

Continuing Education from *Plumbing Systems & Design*

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Do you find it difficult to obtain continuing education units (CEUs)? Through this special section in every issue of PS&D, ASPE can help you accumulate the CEUs required for maintaining your Certified in Plumbing Design (CPD) status.

Now Online!

The technical article you must read to complete the exam is located at www.psdmagazine.org. The following exam and application form also may be downloaded from the website. Reading the article and completing the form will allow you to apply to ASPE for CEU credit. For most people, this process will require approximately one hour. If you earn a grade of 90 percent or higher on the test, you will be notified that you have logged 0.1 CEU, which can be applied toward the CPD renewal requirement or numerous regulatory-agency CE programs. (Please note that it is your responsibility to determine the acceptance policy of a particular agency.) CEU information will be kept on file at the ASPE office for three years.

Note: In determining your answers to the CE questions, use only the material presented in the corresponding continuing education article. Using information from other materials may result in a wrong answer.

About This Issue's Article

The March/April 2007 continuing education article is "Water System Design," Chapter 13 of *Engineered Plumbing Design II* by A. Cal Laws, PE, CPD.

The objective in designing the water supply systems for any project is to ensure an adequate water supply at adequate pressure to all fixtures and equipment at all times and to achieve the most economical sizing of the piping. There are at least six important reasons why proper design of water distribution systems is absolutely essential: health, pressure, flow, water, pipe failure, and noise. This chapter describes how to design an effective water system keeping these factors in mind, focusing on pressure, flow, and demand.

You may locate this article at www.psdmagazine.org. Read the article, complete the following exam, and submit your answer sheet to the ASPE office to potentially receive 0.1 CEU.

CE Questions—"Water System Design" (PSD 138)

- The flow of water through two parallel circuits of different pipe sizes results in a pressure loss _____.**
 - of equal proportions in each circuit
 - higher in the circuit with the smaller pipe size
 - lower in the circuit with the larger pipe size
 - that is double compared to a single piping run
- The accuracy of Hunter's Curve has been proven to be _____ percent inflated.**
 - 25
 - 50
 - 75
 - 100
- The coefficient of friction is the measurement of _____ in piping.**
 - pressure drop
 - velocity
 - roughness or smoothness
 - none of the above
- Flow rates shown in Figure 2 are _____.**
 - generally accepted by system designers
 - hopelessly outdated
 - unreasonable for use in designing systems
 - b and c
- Pipe failure can be caused by corrosion from _____.**
 - contaminated water
 - excessive velocities
 - softened water
 - hot water
- The actual inside diameter of 2½-inch type K copper tube is _____.**
 - 2.435 inches
 - 2.465 inches
 - 2.469 inches
 - 2.500 inches
- The empirical method is _____.**
 - based on arbitrary decisions
 - cannot be duplicated
 - allowed only by the most out-of-date codes
 - used only by the most senior and the most junior of designers
- Research is required to _____.**
 - determine the actual minimum flow required for each fixture type
 - satisfy the psychological requirements of the users
 - provide the necessary sanitary requirements
 - all of the above
- The pressure that exists in a piping network at any point when water is flowing is considered _____.**
 - static pressure
 - residual pressure
 - flow pressure
 - none of the above
- The probability method _____.**
 - works for all plumbing systems
 - is unanimously accepted by plumbing engineers
 - should not be used for small numbers of fixtures
 - a and b
- The two methods of sizing domestic water, empirical method and method of probability, _____.**
 - are contradictory
 - give satisfactory results
 - cannot be relied upon
 - have been replaced by computer-based methods
- An automatic flow control orifice is designed to _____.**
 - regulate pressure
 - deliver constant flow
 - restrict pressure
 - increase pressure

Plumbing Systems & Design Continuing Education Application Form

This form is valid up to one year from date of publication. The PS&D Continuing Education program is approved by ASPE for up to one contact hour (0.1 CEU) of credit per article. Participants who earn a passing score (90 percent) on the CE questions will receive a letter or certification within 30 days of ASPE's receipt of the application form. (No special certificates will be issued.) Participants who fail and wish to retake the test should resubmit the form along with an additional fee (if required).

1. Photocopy this form or download it from www.psdmagazine.org.
2. Print or type your name and address. Be sure to place your ASPE membership number in the appropriate space.
3. Answer the multiple-choice continuing education (CE) questions based on the corresponding article found on www.psdmagazine.org and the appraisal questions on this form.
4. Submit this form with payment (\$35 for nonmembers of ASPE) if required by check or money order made payable to ASPE or credit card via mail (ASPE Education Credit, 8614 W. Catalpa Avenue, Suite 1007, Chicago, IL 60656) or fax (773-695-9007).

Please print or type; this information will be used to process your credits.

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I am applying for the following continuing education credits:

I certify that I have read the article indicated above.

Signature _____

Expiration date: Continuing education credit will be given for this examination through **March 31, 2008**. Applications received after that date will not be processed.

ASPE Member Each examination: \$25
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Payment: Personal Check (payable to ASPE) \$ _____

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ASPE is hereby authorized to charge my CE examination fee to my credit card.

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PS&D Continuing Education Answer Sheet

Water System Design (PSD 138)

Questions appear on page 52. Circle the answer to each question.

- | | | | | |
|-------|---|---|---|---|
| Q 1. | A | B | C | D |
| Q 2. | A | B | C | D |
| Q 3. | A | B | C | D |
| Q 4. | A | B | C | D |
| Q 5. | A | B | C | D |
| Q 6. | A | B | C | D |
| Q 7. | A | B | C | D |
| Q 8. | A | B | C | D |
| Q 9. | A | B | C | D |
| Q 10. | A | B | C | D |
| Q 11. | A | B | C | D |
| Q 12. | A | B | C | D |

Appraisal Questions

Water System Design (PSD 138)

1. Was the material new information for you? Yes No
2. Was the material presented clearly? Yes No
3. Was the material adequately covered? Yes No
4. Did the content help you achieve the stated objectives? Yes No
5. Did the CE questions help you identify specific ways to use ideas presented in the article? Yes No
6. How much time did you need to complete the CE offering (i.e., to read the article and answer the post-test questions)? _____