NOTE ON PERFORMANCE TESTING

Performance Profile Sheet(s) are included in a format that can be easily photocopied for each trainee. This examination is designed to measure competency in the tasks taught in each module.

Please note the number of tasks to be tested while teaching each module. Each trainee should be tested on all the tasks listed on the Performance Profile Sheet(s). Before performance testing, the instructor should brief the trainees on:

- Test objectives and criteria
- Safety precautions
- 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(s) for each trainee by assigning a pass/fail score for each listed task. Also, include the testing date, and start and end times for each task in the rating boxes.
- Monitor adherence to all safety regulations and precautions.
- Provide adequate supervision to prevent injuries.
- Take immediate and effective action to remedy any emergency.

Performance Testing

If Performance Testing is done as part of NCCER's 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 an Accredited Training Sponsor recognized by NCCER.
3. The specific performance testing must be completed successfully.
4. The results of the testing must be recorded on Training Report Form 200. This form must be provided to the local Accredited Training Sponsor to be forwarded to NCCER's Registry Department.

Certified Plus Credential

Provided the sponsor is working through an NCCER-Accredited Assessment Center, candidates who successfully pass performance testing may be eligible for a Certified Plus Credential. A number of NCCER's Performance Profiles cross over to NCCER's Assessment Performance Verifications and may be completed simultaneously. Go to www.nccer.org and select the Assessments tab to locate the Performance Verifications associated with this craft.

Note that two other important conditions are required for the Certified Plus Credential:

1. Candidates must first pass the associated written assessment.
2. An NCCER-Accredited Assessment Administrator must sign off on the Performance Verification before it is submitted to NCCER.
Craft: Plumbing Level Four
Module: Module One, 02401-14
Module Title: Business Principles for Plumbers

<table>
<thead>
<tr>
<th>Objective</th>
<th>TASK</th>
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<th>END TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Prepare a material takeoff as part of an estimate.</td>
<td></td>
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</tbody>
</table>
Objective | TASK | RATING
--- | --- | ---
7 | 1. Develop an estimate for a given work activity. (Section Four) | 
8 | 2. Develop and present a look ahead-schedule. (Section Four) | 
Craft: Plumbing Level Four
Module: Module Three, 02403-14
Module Title: Water Pressure Booster and Recirculation System

TRAINEE NAME: ________________________________

TRAINEE PROGRAM SPONSOR: ________________________________

INSTRUCTOR: ________________________________

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
Also, list the date for testing for each task was completed.

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

Certified Plus Credential: Trainees who successfully complete these performance tasks may be eligible for a Certified Plus Credential. Refer to the Note on Performance Testing of this Performance Profile for eligibility requirements, or contact NCCER for more information.

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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Install the basic components of a water pressure booster system.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2</td>
<td>Install the basic components of a recirculation system.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
**Objective** | **TASK** | **RATING** | **DATE** | **START TIME** | **END TIME**
--- | --- | --- | --- | --- | ---
1 | Install an indirect waste system. | | | | |
2 | Size and install an interceptor using information provided by the instructor. | | | | |
Craft: Plumbing Level Four  
Module: Module Five, 02405-14  
Module Title: Hydronic and Solar Heating Systems

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<th>END TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Lay out a hydronic or solar heating system.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Craft: Plumbing Level Four  
Module: Module Six, 02406-14  
Module Title: Codes

TRAINEE NAME:  

TRAINEE PROGRAM SPONSOR:  

INSTRUCTOR:  

Rating Levels:  
1. Passed: performed task  
2. Failed: did not perform task  
Also, list the date for testing for each task was completed.

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

Certified Plus Credential: Trainees who successfully complete these performance tasks may be eligible for a Certified Plus Credential. Refer to the Note on Performance Testing of this Performance Profile for eligibility requirements, or contact NCCER for more information.

