

# **Wisconsin Contractors Institute**

## **Continuing Education**

**Plumbing Codes – Comm 82**

**Course #13086 – 2 hours**

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**Comm 82.01 Scope.** The provisions of this chapter apply uniformly to the design, construction, installation, supervision, maintenance and inspection of plumbing, including but not limited to sanitary and storm drainage, water supplies, wastewater treatment, and dispersal or discharge for buildings, except for POWTS systems as regulated by ch. Comm 83.

**Comm 82.015 Purpose.** Pursuant to s. 145.02, Stats., the purpose of this chapter is to provide that all plumbing in connection with buildings and facilities in the state, including buildings owned by the state or any political subdivision thereof, shall be safe, sanitary and such as to safeguard the public health and the waters of the state.

**Comm 82.03 Application. (1)** The provisions of this chapter are not retroactive, unless specifically stated otherwise in the rule.

**(2)** Pursuant to s. 145.13, Stats., this chapter is uniform in application and a municipality may not enact an ordinance for the design, construction, installation, supervision, maintenance and inspection of plumbing which is more stringent than this chapter, except as specifically permitted by rule.

**(3)** A department interpretation of the requirements in this chapter shall supersede any differing interpretation by a lower level jurisdiction. A department decision on the application of the requirements in this chapter shall supersede any differing decision by a lower level jurisdiction.

**Note:** A decision of the department may be appealed. Section 101.02 (6) (e), Stats., outlines the procedure for submitting requests to the department for appeal hearings and the department procedures for hearing appeals.

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**TEST QUESTIONS:**

**1.) POWTS systems are regulated by ch. Comm 83.**

- a. True
- b. False

**2.) The provisions of ch. Comm 82 apply uniformly to the \_\_\_\_\_ of plumbing.**

- a. Design and construction
- b. Installation
- c. Maintenance and inspection
- d. All of the above

**3.) The purpose of Chapter 82 is to provide that all plumbing in connection with buildings and facilities in the United States.**

- a. True
- b. False

**4.) The provisions of Chapter 82 are not retroactive, unless specifically stated otherwise in the rule.**

- a. True
- b. False

**5.) A decision by the Department may never be appealed.**

- a. True
  - b. False
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## Subchapter I — Intent and Basic Requirements

**Comm 82.10 Basic plumbing principles.** This chapter is founded upon basic principles of environmental sanitation and safety through properly designed, installed and maintained plumbing systems. Some of the details of plumbing construction may vary, but the basic sanitary and safety principles desirable and necessary to protect the health of people are the same. As interpretations may be required and as unforeseen situations arise which are not specifically addressed, the following intent statements and basic requirements shall be used to evaluate equivalency where applicable:

**(1) INTENT.** (a) Plumbing in connection with all buildings, public and private, intended for human occupancy, shall be installed and maintained in such a manner so as to protect the health, safety and welfare of the public or occupants and the waters of the state.

(b) Plumbing fixtures, appliances and appurtenances, whether existing or to be installed, shall be supplied with water in sufficient volume and at pressures adequate to enable the fixtures, appliances and appurtenances to function properly and efficiently at all times and without undue noise under normal conditions of use. Plumbing systems shall be designed and adjusted to use the minimum quantity of water consistent with proper performance and cleaning.

(c) Devices for heating and storing water in pressure vessels or tanks shall be so designed and installed as to prevent dangers of explosion or overheating.

(d) Drain systems shall be designed, constructed and maintained so as to conduct the wastewater or sewage efficiently and shall have adequate cleanouts.

(e) The drain systems shall be so designed as to provide an adequate circulation of air in all pipes and no danger of siphonage, aspiration or forcing of trap seals under conditions of ordinary use.

(f) A plumbing system shall be of durable material, free from defective workmanship, and designed and constructed so as to provide satisfactory service for its reasonable expected life.

(g) Proper protection shall be provided to prevent contamination of food, water, sterile goods and similar materials by backflow of wastewater.

(h) All plumbing fixtures shall be installed so as to provide adequate spacing and accessibility for the intended use and cleaning.

**(2) BASIC REQUIREMENTS.** (a) Every building intended for human occupancy shall be provided with an adequate, safe and potable water supply.

(b) To fulfill the basic needs of sanitation and personal hygiene, each dwelling connected to a POWTS or public sewer shall be provided with at least the following plumbing fixtures: one water closet, one wash basin, one kitchen sink and one bathtub or shower, except a system or device recognized under ch. Comm 91 may be substituted for the water closet. All other structures for human occupancy shall be equipped with sanitary facilities in sufficient numbers as specified in chs. Comm 60 to 66.

(c) Hot or tempered water shall be supplied to all plumbing fixtures that normally require hot or tempered water for proper use and function.

(d) Where plumbing fixtures exist in a building that is not connected to a public sewer system, suitable provision shall be made for treating, recycling, dispersing or holding the wastewater.

(e) Plumbing fixtures shall be made of durable, smooth, non- absorbent and corrosion resistant material, and shall be free from concealed fouling surfaces.

