



Performance Verification Packet

Industrial Pipefitter

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.

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.

Last Updated: March 2008

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1-888-622-3720

NCCER PERFORMANCE VERIFICATION CANDIDATE SUMMARY

INDUSTRIAL PIPEFITTER

Scope

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

- Using threading machines (08103-06)
- Identifying drawing and detail sheet components (08202-06)
- Identifying valves (08203-06)
- Fabricating threaded pipe, socket weld pipe and fishmouths (08205-06, 08206-06, 08207-06, 08402-06)
- Rigging (08301-07, 08302-07)
- Installation of above-ground pipe (08306-06)
- Field routing (08307-07)
- Identifying and laying out pipe hangers and spring can supports (08308-07)
- Testing piping systems (08309-07)
- Advanced blueprint reading (08401-07)

Materials Required

- Threading machine or hand threader with dies
- Pipefitter Bluebook
- Rigging hardware
 - Chain hoist
 - Come-along
 - Chokers (wire rope & synthetic)
 - Shackles (various sizes)
 - Eyebolts
 - Turnbuckles
 - Rigging plates or links
 - Hydraulic jack
 - Air tugger
- Hangers & Supports
 - Riser clamp
 - Clevis hanger
 - Beam clamp
 - Shoe
 - Anchor
 - Guide

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NCCER PERFORMANCE VERIFICATION CANDIDATE SUMMARY

INDUSTRIAL PIPEFITTER

- Spring can support (with chocks)
- Spring can detail sheet
- Turnbuckles
- Beam attachments
- Angle iron
- Valves
 - Check valve
 - Gate valve
 - Butterfly valve
 - Ball valve
 - Globe valve
 - Control valve
 - Safety or Relief valve
- Drawings
 - Isometric
 - Blueprint/Orthographic (with elevation and sectional views)
 - P&IDs
 - Plot Plan
 - Equipment arrangement
 - Pipe support (with detail sheets)
 - Isometric pad
 - Piping Specifications
 - Isometric drawing with detail sheet & Bill of Material
 - Threaded pipe isometric
 - Socketweld pipe isometric
 - Butt-weld pipe isometric
- 10' length of carbon steel pipe (3/4" to 2")
- Carbon steel pipe fittings
 - Flanges
 - Weld-neck
 - Slip-on
 - Socket weld
 - Threaded
 - Blind flange
 - Cast iron

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NCCER PERFORMANCE VERIFICATION CANDIDATE SUMMARY

INDUSTRIAL PIPEFITTER

- 90-degree elbows (threaded, socketweld, butt-weld)
- 45-degree elbows (threaded, socketweld, butt-weld)
- Equal tee, butt-weld
- Welding equipment
- Oxy-acetylene rig
- Beveling machine
- Grinder
- Pipe test package
- Slip blinds
- Torque procedure
- Torque wrench
- Gaskets
 - Flat ring type
 - Full-face
 - Spiral wound
 - Gasket materials
- Gasket cutter
- Hole punch
- Bolts
 - B-7 studs
 - Machine bolts

Time Required

To be determined based on job site

Tasks

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

- Using threading machines (08103-06)
 - Replace dies properly in a threading machine
 - Proper cutting, reaming and treading of pipe
- Identifying drawing and detail sheets (08202-06)
 - Types of drawings
 - Plot plans

NCCER PERFORMANCE VERIFICATION CANDIDATE SUMMARY

INDUSTRIAL PIPEFITTER

- Elevation and section drawings
- Equipment arrangement drawing
- P&IDs
- Isometric drawings
- Pipe support drawings and detail sheets
- Orthographic drawings
- Identifying valves (08203-06)
 - Check valve
 - Gate valve
 - Butterfly valve
 - Ball valve
 - Globe valve
 - Control valve
 - Safety/relief valve
 - Identify types of valves that start and stop flow
 - Identify types of valves that regulate flow
 - Identify valves that relieve pressure
 - Identify valves that regulate the direction of the flow
- Fabricating threaded pipe, socket weld pipe and fishmouths (08205-06, 08206-06, 08207-06, 08402-06)
 - Threaded pipe
 - Read and interpret screwed fitting joint drawings
 - Determine pipe lengths between fittings, using the center-to-center method
 - Given the length of the set, calculate the travel of a 45-degree piping offset
 - Calculate the travel of a rolling offset
 - Thread pipe, using manual threaders
 - Thread the pipe, using a threading machine
 - Assemble the pipe, fitting and install a screwed valve
 - Socket weld fittings
 - Identify various socket weld fittings
 - Calculate pipe lengths from line drawings, using center-to-face method
 - Align a 90-degree elbow to the end of a pipe
 - Square a pipe into a 90-degree elbow
 - Align a flange to the end of a pipe
 - Butt weld

