and supplemental training processes listed in Exhibit "A".

3. On-the-Job Training

Skills to be learned. See Exhibit "B".

4. Competency Testing

All apprentices must pass a competency test prior to the time of their classification advancement to the next higher period. The tests shall be based on all Related and Supplemental Instruction and manipulative skills tests based on laboratory assignments.

5. Completion Percentages

Program sponsors must have a 45% graduation rate of all apprentices that satisfactorily complete the program's probationary period.

6. Revisions

The schedule for revisions to the Plumbing Industry training criteria shall be in accordance with Labor Code Section 212.01.

# EXHIBIT "A"

## Related and Supplemental Instruction Topics For Steamfitter, Pipe Fitter, and Industrial Pipe Fitter Industry Criteria

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### RELATED AND SUPPLEMENTAL INSTRUCTION

1. Orientation and safety to include OSHA 10
2. Piping mathematics and formulas
3. Copper soldering and brazing
4. Acetylene welding and burning
5. Pipe and equipment rigging
6. Drawing, isometrics, spool sheets and construction drawing interpretation.
7. Steam, hydronics, geo-thermal, and solar systems
8. Piping layout and fabrication
9. Related science
10. Pneumatics, instrumentation, process and controls
11. ARC welding and two or more of the following weld processes:
  - A. Orbital
  - B. S.M.A.W.
  - C. F.C.A.W.
  - D. G.M.A.W.
  - E. G.T.A.W.
12. Computer literacy and CAD (computer aided drawing) instruction
13. Clean room protocol, plastic fusion processes
14. Awareness of green and emerging technology

# EXHIBIT "B"

## Work Process for Steamfitter, Pipe Fitter, and Industrial Pipe Fitter Industry Criteria

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### WORK PROCESS

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1. Installation: This section shall include approximately 6,500 hours covering experience in the following processes.
  - a. Piping and equipment conveying solids, slurries, powders, liquids, steam, or gas (this may include but is not limited to waste, vent, water and drain piping)
  - b. Different kinds of pipe material (this may include but is not limited to copper, plastic, steel, ferrous and non-ferrous piping)
  - c. Start, test, and balance
2. Maintenance: This section shall include approximately 1,000 hours covering experience in the following processes.
  - a. Repair, operation and use of related equipment, piping and tools.
  - b. Demolition and rehabilitation.

Total Number of Required Hours for Graduation is 7,500



Gas tungsten arc welding  
Soldering and brazing

- Hydronics  
Hydronic heating and cooling  
Geo Thermal  
Solar
- Pumps
- Green Technology  
Green systems awareness

Total Number of hours for graduation is 7,500

# Steamfitter/Pipefitter/Industrial Pipefitter Industry Standards

## Committee Members

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Standards

Signature Page



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Industry Standards Committee