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**TEST QUESTIONS:**

- 6.) **Plumbing in connection with all buildings intended for human occupancy shall be installed and maintained in such a manner to protect the following:**
- a. Waters of the state
  - b. Public health
  - c. Public safety
  - d. All of the above
- 7.) **Plumbing systems shall be designed and adjusted to use the maximum quantity of water consistent with proper performance and cleaning.**
- a. True
  - b. False
- 8.) **Devices for heating and storing water in pressure vessels or tanks shall be so designed and installed as to prevent dangers of explosion or overheating.**
- a. True
  - b. False
- 9.) **A plumbing system shall be of durable material, free from defective workmanship, and designed and constructed so as to provide satisfactory service for its reasonable expected life.**
- a. True
  - b. False
- 10.) **Proper protection shall be provided to prevent contamination of \_\_\_\_\_ and similar materials by backflow of wastewater.**
- a. Food
  - b. Water
  - c. Sterile goods
  - d. All of the above
- 11.) **All plumbing fixtures shall be installed so as to provide adequate spacing and accessibility for the intended use and cleaning.**
- a. True
  - b. False
- 12.) **Hot or tempered water shall be supplied to all plumbing fixtures that normally require hot or tempered water for proper use and function.**
- a. True
  - b. False
- 13.) **Where plumbing fixtures exist in a building that is not connected to a public sewer system, suitable provision shall be made for treating, recycling, dispersing or holding the wastewater.**
- a. True
  - b. False
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## Subchapter II — Administration and Enforcement

### Comm 82.20 Plan review and cross connection control assembly registration.

(1) GENERAL. Plans and specifications shall be submitted to the department or to an approved agent municipality for review in accordance with pars. (a) and (b).

**Note:** The department forms required in this chapter are available from the Safety and Buildings Division at P.O. Box 7162, Madison, WI 53707-7162, or at telephone (608) 266-3151 and (608) 264-8777 (TTY), or at the Safety and Buildings' web site at <http://commerce.wi.gov/SB>.

(a) *Department review.* Plumbing plans and specifications for the types of plumbing installations, except direct replacements, listed in Table 82.20-1 shall be submitted to the department for review, regardless of where the installation is to be located. A municipality shall be designated as an agent municipality in accordance with sub.

(2). Written approval for the plumbing plans shall be obtained prior to installation of the plumbing.

(b) *Department or agent municipality review.* 1. Plumbing plans and specifications for the types of plumbing installations, except direct replacements, listed in Table 82.20-2 shall be submitted for review to an agent municipality, if the installation is to be located within the agent municipality or to the department, if the installation is not to be located within an agent municipality. A municipality shall be designated as an agent municipality in accordance with sub. (2). Written approval for the plumbing plans shall be obtained prior to installation of the plumbing.

**Note:** The number of plumbing fixtures to be submitted and reviewed by an agent municipality is a subject of local ordinances.

2. Plan review and approval of one- and 2-family dwellings. Review and approval of plumbing plans for one- and 2-family dwellings shall be in accordance with the provisions specified in s. Comm 20.09.

(c) *Cross connection control assembly registration.* The installation of each reduced pressure principle backflow preventer, reduced pressure fire protection principle backflow preventer, spill resistant vacuum breaker, reduced pressure detector fire protection backflow prevention assembly or pressure vacuum breaker shall be registered with the department no later than 7 days after installation of the assembly.

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### **TEST QUESTIONS:**

14.) **Written approval for the plumbing plans shall be obtained prior to installation of the plumbing.**

- a. True
- b. False

15.) **Review and approval of plumbing plans for one- and 2-family dwellings shall be in accordance with the provisions specified in s. Comm \_\_\_\_.**

- a. 25.09
- b. 22.08
- c. 20.09
- d. 24.08

16.) **The number of plumbing fixtures to be submitted and reviewed by an agent municipality is a subject of local ordinances.**

- a. True
- b. False

- 17.) The installation of each reduced pressure principle backflow preventer shall be registered with the department no later than \_\_\_\_ days.
- 5
  - 7
  - 10
  - 14

**Table 82.20-1**

## **Submittals to Department**

### **Type of Plumbing Installation**

1. All plumbing, new installations, additions and alterations, regardless of the number of plumbing fixtures involved, serving hospitals, nursing homes and ambulatory surgery centers. (A)
2. Plumbing, new installations, additions and alterations involving 16 or more plumbing fixtures, serving buildings owned by a metropolitan or sanitary sewer district. (B)
3. Plumbing, new installations, additions and alterations involving 16 or more plumbing fixtures, serving buildings owned by the state. (B)
4. Alternate and experimental plumbing systems.
5. Reduced pressure principle backflow preventers, reduced pressure fire protection principle backflow preventers, pressure vacuum breaker assemblies, reduced pressure detector fire protection backflow prevention assemblies, and spill resistant vacuum breakers serving health care and related facilities.
6. Stormwater and clearwater infiltration plumbing systems serving a public building or facility. (C)
7. Treatment systems, other than POWTS, designed to treat water for compliance with Table 82.70-1.c

A - The registration of cross connection control devices as required under s. Comm 82.20 (1) (c) is included as a part of plan review and approval.

B - For the purpose of plan review submittal, water heaters, floor drains, storm inlets, roof drains, multi-purpose piping (mpp) fire sprinklers and hose bibbs are to be included in the count.

C - Agent municipalities may perform this review when so authorized by the department.

