



**Summary of Substantive Changes
between the 2016 and the 2010 edition including Update No. 1, dated March 2011
editions of
CSA B602 “Mechanical Couplings for Drain, Waste,
and Vent Pipe and Sewer Pipe”**

Presented to the IAPMO Standards Review Committee on March 13, 2017

General: The change to this standard may have an impact on currently listed products. The scope of the standard was expanded to include Type 4 expansion joints and additional sections were added and the applicable existing sections were revised to include Type 4 expansion joints. In addition to inclusion of Type 4 joints in the standard the major changes are:

- Added a limitation for storage of Type 3 couplings to be subjected to the compression set test (see Section 5.1.4)
- Removed requirement for bolt or fastener material and changed the requirement for compliance of metallic components made of sheet material (see Section 5.2)
- Revised the steps in the restrained joint tightness test procedure for Type 3 couplings (see Section 6.3)
- Added additional requirement for the pipe end preparation for the unrestrained joint tightness test (see Section 6.6)
- Clarified the products to be marked and added additional marking requirements (see Section 7)

Section 1, Scope: Expanded the scope of the standard to include Type 4 expansion joints as follows:
1.2

This Standard specifies requirements for mechanical couplings of the following types:

- a) Type 1: couplings that are used to join pipes of the same or different materials or sizes and that incorporate a centre stop and an external shield.*
- b) Type 2: couplings that are used to join pipes of the same or different materials or sizes, but for which a centre stop and/or shear ring are allowed but not required.*
- c) Type 3: couplings used to join hubless cast iron pipe and fittings. Such couplings are composed of a stainless steel shield, a clamp assembly, and an elastomeric sealing component that complies with ASTM C564.*
- [d\) Type 4: elastomeric bellows expansion joint couplings used to join pipe of the same or different materials or sizes incorporating pipe stops.](#)*

Section 2, Reference publications: Updated the referenced standards and added the following ASTM standard:

ASTM International (American Society for Testing and Materials)

[A240/ A240M-13c](#)

[Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications](#)



Section 3, Definitions: Added a definition for Pipe Stop as follows:

The following definitions shall apply in this Standard:

Pipe stop - an integral component designed to prevent the pipe or fitting from protruding into the bellows section of the coupling.

Section 5.1.4, Compression set/stress relaxation: Added a limitation for storage of Type 3 couplings to be subjected to the compression set test as follows:

The compression set test for elastomeric sealing components of Type 3 couplings shall be conducted as follows:

a) Store all vulcanized test specimens or product samples to be tested at least 24 h but not more than 72 h.

b) Only plied samples from the finished elastomeric sealing components shall be used.

c) Test specimens shall be oven aged for 22 ± 0.2 h at 70 ± 1 °C (158 ± 2 °F).

d) Method A of ASTM 0395 shall be used for materials with a hardness of 90 IRHD or greater. The compression set shall be 12% maximum.

e) Method B of ASTM 0395 shall be used for materials with a hardness less than 90 IRHD. The compression set shall be 25% maximum.

Note: See Clause 5.1.1.3 for timing of Type 3 coupling tests.

Section 5.2, Metallic components: Removed requirement for bolt or fastener material and changed the requirement for compliance of metallic components made of sheet material as follows:

Metallic components shall be made of 300 Series stainless steel and shall comply with ~~ASTM A167~~ [ASTM A240/A240M](#) for sheet material ~~and ASTM A493 for bolt or fastener material~~. Stainless steel shall contain not less than 16% chromium and not less than 6% nickel. Bolt and fastener materials shall not be made from copper-bearing alloys.

Section 6.3, Joint tightness test (deflected) — Restrained: Revised the steps in the test procedure for Type 3 couplings as follows:

6.3.3 Test procedure for Type 3 couplings

The deflected joint tightness test shall be conducted as follows (see Figure 1):

(a) Join two sections of randomly selected pipe with a coupling in accordance with the manufacturer's instructions and recommended torque. Each pipe section shall be between 300 and 1500 mm (12 and 60 in) long.

Notes:

(1) The band screws should be tightened in an alternating manner until the manufacturer's recommended torque is reached.

(2) A calibrated torque wrench should be used for reading the torque.

(b) Support one pipe section (pipe section 1) on two blocks, the first being placed near the uncoupled end of the pipe section and the second being placed immediately adjacent to the coupling.

(c) Firmly restrain pipe section 1 in position.

~~*(d) Deflect the other pipe section (pipe section 2) in any direction to a 5° angle.*~~

d) Fill the assembly with water and ensure that all air is expelled.



- ~~(e) Fill the assembly with water and ensure that all air is expelled.~~
 - e) Gradually apply an internal hydrostatic pressure of 30 kPa (4.3 psi).
 - ~~(f) Gradually apply an internal hydrostatic pressure of 30 kPa (4.3 psi).~~
 - f) Deflect the other pipe section (pipe section 2) in any direction to a 5° angle.
 - (g) Maintain the test pressure for 5 min and then check for leakage.
- Note: See Clause 5.1.1.3 for timing of Type 3 coupling tests.

Section 6.6, Joint tightness test - Unrestrained (Type 3 couplings only): Added additional requirement for the pipe end preparation as follows:

6.6.2 Pipe-end preparation

The ends of the pipe sections used for the test specified in Clause 6.6.3 shall be machined to the correct diameters. The test assembly shall consist of a maximum outside diameter (OD) pipe connected to a minimum OD pipe with diameters as specified in CAN/CSA-B70. Pipe ends shall not have spigot beads. Plain pipe ends shall have 0.38 mm (0.015 in) deep grooves machined circumferentially around them at 3.18 mm (1/8 in) intervals down the pipe section for a length equal to the length covered by the coupling. The tool used to machine the grooves shall have a 60° inclined angle and shall cut the pipe from a perpendicular position. The surface between the grooves shall be a lathe turned surface of 125 RMS.

Added additional sections to include specific testing for Type 4 expansion joints as follows:

6.7 Elastomeric bellows expansion joint (Type 4)

6.8 Expansion joint tests (Type 4 only)

Section 7, Markings: Clarified the products to be marked and added additional marking requirements as follows:

7.1

Each ~~major component~~ expansion joint shall be permanently marked with "CSA B602" and the component manufacturer's name or registered trademark in the country of destination (the marking will be adequate identification of the manufacturer if it readily identifies the manufacturer to the end-user of the product after installation).

In addition, coupling assemblies shall be permanently marked with the following:

- (a) the nominal pipe size (NPS); and*
- (b) the pipe material(s) for which the coupling is designed.*

7.2

In addition, expansion joints shall be marked with the following:

- a) the words "DWV Expansion Joint";*
- b) the intended direction of flow (if applicable); and*
- c) the words "vertical installation only".*