ASME A112.18.6-2017/CSA B125.6-17

CSA Group

Flexible water connectors

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Preface

This is the second edition of ASME A112.18.6/CSA B125.6, *Flexible water connectors*. It supersedes the previous edition published in 2009.

The following changes appear in this edition:

a) updated reference to the latest edition of NSF 61;
b) revised working temperatures;
c) new low lead requirements;
d) updated fill valve thread requirements; and
e) updated ice maker pressure drop requirements.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This Standard was prepared by the ASME/CSA Joint Harmonization Task Group on Plumbing Fittings, under the jurisdiction of ASME Standards Committee on Plumbing Materials and Equipment and the CSA Technical Committee on Plumbing Fittings. The CSA Technical Committee operates under the jurisdiction of the CSA Strategic Steering Committee on Water Management Products, Materials, and Systems. This Standard has been formally approved by the ASME Standards Committee and the CSA Technical Committee. This Standard was approved as an American National Standard by the American National Standards Institute on June 19, 2017.

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ASME A112.18.6-2017/CSA B125.6-17
Flexible water connectors

1 Scope

1.1

This Standard covers flexible water connectors for use in water supply systems under

a) continuous pressure in accessible locations; and
b) intermittent pressure in recreational vehicles only.

1.2

In this Standard, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the Standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

1.3

SI units are the units of record in Canada. In this Standard, the yard/pound units are shown in parentheses. The values stated in each measurement system are equivalent in application; however, each system is to be used independently. Combining values from the two measurement systems can result in non-conformance with this Standard.

All references to gallons are to U.S. gallons.

For information on the conversion criteria used in this Standard, see Annex B.

2 Reference publications

This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below, including all amendments published thereto.

ASME (The American Society of Mechanical Engineers)

A112.19.5-2005
Trim for Water-Closet Bowls, Tanks, and Urinals

B1.1-2003 (R2008)
Unified Inch Screw Threads (UN and UNR Thread Form)

B1.20.1-1983 (R2006)
Pipe Threads, General Purpose, Inch

B1.20.3-1976 (R2003)
Dryseal Pipe Threads, Inch

B1.20.7-1991 (R2003)
Hose Coupling Screw Threads, Inch

B16.18-2001 (R2005)
Cast Copper Alloy Solder Joint Pressure Fittings

B16.22-2001 (R2005)
Wrought Copper and Copper Alloy Solder Joint Pressure Fittings

B16.26-2006
Cast Copper Alloy Fittings for Flared Copper Tubes

ASME (The American Society of Mechanical Engineers)/CSA Group
ASME A112.18.1-2012/CSA B125.1-12
Plumbing supply fittings

ASSE (American Society of Sanitary Engineering)/ASME (The American Society of Mechanical Engineers)/CSA Group
ASSE 1002-2015/ASME A112.1002-2015/CSA B125.12-15
Anti-siphon fill valves for water closet tanks

ASSE (American Society of Sanitary Engineering)
1061-2006
Performance Requirements for Removable and Non-Removable Push-Fit Fittings

ASTM International (American Society for Testing and Materials)
D6284-09
Standard Test Method for Rubber Property — Effect of Aqueous Solutions with Available Chlorine and Chloramine

ANSI (American National Standards Institute)/ISA (Instrumentation, Systems, and Automation Society)
75.02-1996
Control Valve Capacity Test Procedures

NSF International/ANSI (American National Standards Institute)
61-2015
Drinking Water System Components — Health Effects

NSF/ANSI 372-2016
Drinking Water System Components — Lead content

SAE International (Society of Automotive Engineers)
J512 (1997)
Automotive Tube Fittings

3 Definitions and abreviations

3.1 Definitions

The following definitions shall apply in this Standard:

Accessible — readily serviceable or readily replaceable.

Flexible water connector (flexible connector) — a non-rigid tube or hose with end connections used for connecting a water supply to a fixture, fitting, or appliance.

Push-fit fitting — a mechanical fitting that joins pipes or tubes and achieves a seal by pushing the mating pipe or tube into the fitting by hand. The fitting can be removable or non-removable.

3.2 Abbreviations

The following abbreviations shall apply in this Standard:

NPT — National Pipe Taper

NPTF — National Pipe Taper Fuel and Oil

UNS — Unified National Special

4 General requirements

Note: *The provisions of this Standard are not intended to prevent the use of alternative materials or manufacturing methods for products that meet the intent of this Standard.*

4.1 Toxicity and lead content

4.1.1

Flexible connectors used for delivery of drinking water shall comply with the applicable requirements of NSF/ANSI 61.

4.1.2

Solder and fluxes shall not exceed 0.2% lead content by mass. Metal alloys shall not exceed 3.7% lead content by mass.

4.1.3

Flexible connectors intended to convey or dispense water for human consumption through drinking or cooking shall not contain a weighted average lead content in excess of 0.25% when evaluated in accordance with the test method specified in NSF/ANSI 372.

4.2 Materials

Note: *Annex A provides information on the effects of aqueous chloramine on elastomers.*

4.2.1
Copper alloy components shall contain at least 56% copper.

4.2.2
Stainless steel components in contact with water shall be made from 300 or 400 series stainless steel. Ferrous steel parts not in contact with water shall be protected by a coating that complies with Clause 4.3.

4.3 Coatings
Coatings shall be tested in accordance with and meet the requirements of Clause 5.2 of ASME A112.18.1/CSA B125.1.

4.4 Connections

4.4.1 General
Connections shall comply with the performance requirements of this Standard (see Clause 5) and, as applicable, Clauses 4.4.2 to 4.4.7.

4.4.2 Pipe threads
NPT or NPTF threads shall comply with the L1 gauge requirements of ASME B1.20.1 or ASME B1.20.3 using a tolerance of ± 1 turn. Other pipe threads shall comply with ASME B1.20.1.

4.4.3 Hose end threads
Hose end threads shall
a) be compatible with hose end threads that comply with ASME B1.20.7; and
b) comply with the requirements of this Standard.

4.4.4 Fill valve threads
Fill valve threads shall comply with ASSE 1002/ASME A112.1002/CSA B125.12, except that fill valve threads may be Class 2B.

4.4.5 Solder connections
The length and diameter of the joint section of a solder joint end for connection to copper tube or copper tube fittings shall be as specified in ASME B16.18 or ASME B16.22. Flexible connectors for soldering to the water distribution system shall not contain soldered assemblies.

4.4.6 Flare connections
Flare connections shall
a) be compatible with flare connections that comply with ASME B16.26; and
b) comply with the requirements of this Standard.

4.4.7 Compression connections
Compression connections shall
a) be compatible with compression connections that comply with SAE J512; and
b) comply with the requirements of this Standard.