**Table 82.20-2**

## **Submittals to Department Or Agent Municipality**

### **Type of Plumbing Installation**

1. New installations, additions and alterations to drain systems, vent systems, water service systems, and water distribution systems involving 16 or more plumbing fixtures to be installed in connection with public buildings. (A, B)
2. Grease interceptors to be installed for public buildings.
3. Garage catch basins, carwash interceptors and oil interceptors to be installed for public buildings and facilities.
4. Sanitary dump stations.
5. Piping designed to serve as private water mains.
6. Water supply systems and drain systems to be installed for manufactured home communities and campgrounds. (C)
7. Piping designed to serve as private interceptor main sewers greater than 4 inches in diameter when sized for gravity flow.
8. Chemical waste systems regardless of the number of plumbing fixtures. (C)
9. Stormwater systems, not including infiltration plumbing systems, serving a public building or facility where the drainage area is one acre or more. (D)
10. Mixed wastewater holding device.

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A - For the purposes of plan review submittal, water heaters, floor drains, storm inlets, roof drains, multi-purpose piping (MPP) fire sprinklers and hose bibs are to be included in the count. For a phased project such as a mall or office complex fixture count includes all proposed fixtures connected to a common building sanitary sewer, a common water service and all storm sewers serving the building.

B - For the purpose of plan submittal, public buildings do not include zero-lot-line row houses where each living unit is served by an individual water service and an individual building sewer.

C - Only agent municipalities which are cities of the first class may review these types of installations.

D - Plan review involving 16 or more plumbing fixtures also applies.

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**TEST QUESTIONS:**

- 18.) **Alternative and experimental plumbing systems should be submitted to \_\_\_\_\_.**
- The Department
  - Agent Municipality or Department
  - Is not required to be submitted
  - None of the above
- 19.) **Sanitary dump stations should be submitted to \_\_\_\_\_.**
- The Department
  - Agent Municipality or Department
  - Is not required to be submitted
  - None of the above
- 20.) **Piping designed to serve as private water mains should be submitted to \_\_\_\_\_.**
- The Department
  - Agent Municipality or Department
  - Is not required to be submitted
  - None of the above
- 21.) **Plumbing, new installations, additions and alterations involving 16 or more plumbing fixtures, serving buildings owned by the state should be submitted to \_\_\_\_\_.**
- The Department
  - Agent Municipality or Department
  - Is not required to be submitted
  - None of the above
- 22.) **Mixed wastewater holding devices should be submitted to \_\_\_\_\_.**
- The Department
  - Agent Municipality or Department
  - Is not required to be submitted
  - None of the above
-

**(2) AGENT MUNICIPALITIES.** The department may designate to an approved municipality the authority to review and approve plumbing plans and specifications for those plumbing installations to be located within the municipality's boundary limits and which require approval under sub. (1) (b).

(a) An agent municipality shall employ at least 2 full time plumbing inspectors who have been qualified by the department.

1. The primary duties of the plumbing inspectors shall include plumbing plan review.
2. The plumbing inspectors shall be Wisconsin licensed master or journeyman plumbers.

(b) An agent municipality may waive its jurisdiction for plan review and approval for any project, in which case plans shall be submitted to the department for review and approval.

(c) Agent municipalities may set by ordinance the fees for plan review services.

**(3) PRIORITY PLAN REVIEW.** An appointment may be made with the department to facilitate the examination of plans in less than the normal processing time. Complete plans along with the fee specified in s. Comm 2.09, shall be submitted to the department. The plans shall comply with all of the provisions of this section.

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**TEST QUESTIONS:**

**23.) An agent municipality shall employ at least \_\_\_ full time plumbing inspectors who have been qualified by the department.**

- a. 1
- b. 2
- c. 3
- d. 4

**24.) Agent municipalities are not allowed by ordinance to set the fees for plan review services.**

- a. True
- b. False

**25.) The plumbing inspectors for an agent municipality shall hold which license:**

- a. Master Plumber
- b. Journeyman Plumber
- c. Either a or b
- d. None of the above

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**(4) PLANS AND SPECIFICATIONS.** (a) At least 2 sets of plans and one copy of specifications which are clear, legible and permanent copies shall be submitted for examination and approval.

(b) All plans submitted for approval shall be accompanied by sufficient data and information for the department to determine if the installation and its performance will meet the requirements of chs. Comm 81 to 84.

1. Information to accompany the plans shall include the location or address of the installation and the name of the owner.
2. Plans proposing the installation, creation or extension of a sanitary private interceptor main sewer which is to discharge to a municipal treatment facility shall:



a. Be accompanied by a letter from the appropriate designated planning or management agency indicating conformance with an approved area wide water quality management plan under ch. NR 121; and

b. Not be approved, if the municipality is ineligible for sanitary sewer extension approvals under s. NR 110.05.

**Note:** For plans proposing the installation, creation or extension of a private interceptor main sewer which is to discharge to a municipal treatment facility, see also ch. NR 121.

3. Except as provided in subd. 4., plans proposing the installation of a building sewer for new construction which is to discharge to a municipal treatment facility shall:

a. Be accompanied by a letter from either the appropriate designated management agency or sanitary district indicating conformance with an approved area wide water quality management plan; and

b. Not be approved, if the municipality is ineligible for sanitary sewer extension approvals under s. NR 110.05.

4. Plans proposing the installation of a building sewer for new construction which is to discharge to a municipal treatment facility shall not be required to comply with subd. 3., if:

a. The proposed installation is served by an existing building sewer which extends from the lot line to the public sewer and the proposed installation does not exceed the capacity of the existing building sewer or sewers; or

b. The plans indicate that a drainage load of not more than 54 drainage fixture units will be discharged through the building sewer.

