

Continuing Education from *Plumbing Systems & Design*

Kenneth G. Wentink, PE, CPD, and Robert D. Jackson

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 Web site. 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 November/December 2006 Continuing Education article is "Animal-care Facility Piping Systems," Chapter 7 of *Pharmaceutical Facilities Plumbing Systems* by Michael Frankel. This chapter discusses the various piping systems uniquely associated with the physical care, health, and well-being of laboratory animals. Included are utility systems for animal watering, water treatment, room and floor cleaning, equipment washing, cage flushing and drainage, and other specialized piping required for laboratory and experimental work within the facility.

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—"Animal-care Facility Piping Systems" (PSD 136)

- What comprises the largest solid waste item from animal cages?**
 - bedding
 - feces
 - carcasses
 - miscellaneous waste
- This chapter discusses various piping systems uniquely associated with the physical care, health, and well-being of _____.**
 - laboratory workers
 - laboratory animals
 - animal watering
 - cage cleaning
- A single-station detergent-dispensing system is used when rooms are _____.**
 - hosed down
 - cleaned with mops or squeegees
 - cleaned with steam
 - none of the above
- To maintain drinking water quality, _____.**
 - a water purification system must be designed
 - the water system must be allowed to run continuously
 - there must be chlorine injection
 - the drinking water distribution system must be flushed periodically
- Floor drains should not be placed _____ where animals are kept.**
 - under cages in rooms
 - in the center of the room
 - at the back edge of cages in rooms
 - none of the above
- A pulping unit is used to _____.**
 - separate water from solid waste
 - determine the pH of the waste
 - determine the temperature of the waste
 - grind the waste into a slurry
- 10-CFR-58 _____.**
 - is the federal code that must be followed when keeping animals for research
 - requires compliance with FDA protocols for pharmaceutical applications
 - is the guide for the care and use of laboratory animals
 - is the code for good laboratory practice for non-clinical laboratory studies
- Select the true statement below.**
 - There are no generally recognized and accepted standards for animal drinking water.
 - Drinking valves are not used by animals to obtain water from the distribution system.
 - Water pressure, minimum and maximum, for the various animals to be served is mandated in the plumbing code.
 - Reverse osmosis (RO) systems are inappropriate for animal drinking water systems.
- The recommended water pressure for dogs and cats is _____.**
 - 6–12 psig
 - 20.4–34 kPa
 - more than for rats and mice
 - none of the above
- What flow rate and pressure of oil-free air is used to dry the interior of hoses?**
 - 5 scfm at 30 psig
 - 10 scfm at 30 psig
 - 5 scfm at 60 psig
 - 10 scfm at 60 psig
- What type of piping material should be used on systems that require frequent sterilization?**
 - cast iron
 - copper
 - galvanized
 - stainless steel
- The water consumption of small animals in cages is _____.**
 - based on a flushing system to maintain fresh water in the piping at all times
 - established by experience
 - very low
 - none of the above

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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Organization _____

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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 **November 30, 2007**. Applications received after that date will not be processed.

ASPE Member Nonmember
Each examination: \$25 Each examination: \$35
Limited Time: No Cost to ASPE Member

Payment: Personal Check (payable to ASPE) \$ _____
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If rebilling of a credit card charge is necessary, a \$25 processing fee will be charged.
ASPE is hereby authorized to charge my CE examination fee to my credit card.

Account Number _____ Expiration date _____

Signature _____ Cardholder's name (Please print) _____

PS&D Continuing Education Answer Sheet

Animal-care Facility Piping Systems (PSD 136)

Questions appear on page 46. 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

Animal-care Facility Piping Systems (PSD 136)

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)? _____