

# Guide to Power Piping State of Wisconsin SPS 341



**Purpose:**

This guide has been developed to supplement the State of Wisconsin Administrative Code SPS341 (Register May 2012 No. 677, effective date: 06/01/2012) Installation Requirements of Power Piping at Non-Nuclear facilities.

**Scope:**

This guide is provided for use by Manufacturer's, Installing Contractors (both within the State of Wisconsin, and out-of-state), and Certified Inspector's. This guide contains excerpts from the State of Wisconsin Administrative Code SPS 341, which are applicable to "Power Piping" and noted through reference to the "Administrative Code paragraph", and additional guidelines noted as "Additional Guideline" for compliance to ASME Code B31.1 "2010 edition as adopted in SPS341.10 (2) b".

**SPS 341.04 Definitions applicable to "Power Piping"**

- (1) (b) "Alteration," for power piping means a change that involves an extension or addition to, or involves the arrangement, type or purpose of, an existing installation or component.
- (4) "Authorized agent" means any of the following or their authorized representatives:
  - (a) A certified inspector who is referred to as enforcing this chapter, in a written contract between an inspection provider and the department.
  - (b) A first class city that has accepted the responsibility to administer and enforce this chapter (City of Milwaukee).
- (7) "Certified Inspector" means a person who holds a valid credential issued by the department under ch. SPS 305 as a certified boiler pressure vessel inspector or a certified in-service field inspector.

**Additional Guideline:** Inspector: Means an Inspector of the Department or Authorized Agent, Certified Inspector, or a National Board Commissioned Inspector for out-of-state Manufacturer's.

- (9) "Department" means the department of safety and professional services.
- (28) Power piping: means any steam piping system beyond the scope of section I of the ASME code and having a maximum allowable working pressure in excess of 15 psig, any hot water piping system beyond the scope of section I of the ASME code and subject to temperatures in excess of 250°F, or any piping system using an organic or synthetic fluid as a heat-transfer media and subject to temperatures in excess of 250°F.

(32) "Repair" means work and materials necessary to restore power piping to a safe operating condition.

### **SPS 341.16 Installation inspections (2)**

POWER PIPING INSPECTIONS. (a) Except as provided in par. (b), all power piping systems not covered by ASME code section I and required to be constructed in accordance with ASME B31.1, shall receive an installation inspection by the department or authorized agent or a certified inspector. (b) The inspections specified in par. (a) are not required for any of the following:

1. Power piping of 2 inches nominal pipe size and smaller.
2. Power piping replacements, modifications and alterations to existing systems and for new installations, any of which do not exceed 50 feet in length.
3. Underground power piping systems that are not located in a walk-in tunnel.

**Additional Guideline:** The Manufacturer or Installing Contractor must comply with ASME Code B31.1, even though registration and inspections are exempt for piping listed in SPS 341.16(2)(b) 1 through 3 above.

- (c) The installer shall notify the department or authorized agent or a certified inspector prior to the start of construction of the power piping system so that inspections may be arranged. The department or authorized agent or certified inspector shall be given a minimum of 5 business days notice to arrange for inspection.
- (d) A power piping inspection shall be made after the piping material is delivered to the job site and prior to the start of construction of the power piping system. The installer or an in-state shop fabricator shall complete department form SBD-5204-E prior to the inspection, and the form shall be retained at the job site for reference during the inspection. The department or authorized agent or certified inspector shall indicate acceptance of the power piping system design and installation by signing form SBD-5204-E. Power piping systems may not be insulated or placed in service without receiving that acceptance.
- (e) Prefabricated piping that is part of a power piping system shall be inspected at the fabrication shop by the department or authorized agent or a certified inspector or an active National Board commissioned inspector for out-of-state manufacturers. The shop fabricator shall provide a copy of the certified inspector's report or a copy of the completed department form SBD-5204-E to the installer at the job site verifying that the prefabricated piping complies with ASME B31.1. The owner or installer shall provide design calculations for the prefabricated piping if requested by an inspector.

**Note:** The Department forms required in this chapter are available for a nominal fee at telephone 800-DOC-SALES or Contact Through Relay, or at docsales@doa.state.wi.us, or at no charge at the Department's Web site at www.dps.wi.gov, through links to Safety and Buildings Division forms.

**Note:** certified inspectors may conduct whatever number of inspections are needed in addition to the inspections required in this section, to verify compliance with this chapter. Also, owners or users may request additional inspections beyond the number established by the certified inspector.

**Additional Guideline:** SPS 341.16, paragraphs address the need for inspection by an Inspector. The Inspector(s) to the best of their knowledge must verify the Manufacturer's and or Installing Contractors compliance to ASME Code B31.1, which depending on the scope of work may include but not limited to the following;

- Verify Calculations are available. **Note:** Calculations shall be provided by the Owner , Shop Fabricator, or by the Installing Contractor.
- Review of Drawings which have been approved by the Manufacturer or Installing Contractor as applicable, for the scope of work being performed.
- Examination of Materials for proper marking, including review of Material Test Reports and Certificates of Conformance, when required by ASME Code B31.1.
- Perform Inspections during fabrication as determined by assignment of Hold Points by the Inspector , or In-process Inspections as agreed to by the Manufacturer / Installing Contractor and the Inspector.
- Review of Welding Procedures, and Welding Procedure Qualification Records.
- Review of Welder / Welding Operator Qualification Records, Including Performance Continuity Records.
- Review of any required Nondestructive Examination Procedures.
- Review of Nondestructive Examination Personnel Qualification Records, including Written Practice if applicable.
- Review of any required Nondestructive Examination Reports, including Radiographic Film.
- Review of Post Weld Heat Treat Procedure.
- Review of Post Weld Heat Treatment Records.
- Final weld Inspection.
- Witness of the final pressure test.