(c) Plumbing plans, index sheets and specifications for a plumbing system submitted for review and approval shall be signed in accordance with any of the following methods:

1. A Wisconsin registered architect, engineer or plumbing designer shall sign and seal or stamp all plans and accompanying specifications in accordance with ch. A-E 2.

2. A master plumber, master plumber–restricted service, master plumber–restricted appliance or a utility contractor shall sign and date all plumbing plans and accompanying specifications as provided under s. 145.06, Stats. Each sheet of plans and specifications submitted shall be signed and dated and shall include the valid Wisconsin license number of the individual responsible for the installation. Where more than one sheet is bound together into one volume, only the title sheet or index sheet shall be signed and dated by the individual responsible for the installation. The signed title or index sheet shall clearly identify all of the other sheets in the volume.

3. A pump installer shall sign and date all plumbing plans and accompanying specifications for which the individual is responsible for the installation. Each sheet of plans and specifications submitted shall be signed and dated and shall include the valid Wisconsin license number of the individual responsible for the installation. Where more than one sheet is bound together into one volume, only the title sheet or index sheet shall be signed and dated by the individual responsible for the installation. The signed title or index sheet shall clearly identify all of the other sheets in the volume.

(d) 1. When requesting approval of an experimental plumbing system, all of the following shall be submitted:

a. At least 2 sets of plans signed in accordance with par. (d) and detailing the system installation for each site.

- b. A letter of consent from the site or system owner of the installation. The letter shall acknowledge that the owner has received and read a copy of the experimental plumbing system submittal and is in agreement with all requirements listed within this subdivision.
- c. Any additional information as requested by the department.
2. The registered architect, engineer, designer or master plumber responsible for the design of the experimental plumbing system shall, upon completion, certify in writing to the department that the installation is in compliance with the approved plans, specifications and data.
3. Onsite inspections shall be performed by the department at time intervals as specified by the department, but not less than once a year. Time intervals shall be included as conditions of approval. An inspection report shall be written. The department may assess a fee for each inspection.
4. No later than five years after the date of the completed installation the department may perform one of the following:
- Order the removal of the experimental plumbing system.
  - Issue an alternate approval as specified in sub. (12) (a).
  - Provide an extension of the experiment with conditions.
5. If an experimental plumbing system is subsequently codified in chs. Comm 82 and 84, or ch. 145, Stats., the requirements as specified in subds. 3. and 4. do not apply.
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**TEST QUESTIONS:**

- 26.) **At least \_\_\_\_ sets of plans and one copy of specifications which are clear, legible and permanent copies shall be submitted for examination and approval.**
- 1
  - 2
  - 3
  - 4
- 27.) **A Wisconsin registered architect, engineer or plumbing designer shall sign and seal or stamp all plans and accompanying specifications.**
- True
  - False
- 28.) **A \_\_\_\_\_ shall sign and date all plumbing plans and accompanying specifications as provided under s. 145.06.**
- Master Plumber
  - Journeyman Plumber
  - Journeyman Plumber – restricted service
  - Journeyman Plumber – restricted appliance
- 29.) **A pump installer shall sign and date all plumbing plans and accompanying specifications for which the individual is responsible for the installation.**
- True
  - False

- 30.) When requesting approval of an experimental plumbing system, all of the following shall be submitted:**
- a. 2 sets of plans
  - b. A letter of consent
  - c. Any information requested by the department
  - d. All of the above
- 31.) For experimental plumbing systems, onsite inspections shall be performed by the department at time intervals as specified by the department, but not less than once a \_\_\_\_.**
- a. Week
  - b. Month
  - c. Year
  - d. None of the above
- 

**(5) PLAN REVIEW.** Except as provided in sub. (12), and pursuant to s. Comm 2.07 (3), the department shall review and make a determination on an application for plan review within 15 business days.

(a) *Conditional approval.* If, upon review, the department determines that the plans substantially conform to the provisions of chs. Comm 82 to 84, a conditional approval, in writing, shall be granted. All non-code complying conditions stated in the conditional approval shall be corrected before or during installation.

(b) *Denial of approval.* If, upon review, the department determines that the plans do not substantially conform to the provisions of chs. Comm 82 to 84, the request of conditional approval shall be denied in writing.

**(6) EVIDENCE OF APPROVAL.** The plumber responsible for the installation of the plumbing shall keep at the construction site at least one set of plans bearing the department's or the agent municipality's stamp of approval and at least one copy of specifications. The plans and specifications shall be open to inspection by an authorized representative of the department.

**(7) FEES.** Fees for plumbing plan review and petition for variance shall be submitted in accordance with ss. Comm 2.64 and 2.52.

**(8) REVISIONS.** All changes or modifications, which involve the provisions of chs. Comm 82 to 84, made to plumbing plans and specifications, which have been granted approval under sub. (1), shall be submitted to the department or agent municipality for examination. All changes and modifications shall be approved in writing by the department or agent municipality prior to installation of the plumbing.

**(9) REVOCATION OF APPROVAL.** The department may revoke any approval, issued under the provisions of this chapter, for any false statements or misrepresentation of facts on which the approval was based.

**(10) DEPARTMENT LIMITATION AND EXPIRATION OF APPROVAL.**

(a) A conditional approval of a plan by the department shall not be construed as an assumption by the department of any responsibility for the design; and the department does not hold itself liable for any defects in construction, nor for any damages that may result from the specific installation.