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NCCER PERFORMANCE VERIFICATION CANDIDATE SUMMARY

INDUSTRIAL PIPEFITTER

- Identify various butt weld fittings
- Cut pipe using the free-hand method, a beveling machine, and an oxyacetylene torch
- Cut stainless pipe using a method selected by your instructor
- Clean a beveled pipe end, using a portable grinder
- Calculate pipe lengths from line drawings, using the face-to-face method
- Align and square a pipe to a 90-degree elbow
- Align a pipe to a flange or tee
- Select rigging, inspect, and use special rigging equipment, including chain hoist and come-alongs (08301-07, 08302-07)
 - Demonstrate how to calculate the weight of a pipe spool and how to use a choker selection chart.
 - Perform a safety inspection on a come-along and or a chain fall.
 - Perform an inspection of a choker (synthetic or wire)
- Installation of above-ground pipe (08306-06)
 - Identify the following types of flanges:
 - Weld neck
 - Slip-on
 - Blind
 - Socket weld
 - Threaded
 - Cast iron
 - Demonstrate proper flange make-up techniques and explain the torque procedure
 - Lay out and fabricate a gasket
- Field routing (08307-07)
 - Determine the load weight for erection equipment
 - Install test blinds
 - Install temporary hydrotest spools
 - Develop a “draft” of an isometric for the purpose of field routing of a vent or drain system.
- Identifying and laying out pipe hangers and spring can supports (08308-07)
 - Identify types of pipe hangers
 - Identify types of connecting units and attachments
 - Identify types of pipe supports
 - Lay out and mark the cut lines required to fabricate a one-piece 45-degree angle iron bracket
 - Read and interpret spring can support detail sheets
 - Demonstrate the installation techniques for spring cans and how to remove and re-install the travel stops

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NCCER PERFORMANCE VERIFICATION CANDIDATE SUMMARY INDUSTRIAL PIPEFITTER

- Adjust a spring can support to the cold position
- Testing piping systems (08309-07)
 - Identify the details about a piping system that you can obtain from a piping drawing
 - Install a slip blind in a system
 - Perform a hydrostatic test on a piping system or spool and check for leaks
- Advanced blueprint reading (08401-07)
 - Calculate the total line length from an ISO
 - Sketch an ISO from a plan view

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NCCER PERFORMANCE EVALUATOR CHECKLIST
INDUSTRIAL PIPEFITTER

Date Completed Task To Perform

- __-__-__ 1. Using threading machines (08103-06)
- Dies were properly replaced in the treading machine
 - Proper cutting, reaming and threading of pipe
-
- __-__-__ 2. Identifying drawing and detail sheets (08202-06)
- Properly identified:
 - Plot plans
 - Elevation and section drawings
 - Equipment arrangement drawing
 - P&IDs
 - Pipe support drawings and detail sheets
 - Orthographic drawings
-
- __-__-__ 3. Identifying valves (08203-06)
- Properly identified:
 - Check valve
 - Gate valve
 - Butterfly valve
 - Ball valve
 - Globe valve
 - Control valve
 - Safety/relief valve
 - The proper valve that will allow stop and flow
 - The proper valve that will regulate flow
 - The proper valve that will relieve pressure
 - The proper valve that will regulate the direction of the flow
-
- __-__-__ 4. Fabricating threaded pipe, socket weld pipe and fishmouths (08205-06, 08206-06, 08207-06, 08402-06)
- **Threaded pipe**
 - Read and interpreted screwed fitting joint drawings
 - Determined the proper pipe lengths between fittings, using the center-to-center method
 - Given the length of the set, calculated the travel of a 45-degree piping offset
 - Calculated the travel of a rolling offset
 - Threaded pipe using manual threaders
 - Threaded pipe using a threading machine
 - Made up a pipe, fitting and installed a screwed valve
 - **Socket weld pipe**
 - Identified various socket weld fittings
 - Calculated pipe lengths from line drawings, using the center-to-face method
 - Aligned a 90-degree elbow to the end of the pipe
 - Squared a pipe into a 90-degree elbow
 - Aligned a flange to the end of pipe
 - **Butt weld**
 - Identified various butt weld fittings
 - With an oxyacetylene torch cut pipe using the free-hand method and with a beveling machine.
 - Cut stainless pipe using the method selected by the evaluator
 - Cleaned a beveled pipe end, using a portable grinder
 - Calculated pipe lengths, using the face-to-face method