### **SPS 341.46(1) Power piping**

GENERAL. Power piping shall be installed in accordance with ASME B31.1. The use of slip-on flanges shall be limited in applications to no higher than Class 300 primary pressure service rating. Slip-on flanges shall be installed with double fillet welds in accordance with ASME B31.1.

### **SPS 341.41 Installation registration(2)**

#### **POWER PIPING INSTALLATION REGISTRATION.**

(a) Except as provided in par. (b), the installation of any power piping system shall be registered with the department by the installer before the operation of the piping system. Registration shall be on form SBD-5204-E.

(b) Registration is not required for any of the following:

1. Power piping of 2 inches nominal pipe size and smaller.
2. Installations in cities of the first class if an installation registration form has been filed with the appropriate city official.
3. Underground power piping systems that are not located in a walk-in tunnel.
4. Power piping replacements, modifications and alterations to existing systems and for new installations, any of which do not exceed 50 feet in length.
5. Installations at one- or 2-family dwellings.

**Note:** Section SPS 341.16 (2) (c) requires the piping installer to notify the Department or authorized agent or a certified inspector at least 5 business days prior to the installation to schedule an inspection.

**Additional Guideline:** Additional guidance for completion of Power Piping Registration Form(s) SBD-5204-E is provided as follows;

- Power Piping Registration Form(s) shall be presented to the Inspector during the initial visit to the Manufacturer's facility, or Installing Contractors field site location. The Inspector shall note initial review of the form(s) by initials and date, which will be maintained by the Manufacturer or Installing Contractor until work has been completed. Upon satisfaction of work, the Inspector shall note final acceptance by completion of the Certified Inspector Blocks on the form(s), with; signature, employed by, date inspected, and State / NB cert. I.D. #.

- For large Projects involving one or more Manufacturer's of Pre-fabricated piping, and one or more Installing Contractors;
- Each Manufacturer shall complete one or more Power Piping Registration Form(s), and provide to the Installing Contractor for piping sent to the field location for installation.
- The Installing Contractor(s) shall complete one or more Power Piping Registration Form(s) for the field installation, and attach the appropriate Power Piping Form(s) furnished by the Manufacturer's of Pre-fabricated piping.
- For Projects where the Manufacturer is also the Installing Contractor;
- One or more Power Piping Registration Form(s) may be used for both the shop fabrication and field installation, when the Inspector is the same for both the shop and field activities.
- Separate Power Piping Form(s) shall be used for the shop activities, vs. the field activities, when the Inspector(s) are not the same individual.



# POWER PIPING / WELDED REFRIGERATION

## PIPING INSTALLATION REGISTRATION

Division of Industry Services  
P O Box 7302  
Madison, WI 53707-7302

Personal information you provide may be used for secondary purposes [Privacy Law s.15.04 (1) (m)].

Check type of system being installed:  Power Piping  Welded Refrigeration Piping

System Description: Include pipe sizes, total length of pipe welded and purpose of system (example: main steam, refrigerant etc.)

New  Replacement  Modification (Refrigeration system designed to -  ASHRAE-15 2007  ANSI/IIAR-2 2008

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

JOB# \_\_\_\_\_

User or Owner's Name	Contractor's Name (Shop fabricator or installing contractor)	
Street Address	Street Address	
City, State, Zip Code	City, State, Zip Code	
Telephone #	e-mail	Telephone # e-mail
Installation Designed By	Certified Inspector Signature	
	Employed By	
	Date Inspected	State/N.B.-Cert. ID. #
In Accordance With Natl. Std. # <input type="checkbox"/> ANSI / ASME B31.1 <input type="checkbox"/> ANSI / ASME B 31.5		

Maximum Design Pressure and Temperature of Piping System..... \_\_\_\_\_

Minimum Design Metal Temperature of Piping System..... \_\_\_\_\_

Test Pressure Applied..... Refrigeration: *High Side* \_\_\_\_\_ *Low Side* \_\_\_\_\_ Steam Piping: \_\_\_\_\_

Test Type:  Hydrostatic  Pneumatic  Other \_\_\_\_\_ Date Tested . . . . . \_\_\_\_\_

I certify this system was fabricated/installed and tested in accordance with Wisconsin Administrative Codes Chapter SPS 341/345 as applicable

Date piping completed	Fabricator/ installing contractor Signature and Title	For DSPS USE ONLY Date Installation Registered
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Shop fabricator and/or installing contractor must prepare this document and maintain at the shop and at field site until completion of fabrication. This form shall accompany shop fabricated piping to the field site.

Upon completion distribute as follows: "Form can be downloaded from the Web Site" [Boiler and Pressure Vessel forms](#)

Send original copy to Division of Industry Services (address above) - Send one to Owner - Retain one for your File