(b) Plan approval by the department or its authorized representative shall expire 2 years after the date indicated on the approval letter, if construction has not commenced within that 2 year period.

**(11) PETITION FOR VARIANCE.** (a) *Procedure.* The department shall consider and may grant a variance to a provision of this chapter in accordance with ch. Comm 3.

**Note:** Chapter Comm 3 requires the submittal of a petition for variance form (SBD-9890) and a fee, and that an equivalency is established in the petition for variance that meets the intent of the rule being petitioned. Chapter Comm 3 also requires the department to process regular petitions within 30 business days and priority petitions within 10 business days.

(b) *Petition processing time.* Except for priority petitions, the department shall review and make a determination on a petition for variance within 30 business days of receipt of all calculations, documents and fees required to complete the review. The department shall process priority petitions within 10 business days.

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**TEST QUESTIONS:**

- 32.) **In most cases, the department shall review and make a determination on an application for plan review within \_\_\_\_ days.**
- 7 days
  - 10 days
  - 14 days
  - 15 days
- 33.) **All non-code complying conditions stated in the conditional approval shall be corrected before or during installation.**
- True
  - False
- 34.) **The plumber responsible for the installation of the plumbing shall keep at the construction site at least one set of plans and at least one copy of specifications.**
- True
  - False
- 35.) **The department may revoke any approval, issued under the provisions of this chapter, for any false statements or misrepresentation of facts on which the approval was based.**
- True
  - False
- 36.) **Plan approval by the department or its authorized representative shall expire \_\_\_\_\_ after the date indicated on the approval letter, if construction has not commenced within that period.**
- 1 year
  - 2 years
  - 3 years
  - 4 years
- 37.) **The department shall review and make a determination on a regular petition for variance within \_\_\_\_\_ business days of receipt of all calculations, documents and fees required to complete the review.**
- 10
  - 20
  - 30
  - 40

- 38.) The department shall review and make a determination on a priority petition for variance within \_\_\_\_\_ business days of receipt of all calculations, documents and fees required to complete the review.**
- a. 10
  - b. 20
  - c. 30
  - d. 40

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**(12) ALTERNATE AND EXPERIMENTAL PLUMBING SYSTEM REVIEW AND APPROVAL.** The provisions of this chapter, ch. Comm 84 or ch. 145, Stats., are not intended to prevent the design and use of approved innovative plumbing systems.

(a) *Alternate plumbing systems.* The department may issue an approval of an alternate plumbing system if the system complies with the intent of chs. Comm 82 and 84, or ch. 145, Stats.

1. For an alternate plumbing system, before availability for statewide installation and use, an alternate plumbing system approval shall be issued. Concepts, plans, specifications and the documentation to support the system design shall be submitted to the department for review.
2. The department may require the submission of any information deemed necessary for review. Sufficient evidence shall be submitted to substantiate at least the following:
  - a. Assertions of function and performance.
  - b. Compliance with the intent of chs. Comm 82 and 84, or ch. 145, Stats.
3. Pursuant to s. Comm 2.07 (3), the department shall review and make a determination on an application for an alternate plumbing system within 3 months. Approval for an alternate plumbing system shall be issued by the department in writing.
4. The department may include specific conditions in issuing an approval for an alternate plumbing system, including an expiration date for the approval. A violation of any of the conditions under which an approval is issued shall constitute a violation of this chapter.
5. If upon review the department determines that an alternate plumbing system does not comply with the intent of chs. Comm 82 and 84, or ch. 145, Stats., the request for approval shall be denied in writing.

(b) *Experimental plumbing systems.* The department may issue an approval of an experimental plumbing system for the purpose of proving compliance with the intent of chs. Comm 82 and 84 and ch. 145, Stats.

1. For an experimental plumbing system, a separate approval shall be obtained for each system or project to be installed for the purpose of proving compliance with the intent of chs. Comm 82 and 84 and ch. 145, Stats. Approval for an experimental plumbing system shall be issued by the department in writing.
2. The department may require the submission of additional information deemed necessary for determining that the design meets the intent of chs. Comm 82 and 84 and ch. 145, Stats.
3. Pursuant to s. Comm 2.07 (3), the department shall review and make a determination on an application for an experimental plumbing system within 6 months.
4. The department may include specific conditions in issuing an approval for an experimental plumbing system, including an expiration date for the approval. A violation of any of the conditions under which an approval is issued shall constitute a violation of this chapter.

5. Denial of an experimental plumbing system or project by the department shall be made in writing.

6. The department may establish parameters to limit the number of applications for review it will accept for experimental plumbing systems.

(c) *Modification.* If an approved alternate or experimental plumbing system is modified or additional assertions of function or performance are made, the approval shall be void, unless the system is resubmitted to the department for review and approval is granted.

(d) *Revocation of approval.* The department may revoke an approval issued under this section for any false statements or misrepresentations of facts or data on which the approval was based, or as a result of system failure.

(e) *Limitations.* An approval issued by the department for an alternate or experimental plumbing system may not be construed as an assumption of any responsibility for defects in design, construction may result.

(f) *Fees.* Fees for the review of an alternate or experimental plumbing system under this section and any onsite inspections shall be submitted in accordance with ch. Comm 2.

**(13) CROSS CONNECTION CONTROL REGISTRATION.** (a) Registration, as specified in sub. (1) (c), shall be submitted in a format acceptable to the department.

