



GUIDELINES FOR REGISTRATION OF PRESSURE PIPING (P-standard included)

January 10, 2025

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Anyone, or any company, intending to design, fabricate, and/or install a piping assembly in Ontario should firstly refer to the Ontario Regulations made under the Technical Standards and Safety Act, 2000, which govern such actions. The Act and Regulations require compliance with the applicable CSA Standards, ASME and ANSI Codes and reference should also be made to these standards.

The following notes are intended to interpret and explain some of these requirements for design registration of a piping system. They are not a substitute for the governing documents themselves. Additional notes for registration of a standard design (P-standard) are explained in Annex A of this guideline.

Definitions

P-Number – An Ontario piping system design registration number that is specific to the final installation site.

PSTD- Number – An Ontario standard piping system design registration number (P-standard) that is specific to the name of a Piping Certificate of Authorization Holder, or to the name of a Trade Association taking responsibility for the design. These can be used at any final installation locations for designs that are routine in nature specific to the P-standard design. The piping installation according to P-standard designs still require inspections. **See Annex A.**

Submissions

Drawings (flow diagrams, piping and installation drawings) shall be submitted in electronic PDF format, together with the system specifications, a letter of application requesting registration. For preparation of design documents, prepayment and fee schedule, and how to submit an application, please refer to TSSA Client Portal and applicable guidelines at www.tssa.org.



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Drawings

General information required on these drawings shall include, but is not limited to, the following:

- Construction Code Information the latest Edition (i.e. ASME B31.1, B31.3 or B31.5) (excludes B31.9 Building Services Piping);
- Service Fluid Information (e.g. Air, Water, Steam or specific Gas or Liquid);
- Fluid Service Category (B31.3 only);
- Design Pressure;
- Design Temperature (minimum and maximum);
- Test Pressure;
- Type of Test (e.g. Pneumatic, Hydrostatic);
- Safety/Relief Valve Setting and Location; or
- Statement regarding overpressure protection.

Specifications

Pipe specification shall indicate, as a minimum, the following:

- Pipe line identification;
- Pipe size(s) and schedule (s);
- Pipe material (in accordance with ASME or ASTM material specification), including description, specification, type, grade as applicable;
- Fitting(s) classification, identification and rating (for details see TSSA's Guidelines for the Registration of Non-Nuclear Fittings in the Province of Ontario, also note Appendix "E" of the Guideline, for the requirements for flexible hose assemblies);
- Statement attesting that only registered fittings are used;
- Pipe joining methods and details (welding, brazing, threaded, or others to specify);



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- Non-destructive examination (NDE);
- Statement describing maximum support spacing and type, and anchor location.

General Information

To help expedite registration, only relevant drawings and specifications should be submitted; In selection of pipe and fitting wall thickness, Submitter may follow appropriate industrial guideline, Tables and charts, and a code calculation is not required. However, Submitter should be aware that, in the case of a high pressure and temperature, and/or special service involved, TSSA will determine if code calculations are required to submit in support of design registration.

For submissions that include a large number of drawings or systems, a line list and drawings list must be submitted with the package. For piping systems, which contain multiple services where some are subject to registration and others are not, those subject to registration must be highlighted. Also, additions or modifications to existing systems should be identified (highlighted) on the drawings or line list.

Letter of Application

The letter of application must include a return address, a contact name and telephone number, the location of the installation, contact information for the facility Owner, full legal name of piping Installer and QA certificate number, and a list of drawings submitted, existing piping registration (P-number or PSTD-number). Also, an estimate of the overall length of piping being installed should be indicated.

Piping Inspection for Installation in Ontario

Where manufacture is performed outside Ontario, and in any other province of Canada, the inspection shall be performed by a Canadian Provincial Boiler Inspector.

Where manufacture is performed outside Canada, inspection shall be performed by an Inspection Agency authorized and accepted by TSSA.

For field installation and manufacture performed in the Province of Ontario, the local TSSA Authorized Inspector must be scheduled and notified prior to commencement of shop fabrication or site installation. Please contact TSSA's Workforce Planning department to schedule an inspection.



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After inspection, a TSSA's Piping Installation and Test Data Report Form must be prepared and signed by the fabricator/ Installer and countersigned by the Authorized Inspector and submitted to the facility Owner/ user of the installation.

For piping Manufacturers/Installers accredited under Alternate Process for Pressure Piping Inspection, inspection may optionally, upon agreement with the facility Owner / user, follow the process requirements outlined in TSSA Advisory: BPV-001-23. An Alternate Piping Data Form shall be completed and signed by a Qualified Person.

Guideline References

The following documents are referenced as part of this guideline:

Safety Information Bulletin: SB00-2, Guide for Re-registration of Piping Systems

Safety Information Bulletin: SB00-7, Guide for the Scope of Services Requiring

Registration and Inspection of Pressure Piping Systems

Safety Information Bulletin: SB02-02, Requirements for Manufacturers and Installers

of Pressure Piping Parts and Systems

Safety Information Bulletin: SB06-01, Refrigeration Piping Fabrication, Installation,

Repair or Alteration

Advisory: BPV-001-23, Alternate Process for Pressure Piping Inspection in Ontario

Annex A:

Registration for a standard design(P-standard)

General

Subject to discretion and acceptance of TSSA review engineers, piping design intended to be installed in multiple facility sites, may be alternatively registered under a P-standard registration. Requirements for drawings and specifications for a P-standard registration are the same as a design registration to an Owner / user's specific site. Submitter may apply for a design registration as P-standard if the design meets all conditions stipulated in this Annex A. During the Client Portal application process where the Installation Site information is not available, Submitter shall use the address under the account been set up for the Piping Certificate of Authorization Holder, or Trade Association.



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Application

A P-standard registration applies to shop manufactured piping skids that may contain multiple fluid services, or a field installation piping system (or piping segments) for single fluid service. Field installation piping systems for multiple fluid services will be registered with a separate PSTD-number for EACH fluid service. The piping design shall consider 'generic' for various Owner / user's site operation conditions, neither according to an Owner / user's design specification.

Restrictions by Service Conditions

If the design or service condition falls under one of the following categories, the design submission will **NOT** be eligible for P-standard registration:

- Refrigeration piping systems where refrigerant is A2, A3, B1, B2, B3, B2L;
- Refrigeration piping systems where refrigerant is A1 or A2L and the design pressure is above 700 psi;
- Boiler proper piping;
- Boiler external piping or non-boiler external piping with
 - Superheated steam; or
 - Steam design pressure over 250 psi;
- Piping systems designed to B31.3 Normal Fluid service and other Piping Systems designed per B31.1 where any of the following conditions apply:
 - Design pressure at coincident temperature is above the listed pressure - temperature rating for class 300 flange for applicable material and class designation in ASME B16.5 standard.
 - Non-buried gaseous systems with Nominal Pipe Size over 12".
 - Piping systems designed for B31.3 Category M, Elevated temperature, and high-pressure fluid service as defined in B31.3.
 - Lethal service systems as per Owner / user's classification.
 - An initial service leak test employed in lieu of the hydrostatic or pneumatic leak test.