



**Summary of Substantive Changes
between
CSA U.S. No.3-1992 “Requirements for Excess Flow Valves”
and
ANSI Z21.93-13/CSA 6.30-13 “Excess flow valves for natural and LP gas with
pressures up to 5 psig”**

Presented to the IAPMO Standards Review Committee on October 7, 2013

General: There are significant technical changes to this standard that will have an impact on currently listed products. The substantive changes are:

- Changed the scope of the standard to
 - reduce the intended valve use pressure from 250 psig to 5 psi and
 - increase the temperature range to -20 to 150°F (-29 to 66 °C) from 32 to 125°F (0 to 52 °C) (see Sections 1.3 and 1.5)
- Added equipment and data required to be furnished by the manufacturer (see Section 4.2)
- Added requirements for valves with flare fittings (see Section 4.5)
- Added additional requirements for information to include with the instructions (see Section 4.9)
- Revised the performance requirements (see Section 5)
- Changed the required programs and test procedures for manufacturing quality assurance (see Section 6)

Section 1, Scope:

Section 1.3: Reduced the intended valve use pressure from 250 psig to 5psi as follows:

1.3 This standard applies 1-1.3 These requirements apply to valves for use with natural, manufactured and mixed gas, liquefied petroleum (LP) gases, and LP gas-air mixtures at operating pressures not to exceed 5 psi (35 kPa) ~~in excess of 250 psig.~~

Section 1.5: Increased the temperature range to -20 to 150°F (-29 to 66 °C) from 32 to 125°F (0 to 52 °C)

Section 4.2, Equipment and data to be furnished by the manufacturer: Included additional equipment and data required to be furnished by the manufacturer as follows:

c) Minimum and maximum operating pressure (in appropriate units, inches of water, pounds per square inch, and metric equivalents);

d) Rated trip flow at minimum operating pressure ~~closing flow rate with 1,000 Btu per cubic foot, 0.54 specific gravity gas;~~

e) Maximum pressure drop at trip flow; ~~Maximum operating pressure differential.~~

~~f. Mounting classification (see 2.1.1).~~

f) Maximum flow capacity;

g) Maximum pressure drop at maximum flow capacity;

h) Flow Capacity at 0.5 in wc pressure drop; and



[i\) Mounting position\(s\).](#)

Section 4.3, Connections:

- Removed former Table 1, *Minimum Thread Length and Length to Shoulder*,
- retained reference to ANSI/ASME B1.20.1, *Standard for Pipe Threads, General Purpose (Inch)*, and
- added reference to ANSI/ASME B1.20.3, *Standard for Dryseal Pipe Threads (Inch)*.

Section 4.4, Resistance to tampering: Added new requirement to include means to prevent tampering.

Section 4.5, Excess flow valves equipped with flare fittings: Added requirements for flare fittings and including Table 1, Minimum Wrench Grip Dimensions for Excess Flow Valves Equipped with Flare Fittings, and Table 2, Flare Fitting Dimensions.

Section 4.9, Instructions:

Section 4.9.1, General instructions; Added additional requirements for the minimum information included in the installation and operation instructions.

Section 4.9.2: Added the requirement to include complete step-by step instructions to address applications such as valve location, sizing and selection.

Section 4.9.3, Additional Instructions: Added the requirement to include a list of limitations in the instructions.

Section 4.10, Marking: Added description of marking types by class and included additional requirements for Class III markings

Section 5: Performance

Section 5.1.2: Increased the test temperature range to -20 to 150°F (-29 to 66 °C) from 32 to 125°F (0 to 52 °C)

Section 5.3.3 Bending movement: Changed the weight applied to create the static load for all pipe sizes and increased the number of times to apply the load from one to three times.

Section 5.4, Leakage

Section 5.4.3 Internal Seat Leakage; Added performance requirements for non-bypass excess flow valves.

Section 5.5 Trip flow and flow capacity

Section 5.5.2: Changed the performance requirement for the range of flow rate that the valve can trip from, not more than 1.10 or less than 0.80 of rated trip flow, to between 1 and 1.4 times the rated trip flow.

Section 5.5.3: Added the requirement that the manufacturer specified maximum flow capacity shall not be greater than 90% of the rated trip flow.



Section 5.5.4: Changed the

- temperature from “manufacturer-specified” to $77 \pm 10^{\circ}\text{F}$ ($25 \pm 5.5^{\circ}\text{C}$), and
 - pressure from “maximum operating pressure” to “5 in wc”,
- and added an additional step to calculate flow capacity.

Section 5.6, Bypass flow rate: Decreased the allowable bypass flow rate from 10 cubic feet per hour to 2.5 SCFH at up to 2 psi and up to 5 SCFH between 2 and 5 psi.

Section 5.7, Reset: Increased the torque required to manually reset the valve and changed the temperature and pressure of the test conditions.

Section 5.14, Marking material adhesion and legibility: Added an accelerated aging test for labels that are not recognized as UL 969 compliant.

Section 6, Manufacturing and production tests: Changed the required programs and test procedures for manufacturing quality assurance.

The following performance tests were added:

Section 5.3.4, Impact test

Section 5.8, Snap acting load test

Section 5.10, High temperature performance

Section 5.11, Season cracking

Section 5.12, Salt spray

Section 5.13, LP-gas compatibility test