(b) The form for registering cross connection control devices and assemblies with the department shall include at least all of the following information:

1. The building or facility name and address where the device or assembly is or will be installed.
2. The location of the cross connection control device or assembly within the building or facility.
3. A description of the cross connection control device or assembly including the size, model number, serial number and manufacturer.
4. The name of the owner or owner's agent submitting the registration form and contact information.

(c) Each registration form submitted shall be accompanied by the appropriate fee in accordance with s. Comm 2.645.

(d) Upon receipt of a completed registration form, the department shall issue written confirmation of registration including a department assigned identification number for each cross connection control device or assembly.

(e) Upon permanent removal or replacement of any reduced pressure principle backflow preventer, reduced pressure fire protection principle backflow preventer, spill resistant vacuum breaker, reduced pressure detector fire protection backflow prevention assembly, or pressure vacuum breaker, the owner shall notify the department in writing using a format acceptable to the department.

**(14) PENALTIES.** Penalties for violations of this chapter shall be assessed in accordance with s. 145.12, Stats.

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**39.) The department shall review and make a determination on an application for an alternate plumbing system within \_\_\_\_\_.**

- a. 1 month
- b. 3 months
- c. 6 months
- d. 1 year

- 40.) **The department may include specific conditions in issuing an approval for an alternate plumbing system, but it may not include an expiration date for approval.**
- True
  - False
- 41.) **Approval for an experimental plumbing system shall be issued by the department in writing.**
- True
  - False
- 42.) **The department shall review and make a determination on an application for an experimental plumbing system within \_\_\_\_\_.**
- 1 month
  - 3 months
  - 6 months
  - 1 year
- 43.) **The department may establish parameters to limit the number of applications for review it will accept for experimental plumbing systems.**
- True
  - False
- 44.) **The department may revoke an approval issued for an experimental system for the following reason:**
- False statements
  - Misrepresentations of facts
  - System failure
  - All of the above

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**Comm 82.21 Testing and inspection. (1) TESTING OF PLUMBING SYSTEMS.** Except as provided in par. (a), all new plumbing and all parts of existing systems which have been altered, extended or repaired shall be tested as specified in sub. (2) to disclose leaks and defects before the plumbing is put into operation.

(a) *Waiver of testing.* 1. The testing of the plumbing shall not be required where the installation does not include the addition, replacement, alteration or relocation of any water distribution, drain or vent piping.

2. a. Field testing the installation of a storm building sewer and a storm private interceptor main sewer is not required.

b. The joints and connections to be employed for storm building sewer piping shall conform with s. Comm 84.40 (1) (a).

(b) *Local inspection.* Where the plumbing is installed in a municipality having a local inspector, the testing of the plumbing shall be done in the presence of a plumbing inspector, except as provided in subd. 1. b.

1. 'Notice of inspection.' a. The plumber responsible for the installation shall notify the plumbing inspector in person, by telephone or in writing when the work is ready for inspection.

b. Except as permitted in par. (c), if the inspection is not made by the end of the normal business day following the day of notification, not including Saturday, Sunday or legal holidays, the plumber may proceed with the testing and the installation.

c. Testing may be done without the presence of the inspector, if the master plumber responsible for the installation obtains the inspector's permission to provide a written test report in a format acceptable to the inspector.

2. 'Preparations for inspection.' When the installation is ready for inspection, the plumber shall make such arrangements as will enable the plumbing inspector to inspect all parts of the plumbing system. The plumber shall have present the proper apparatus and appliances for making the tests, and shall furnish such assistance as may be necessary in making the inspection.

3. 'Rough-in inspection.' A rough-in inspection shall be made when the plumbing system is roughed-in and before fixtures are set. Except as provided in subd. 1., plumbing work shall not be closed in, concealed, or covered until it has been inspected and approved by the plumbing inspector and permission is granted to do so.

4. 'Final inspection.' a. Upon completion of the plumbing installation and before final approval is given, the plumbing inspector shall inspect the work.

b. Municipalities may require that a final test be conducted in accordance with sub. (2) (h) and that the final test, when required by the municipality, shall be observed by the plumbing inspector.

5. 'Reinspections.' Whenever the plumbing official finds that the work or installation does not pass any initial test or inspection, the necessary corrections shall be made to comply with this chapter. The work or installation shall then be resubmitted for inspection to the plumbing inspector.

(c) *Inspection of one- and 2-family dwellings.* The inspection of plumbing installations for one- and 2-family dwellings shall be in accordance with ss. Comm 20.08 to 20.11.

(d) The initial testing of cross connection control assemblies shall comply with s. Comm 82.22 (8).

**(2) TESTING PROVISIONS.** (a) *General.* The testing of plumbing installations shall be conducted in accordance with this paragraph.

1. 'Equipment, material and labor for tests.' All equipment, material and labor required for testing a plumbing system or part thereof shall be furnished by the plumber responsible for the installation.

2. 'Exposure of work.' Except as provided in pars. (b) and (e), all new, altered, extended or replaced plumbing shall be left uncovered and unconcealed until it has been tested. Where the work has been covered or concealed before it is tested, it shall be exposed for testing.

(b) *Sanitary building sewer and sanitary private interceptor main sewer.* A sanitary building sewer and a sanitary private interceptor main sewer shall be tested for leaks and defects with water or air before or after being covered in accordance with either subd. 1. or 2. The test for leaks and defects may be applied to the entire building sewer or private interceptor main sewer or in sections. For the purposes of this subdivision, the testing of a building sewer or private interceptor main sewer is not required to include the manholes serving the sewer.