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<tbody>
<tr>
<td>1</td>
<td>Use the local applicable plumbing code to find and cite references for the Questions in Appendix A.</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
LOCAL CODE CITATIONS FOR PERFORMANCE TASK

Use a copy of your local applicable code to answer the following questions about requirements in your area for various types of plumbing installations. Be sure to cite the reference following your answer.

1. What are the duties and powers entrusted to your local code officials?

2. What work is specifically exempt from the requirement for a permit?

3. What are the requirements for connecting the drainage piping to offsets and bases of stacks?

4. How are vacuum system station receptacles to be installed?

5. What standard is referenced for the installation of nonflammable medical gas systems?

6. What are the minimum required air gaps for lavatories and fixtures with similarly sized openings?

7. How is the maximum water-consumption flow rate determined for a public lavatory?

8. What is the maximum allowable amount of lead content in water supply pipe and fittings?

9. What are the requirements for joints between copper and copper-alloy tubing?

10. What are the size requirements for a shower compartment?
Craft: Plumbing Level Four  
Module: Module Seven, 02408-14  
Module Title: Private Water Supply Well Systems

TRAINEE NAME: ____________________________  
TRAINEE PROGRAM SPONSOR: ____________________________

INSTRUCTOR: ____________________________  

Rating Levels:  
(1) Passed: performed task  
(2) Failed: did not perform task  
Also, list the date for testing for each task was completed.

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

Certified Plus Credential:  
Trainees who successfully complete these performance tasks may be eligible for a Certified Plus Credential. Refer to the Note on Performance Testing of this Performance Profile for eligibility requirements, or contact NCCER for more information.

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<tr>
<td>3</td>
<td>Assemble and disassemble given components of private water supply well systems.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2</td>
<td>Identify the components of piping for a spa.</td>
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</tbody>
</table>
Module Eight, 02409-14 has no Performance Profile Sheet; no performance testing is required for this module.
Craft: Plumbing Level Four  
Module: Module Nine, 02410-14  
Module Title: Swimming Pools and Hot Tubs

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<tbody>
<tr>
<td>1</td>
<td>Calculate the volume of a pool.</td>
<td></td>
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When testing for the NCCER Training Program, be sure to record Performance testing results on Training Report Form 200, and submit the results to the Training Program Sponsor.

Trainees who successfully complete these performance tasks may be eligible for a Certified Plus Credential. Refer to the Note on Performance Testing of this Performance Profile for eligibility requirements, or contact NCCER for more information.
EXERCISES FOR PERFORMANCE TASK 1

Use the drawing of a hypothetical swimming-pool installation in Figure A-1 and the information in this module to answer the following questions. Round your answers up or down to the nearest whole number. Remember to show all your work.

1. Calculate the total pool volume in cubic feet:
   ________________________________

2. Calculate the total gallon capacity of the pool:
   ________________________________

3. Given that turnover is said to occur once every 10 hours, the pool’s bathing load would be:
   ________________________________

4. Given that turnover is said to occur once every six hours, the pool’s bathing load would be:
   ________________________________

5. Enter the turnover in gpm for Questions #3 and #4:
   ___________ and ___________

Figure A-1  Swimming pool installation.
Objective | TASK | RATING | DATE | START TIME | END TIME
--- | --- | --- | --- | --- | ---
1 | Size the water supply and DWV systems for a mobile home park using information provided by your instructor. |  | | | |
Performance Profile Sheet (Page 1 of 1)

Craft: Plumbing Level Four
Module: Module Eleven, 02412-14
Module Title: Introduction to Medical Gas and Vacuum Systems

TRAINEE NAME: ________________________________

TRAINEE PROGRAM SPONSOR: ________________________________

INSTRUCTOR: ________________________________

Rating Levels: (1) Passed: performed task           (2) Failed: did not perform task

Also, list the date for testing for each task was completed.

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

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<tbody>
<tr>
<td>5</td>
<td>Braze copper tube with purging.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Braze copper tube without purging.</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>