Performance Verification Packet

Plumber

This performance verification is designed as one method to evaluate job skills and safe work habits of a participant. The performance of the participant must be evaluated by an NCCER certified evaluator, at an NCCER authorized assessment site and be approved by an NCCER accredited assessment center.

Last Updated: June 29, 2007

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Performance Verification Form
How to fill out and file your information

Participant

1) Print your last name, first name, and social security number.
2) Print your company name, current employer, and the state where your employer's main office is located.
3) In the space provided for "Participant Signature," sign your name and enter the date you signed the form.

Performance Evaluator

1) In the space provided for "Site Code," enter the postal zip code of the location where the performance verification is being conducted.
2) In the column provided for "Date," enter the date the participant completed each of the tasks. This date is important because there may be times a participant does not complete a performance verification in one day.
3) In the space provided for "Performance Evaluator," sign your name.
4) In the space provided for "Date," next to your signature, list the date the participant successfully completed all of the tasks.

Administrator

1) In the space provided for "Administrator," sign your name. Your signature indicates that the performance evaluator is certified to conduct this performance verification and that it was conducted within the guidelines of the NCCER.
2) In the space provided for "Date," next to your signature, list the date that this performance verification form is being sent to the NCCER for entry into the National Registry.
3) In the space provided for "Accredited Assessment Center," print the name of the accredited assessment center that is conducting this performance verification.

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Objectives

The candidate will demonstrate the ability to cut and join copper, cast iron, treaded steel, and ABS or PVC or CPVC pipe using the most appropriate methods for each material.

Scope

This Performance Verification provides a means to observe and evaluate competencies in the following areas:

- Copper soldering and braising
- Copper flaring
- Copper compression
- Cast Iron hub compression
- Cast Iron no-hub compression
- Threaded steel cutting and joining
- ABS or PVC or CPVC cutting and joining

Materials Required

For Copper Cutting and Joining:

- tube cutter
- tape measure
- reamer
- torch
- striker
- sand cloth
- fitting brush
- flux
- flux brush
- rag cloth
- lead-free solder
- 2 ft. of 3/4 inch tubing
- ¾ inch 90- degree ell (1)
- ¾ pressure cap (1)
- flaring block
- 2 adjustable wrenches
- ½ inch flare nut (2)
- ½ inch flare fitting (1)
- ½ inch nominal soft copper (2 ft.)
- ½ inch compression nut (2)
- ½ inch compression fitting (1)
- ½ inch nominal soft copper (2 ft.)
- PPE (safety glasses, gloves, fire extinguisher)

For Cast Iron Cutting and Joining:

- Soil pipe cutters
- Ball peen hammer
- Soil pipe puller
- Tape measure
- Soap stone marker
- 2-inch cast iron pipe fitting (1)
- 5 feet of 2-inch double hub cast iron pipe
- 2-inch dual-tite gasket (1)
- Soil pipe lubricant
- Brush
- Rag cloth
- Soil pipe cutters
- Tape measure
- 60 pound / 5/16-inch torque wrench
- Soap stone marker
- 2-inch no hub cast iron pipe fitting (1)
- 5 feet of 2-inch no hub cast iron pipe
- Standard duty 2-inch no hub coupling (1)
- PPE (safety glasses, gloves)

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For Threaded Steel Cutting and Joining:

- Tape measure
- Pipe vice
- Pipe cutter
- Pipe reamer
- Pipe threader
- 14-inch pipe wrenches (2)
- Soap stone marker
- Cutting oil
- Chip bucket
- 2 feet of 1/2 –inch black or galvanized pipe
- ½ inch black or galvanized fitting (1)
- Pipe thread sealant
- Rag cloth
- PPE (safety glasses, gloves)

For ABS or PVC or CPVC Cutting and Joining:

- Piece of ABS or PVC or CPVC
- PVC saw
- Deburring tool
- Tape measure
- Carpenter's pencil or marker
- Cleaner/primer with brush
- Solvent cement with brush
- 5 ft. of pipe (any grade)
- 90˚ elbow (1)
- Rag cloth
- PPE (safety glasses, gloves)

Time Required

Copper soldering and braising: 10 minutes

Copper flaring: 15 minutes

Copper compression: 10 minutes

Cast Iron hub compression: 30 minutes

Cast Iron no-hub compression: 20 minutes

Threaded steel cutting and joining: 20 minutes

ABS or PVC or CPVC cutting and joining: 15 minutes

Total: 120 minutes or 2 hours

Tasks

Evaluator will provide necessary P& IDs, specification sheets, instrument index, and job-specific details for each task.