1. The building sewer or private interceptor main sewer shall be tested by insertion of a test plug at the point of connection with the public sewer. The sewer shall then be filled with water under a head of not less than 10 feet. The water level at the top of the test head of water shall not drop for at least 15 minutes.

2. The air test shall be made by attaching an air compressor testing apparatus to any suitable opening, and, after closing all other inlets and outlets to the system, forcing air into the system until there is a uniform gauge pressure of 3 pounds per square inch. This pressure shall be held without introduction of additional air for a period of at least 15 minutes.



(c) *Building drain.* The entire building drain with all its branches, receptacles and connections shall be brought so far as practical to the surface or grade of the basement floor and shall be tested with water or air in accordance with par. (g).

(d) *Drain and vent systems.* The piping of a drain and vent systems, including conductors, shall be tested upon completion of the rough piping installation with water or air in accordance with par. (g).

(e) *Private water mains and water services.* Private water mains and water services shall be inspected before being covered. The private water mains and water services shall be tested and proven water tight under water pressure not less than the working pressure under which it is to be used. The water used for testing shall be obtained from a potable source of supply.

**Note:** Standard NFPA 24 for combination water services and combination private water mains may include more stringent requirements for testing.

(f) *Water distribution system.* The piping of a water distribution system shall be tested and proved water tight under a water pressure not less than the working pressure under which it is to be used. The water used for tests shall be obtained from a potable source of supply.

(g) *Test methods for drain and vent systems.* A test for water tightness shall be applied to the entire drain and vent system at one time or to the entire system in sections after the rough piping has been installed in accordance with either subd. 1. or 2.

1. If applied to the entire system, all openings in the piping shall be tightly closed, except the highest opening, and the system shall be filled with water to the point of overflow. If the system is tested in sections, each opening shall be tightly plugged except the highest opening of the section under test, and each section shall be filled with water, but a section shall not be tested with less than a 10 foot head of water. In testing successive sections, at least the upper 10 feet of the next preceding section shall be tested, so that no joint or pipe in the building, except the uppermost 10 feet of the system, is subjected to a test of less than a 10 foot head of water. The water shall be kept in the system or in the portion under test for at least 15 minutes before inspection starts. The system shall then be tight at all points.

2. The air test shall be made by attaching an air compressor testing apparatus to any suitable opening, and, after closing all other inlets and outlets to the system, forcing air into the system until there is a uniform gauge pressure of 5 pounds per square inch or sufficient to balance a column of mercury 10 inches in height. This pressure shall be held without introduction of additional air for a period of at least 15 minutes.

(h) *Final test.* Where required by the local plumbing inspector, after the plumbing fixtures have been installed and the traps filled with water, the connections shall be tested and proved gas and watertight by either one of the methods specified in subd. 1. or 2.

1. The smoke test shall be made by introducing a pungent, thick smoke, produced by one or more smoke machines, into the completed system. When the smoke appears at stack openings on the roof, the openings shall be closed and a pressure equivalent to a one inch water column shall be built and maintained for the period of the inspection.

2. The air test shall be made by attaching a gauge to any suitable opening and, after closing all other inlets and outlets in the system, adding air into the system until a pressure equivalent to a one inch water column exists. The pressure shall remain constant for at least a 5-minute test period without the introduction of additional air.

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**TEST QUESTIONS:**

- 45.) **Field testing the installation of a storm building sewer and a storm private interceptor main sewer is required.**  
a. True  
b. False
- 46.) **The plumber responsible for the installation shall notify the plumbing inspector in person, by telephone or in writing when the work is ready for inspection.**  
a. True  
b. False
- 47.) **A rough-in inspection shall be made when the plumbing system is roughed-in and before fixtures are set.**  
a. True  
b. False
- 48.) **The inspection of plumbing installations for one- and 2-family dwellings shall be in accordance with ss. Comm 20.08 to 20.11.**  
a. True  
b. False
- 49.) **All equipment, material and labor required for testing a plumbing system or part thereof shall be furnished by the inspector.**  
a. True  
b. False
- 50.) **The building sewer or private interceptor main sewer shall be tested by insertion of a test plug at the point of connection with the public sewer. The sewer shall then be filled with water under a head of not less than \_\_\_\_.**  
a. 10 feet  
b. 15 feet  
c. 20 feet  
d. 25 feet
- 51.) **The air test shall be made by attaching an air compressor testing apparatus to any suitable opening, and, after closing all other inlets and outlets to the system, forcing air into the system until there is a uniform gauge pressure of \_\_\_\_ pounds per square inch.**  
a. 1  
b. 2  
c. 3  
d. 4
- 52.) **Private water mains and water services shall be inspected before being covered.**  
a. True  
b. False

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**Comm 82.22 Maintenance and repairs. (1) GENERAL.**

- (a) All plumbing systems, both existing and new, and all parts thereof, shall be maintained in a safe and sanitary condition.
- (b) All devices or safeguards that are required by this chapter shall be maintained in good working order.

(c) The owner shall maintain plumbing systems.

**(2) EXISTING SYSTEMS.** (a) Except as specified in par. (b), any existing plumbing system may remain and maintenance continues if the maintenance is in accordance with the original system design and any of the following:

1. The plumbing system was installed in accordance with the code in effect at the time of installation.
2. The plumbing system conforms to the present code.

