



**Guidance document**  
**SPS 382.50 Health Care and Related**  
**Facilities Hot Water Maintenance**  
**COPPER-SILVER ION DISINFECTION**

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<b>BACKGROUND</b>	Potable hot water in a hospital, community-based residential facility, inpatient hospice or nursing home shall include a method or device for disinfection of the hot water distribution system. The storing and circulation of hot water shall be either initiated at a minimum of 140°F with a return of a minimum of 124°F, chlorinated at 2 mg/L residual, or disinfected by another system approved by the department.
<b>GOALS OF RULES AND POLICIES</b>	The goal of this guidance document is to protect public health of inpatients within a health care facility by disinfection of the hot water supply system.
<b>APPLICABLE RULES</b>	Wisconsin Administrative Code: <a href="#">SPS 382.20</a> , <a href="#">SPS 382.40</a> , and <a href="#">SPS 382.50</a>
<b>APPLICABLE POLICY ON ALTERNATE</b>	The use of <b>copper-silver ionization</b> is “another disinfection system” approved by the department for compliance to SPS 382.50(3)(b)6.c. These devices cannot be used as a primary and/or sole means of disinfection. The installation of a water treatment device requires department plan review under SPS 382.20(1)(a). The following operational parameters must be observed:

**PROCEDURES**

**Criteria for Copper-Silver Ionization Water Treatment Devices**

1. The capacity of the Copper-Silver Ionization system shall comply on sizing criteria listed in SPS 382.40.
2. The Copper-Silver Ionization system should be installed upstream from the hot water source.
3. These devices must be served by electrical circuits protected by ground fault circuit interrupting (GFCI) outlets.
4. If these devices are installed on a water supply system constructed of metallic pipe, then a properly sized electrical bonding jumper must be installed such that the electrical continuity of the path to ground is reestablished.
5. It is recommended that a culturing protocol be established prior to the installation of a Copper-Silver Ionization system.
6. The cleaning frequency for the Copper-Silver Ionization system shall be based on the manufacturer's recommendations.
7. A contingency plan must be posted that provides the following information on system failure:
  - a. Name and phone number of Copper-Silver Ionization system manufacturer.
  - b. Name and phone number of individual familiar with system (installer, etc.).
  - c. O & M manual on troubleshooting system.
  - d. Precautions and instructions to provide temporary water.
8. Identical parallel Copper-Silver Ionization treatment systems may be provided for continuous water supply when one unit is out of service, or a bypass is allowable.

**Water Quality Monitoring**

1. Monitoring will be used to evaluate Copper-Silver Ionization treatment effectiveness.
2. Prior to startup, measure and record the residual copper in the domestic water distribution system. The residual level will be used when evaluating future copper tests.
  - a. The residual copper concentration must be 300-800 µg/L (optimum 400 µg/L).
  - b. The residual silver concentration must be 30–80 µg/L (optimum of 40 µg/L).
  - c. The residual concentrations of copper and silver must be maintained within the ranges stated above for a minimum of 24 hours and on an ongoing basis to achieve the bacterial reduction performance. The monitoring frequency will be as follows:
    - i. Commissioning Period: The copper, amperage, and voltage levels are to be documented and evaluated weekly by the manufacturer or manufacturer's representative to recommend adjustments necessary for optimizing system performance (after disinfection and flushing per SPS 382.40(8)(i)).
    - ii. Weekly copper testing after commissioning: The sample should be taken early in the day before water consumption has begun. Water system owners are encouraged, but not required, to routinely monitor effectiveness of the water treatment system.

**Special Considerations**

1. An oxidant demand study should be completed to determine an approximate chlorine dosage to obtain the required CT value as a disinfectant. Water system owners are encouraged to routinely monitor the effectiveness of the water treatment system.

<b>DOCUMENTATION</b>	<ol style="list-style-type: none"><li>1. A record shall be kept on dates of cleaning, replacement of components or parts, and when the device was shutdown and the reason for shutdown.</li><li>2. Department and Health representatives shall be provided access to the water treatment system and records upon request.</li></ol>
<b>NOTIFICATION</b>	The Department of Health Services is to be cc'd as part of this approval. Email to: David R. Soens, Director, <a href="mailto:david.soens@dhs.wisconsin.gov">david.soens@dhs.wisconsin.gov</a>
<b>DEPARTMENT TRACKING</b>	<p>The Division of Industry Services reserves the right to amend/revise this document as conditions arise making them necessary for code compliance and/or to protect public health and the waters of the state.</p> <p>For more information contact a Wisconsin Department of Safety and Professional Services Plumbing Consultant at 608-267-9421 or send an e-mail to <a href="mailto:DspsSbPlbgTech@wisconsin.gov">DspsSbPlbgTech@wisconsin.gov</a></p>