- Cutting and joining copper pipe
  - soldering and brazing
    a. Cutting
    b. Reaming
    c. Cleaning
    d. Apply flux
    e. Assemble (verify for a complete make-up)
    f. Solder (to be done completely around the joint)

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g. PPE/Safety
- Proper selection:
  - ♦ Safety glasses
  - ♦ Gloves
  - ♦ Fire extinguisher
- Proper use (candidate is wearing the PPE correctly)

h. Tools
- Proper selection
- Safe use
- Proper use

➢ Flare
a. Cutting
b. Reaming
c. Place flare nut before making the flare
d. Assemble
e. PPE/Safety
- Proper selection
  - ♦ Safety glasses
  - ♦ Gloves
- Proper use

f. Tools
- Proper selection
- Proper use

➢ Compression
a. Cutting
b. Reaming
c. Shaping
d. Place compression nut and ferrule (compression ring) on pipe
e. Assemble (proper make-up)
f. PPE/Safety
- Proper selection
  - ♦ Safety glasses
  - ♦ Gloves
- Proper use

g. Tools
- Proper selection
- Proper use

- **Cast Iron**

➢ Hub compression connections
a. Cutting
b. Peening
c. Place gasket
d. Lubricate
e. Assemble (spigot is bottomed in the bell or the hub)
f. PPE/Safety
- Proper selection
  - ♦ Safety glasses
  - ♦ Gloves
- Proper use

g. Tools
- Proper selection
- Proper use

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- No-hub
  a. Cutting
  b. Place coupling (proper placement)
  c. Assemble (pipe is against the stop)
  d. Torque the connection
  e. PPE/Safety
     - Proper selection
       - Safety glasses
       - Gloves
     - Proper use
  f. Tools
     - Proper selection
     - Proper use

- Threaded Steel
  - Secure pipe in the vice
  - Cutting
  - Reaming
  - Threading
    a. Use lubrication
    b. Proper depth
  - Assemble (check for proper thread engagement)
  - PPE/Safety
    a. Proper selection
       - Safety glasses
       - Gloves
    b. Proper use
  - Tools
    a. Proper selection
    b. Proper use

- **ABS or PVC or CPVC**
  *Proctor to select **one** of the materials above
  - Cutting
  - Deburr
  - Apply cleaner/primer
  - Apply solvent/cement
  - Assemble (quarter turn done properly)
  - PPE/Safety
    a. Proper selection
       - Safety glasses
       - Gloves
    b. Proper use
  - Tools
    a. Proper selection
    b. Proper use

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Date Completed	Task To Perform

__-__-__ 1. Copper soldering and braising

- Cutting
- Reaming
- Cleaning
- Application of flux
- Assemble (verify for a complete make-up)
- Solder (to be done completely around the joint)
- Proper selection and use of PPE (Safety glasses, gloves, fire extinguisher)
- Proper selection and use of tools

__-__-__ 2. Copper flaring

- Cutting
- Reaming
- Place flare nut before making the flare
- Proper assembly
- Proper use and selection of PPE (Safety glasses and gloves)
- Proper use and selection of tools

__-__-__ 3. Copper compression

- Cutting
- Reaming
- Shaping
- Placing of compression nut and ferrule (compression ring) on pipe
- Assembly (proper make-up)
- Proper use and selection of PPE (Safety glasses and gloves)
- Proper use and selection of Tools

__-__-__ 4. Cast Iron hub compression

- Cutting
- Peening
- Place gasket
- Lubricate
- Assembly (spigot is bottomed in the bell or the hub)
- Proper use and selection of PPE (Safety glasses and gloves)
- Proper use and selection of Tools

__-__-__ 5. Cast Iron no-hub compression

- Cutting
- Place coupling (proper placement)
- Assembly (pipe is against the stop)
- Torque the connection
- Proper use and selection of PPE (Safety glasses and gloves)
- Proper use and selection of Tools

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Date Completed Task To Perform

__-__-__ 6. Threaded steel cutting and joining

- Secure pipe in the vice
- Cutting
- Reaming
- Threading (Use of lubrication and proper depth)
- Assembly (check for proper thread engagement)
- Proper use and selection of PPE (Safety glasses and gloves)
- Proper use and selection of tools

__-__-__ 7. ABS or PVC or CPVC cutting and joining

*Proctor to select **one** of the materials above

- Cutting
- Deburring
- Application of cleaner/primer
- Application of solvent/cement
- Assembly (quarter turn done properly)
- Proper use and selection of PPE (safety glasses and gloves)
- Proper use and selection of tools

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PERFORMANCE VERIFICATION FORM

Plumber PVPLUM68- CRAFT

Participant Information:

Last Name	**First Name**	**Social Security Number**

Employer/Company Name	**State**	**Site Code**

Performance Evaluator:

Last Name	**First Name**	**Social Security Number**

TASK #	SPECIFIC DUTIES/TASKS	DATE	START TIME	END TIME
01	Copper soldering and braising			
02	Copper flaring			
03	Copper compression			
04	Cast Iron hub compression			
05	Cast Iron no-hub compression			
06	Threaded steel cutting and joining			
07	ABS or PVC or CPVC cutting and joining			

Consent/Release: I, the undersigned, do hereby authorize the National Center for Construction Education and Research (NCCER) to release the information and results attained through the administration of the National Craft Assessment and Certification Program (NCACP) to the organization referenced below, and acknowledge that the employer noted above is my present employer.

ACCREDITED ASSESSMENT CENTER:_____

PARTICIPANT: SIGNATURE _____ DATE: _____

PERFORMANCE EVALUATOR: SIGNATURE _____ DATE: _____

ADMINISTRATOR: SIGNATURE _____ DATE: _____

Last Updated: September 23, 2011

Return Completed Form To:
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