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**NCCER PERFORMANCE EVALUATOR CHECKLIST
INDUSTRIAL PIPEFITTER**

Date Completed Task To Perform

- Aligned and squared a pipe to a flange or tee

-
- __-__-__ 5. Select rigging, inspect and use special rigging equipment, including chain hoist and come-alongs (08301-07, 08302-07)
- Demonstrated how to calculate the weight of a pipe spool and how to use a choker selection chart
 - Performed a safety inspection on a come-along and or chain fall
 - Performed an inspection of a choker (synthetic or wire)
-
- __-__-__ 6. Installation of above-ground pipe (08306-06)
- Identified the following types of flanges:
 - Weld neck
 - Slip on
 - Blind
 - Socket weld
 - Threaded
 - Cast iron
 - Demonstrated proper flange make-up techniques and explain the torque procedure
 - Laid out and fabricated a gasket
-
- __-__-__ 7. Field routing (08307-07)
- Determined the load weight for erection equipment
 - Installed test blinds
 - Installed temporary hydrotest spools
 - Developed a “draft” of an isometric for the field routing of a vent or drain system
-
- __-__-__ 8. Identifying and laying out pipe hangers and spring can supports (08308-07)
- Identified the different types of pipe hangers
 - Identified types of connecting units and attachments
 - Identified types of pipe supports
 - Laid out and mark the cut lines required to fabricate a one-piece 45-degree angle iron bracket
 - Read and interpret spring can support detail sheets
 - Demonstrated the proper installation techniques for spring cans and how to remove and re-install the travel stops
 - Adjusted a spring can support to the cold position
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- __-__-__ 9. Testing piping systems (08309-07)
- Identified the details about a piping system that you can obtain from a piping drawing
 - Installed a slip blind in a system
 - Performed a hydrostatic test on a piping system or spool and check for leaks
-
- __-__-__ 10. Advanced blueprint reading (08401-07)
- Accurately calculated the total line length from an ISO provided by the evaluator
 - Sketched an ISO from a plan view

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PERFORMANCE VERIFICATION FORM

Industrial Pipefitter: PVPFT08_02 - Craft

Candidate information		
_____	_____	_____
Last Name	First Name	Social Security Number
_____	_____	_____
Employer/Company Name	State	Site Code
Evaluator		
_____	_____	_____
Last Name	First Name	Social Security Number

TASK #	SPECIFIC DUTIES/TASKS	DATE	START TIME	END TIME
01	Using threading machines (08103-06)			
02	Identifying drawing and detail sheets (08202-06)			
03	Identifying valves (08203-06)			
04	Fabricating threaded pipe, socket weld pipe and fishmouths (08205-06, 08206-06, 08207-06, 08402-06)			
05	Select rigging, inspect and use special rigging equipment, including chain hoist and come-alongs (08301-07, 08302-07)			
06	Installation of above-ground pipe (08306-06)			
07	Field routing (08307-07)			
08	Identifying and laying out pipe hangers and spring can supports (08308-07)			
09	Testing piping systems (08309-07)			
10	Advanced blueprint reading (08401-07)			

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: _____

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 Return Completed Form To:
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