(b) When a hazard to life, health or property exists or is created by an existing system, that system shall be repaired or replaced.

**Note:** A cross connection is considered a health hazard by the department.

(c) Existing sewers and water services may only be connected to new buildings when determined by examination and test to conform to the requirements of this chapter.

**(3) FIXTURES REPLACED.** (a) When a fixture, appliance or section of pipe is replaced, the replacement fixture, appliance or pipe shall conform to the provisions of this chapter.

(b) Where the existing drain or vent piping does not conform to the current provisions of this chapter, the department may require the new fixtures to be provided with deep seal traps.

**(4) PLUMBING REUSED.** (a) 1. Except as provided in par. (b) plumbing materials, fixtures or devices removed and found to be in good condition may be reused if such reuse is approved by the department or a local plumbing inspector.

2. The owner of the building or facility in which the reused materials are to be installed shall provide written consent.

(b) Water supply piping materials may only be reused when the intended use involves an equal or higher degree of hazard than the previous use as specified in Table 82.70-1.

**(5) REPAIRS.** All repairs to fixtures, devices or piping shall be completed in conformance with the provisions of this chapter, except repair clamps or bands may be used for emergency situations.

**(6) DEMOLITION OF STRUCTURES.** When a structure is demolished or removed, all sanitary sewer, storm sewer and water supply connections shall be sealed and plugged in a safe manner.

**(7) DEAD ENDS.** If a dead end is created in the removal of any part of a drain system, all openings in the drain system shall be properly sealed.

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## **TEST QUESTIONS**

**53.) When a hazard to life, health or property exists or is created by an existing system, that system shall be repaired or replaced.**

- a. True
- b. False

**54.) When a structure is demolished or removed, all sanitary sewer, storm sewer and water supply connections shall be sealed and plugged in a safe manner.**

- a. True
- b. False

- 55.) If a dead end is created in the removal of any part of a drain system, all openings in the drain system shall remain opened.**
- a. True
  - b. False
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**(8) TESTING OF CROSS CONNECTION CONTROL ASSEMBLIES.** (a) The performance testing requirements of this subsection apply to all cross connection control assemblies regardless of date of installation.

**Note:** For further clarification see Table 82.22-1.

(b) 1. A performance test shall be conducted for the assemblies listed in Table 82.22-1 at all of the following intervals:

a. At the time of installation.

b. Immediately after repairs or alterations to the assembly have occurred.

c. At least annually.

2. The performance test shall be conducted using the appropriate test standard for the assembly as specified in Table 82.22-1.

3. A cross connection assembly performance test shall be conducted by an individual registered by the department in accordance with s. Comm 5.99.

4. a. The results of the cross connection control assembly performance test shall be submitted as specified in Table 82.22-1 in a format prescribed by the department accompanied by a filing fee as specified in s. Comm 2.645 (2).

b. As specified in Table 82.22-1, the results of the cross connection assembly performance test shall be submitted to the department and purveyor within 60 days of completion of the test.

5. The results of performance tests for the assemblies listed in Table 82.22-1 shall be made available upon request to the department, its agent or the local government unit.

**Table 82.22-1  
Testing and Submitting Requirements for Cross Connection Control Assemblies**

<b>ASSE Standard Name and Number</b>	<b>CAN/CSA Standard Name and Number</b>	<b>ASSE Test Standard # and Test Required</b>	<b>Test Results to be submitted to Dept.</b>
Double Check Backflow Prevention Assemblies and Double Check Fire Protection Backflow Prevention Assemblies (ASSE 1015)	Double Check Valve Backflow Preventers and Double Check Valve Backflow Preventers for Fire Protection Systems (B64.5 and B64.5.1)	5015	No
Double Check Detector Fire Protection Backflow Prevention Assemblies ASSE 1048	-----	5048	No
Pressure Vacuum Breaker Assembly (ASSE 1020)	Pressure Vacuum Breakers (B64.1.2)	5020	Yes
Reduced Pressure Principle Backflow and Reduced Pressure Fire Protection Principle Backflow Preventers (ASSE 1013)	Reduced Pressure Principle Backflow Preventers and Reduced Pressure Principle Backflow Preventers for Fire Protection Systems (B64.4.1)	5013	Yes
Reduced Pressure Detector Fire Protection Backflow Prevention Assemblies (ASSE 1047)	-----	5047	Yes
Spill Resistant Vacuum Breaker (ASSE 1056)	Spill Resistant Vacuum Breakers (B64.1.3)	5056	Yes

**TEST QUESTIONS:**

- 56.) Using Table 82.22-1, what is the ASSE test standard number for “pressure vacuum breaker assembly”?**
- 5015
  - 5048
  - 5020
  - 5013

- 57.) **What is the ASSE Standard number for “spill resistant vacuum breaker”?**
- a. 1020
  - b. 1013
  - c. 1047
  - d. 1056
- 58.) **For ASSE Test Standard 5015, the results are required to be sent to the Department.**
- a. True
  - b. False
- 59.) **Using Table 82.22-1, what is the ASSE test standard number for “double check backflow prevention assemblies”?**
- a. 5015
  - b. 5048
  - c. 5020
  - d. 5013
- 60.) **For ASSE Test Standard 5013, the results are required to be sent to the Department.**
- a. True
  - b. False
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