

ANSI STANDARDS *PLAYBOOK*





WHAT IS ANSI?

ANSI is the American National Standards Institute. Established in 1918, ANSI serves as a vital hub for coordinating voluntary standards and conformity assessment processes in the United States. Their mission is centered on boosting the competitiveness of American businesses on a global scale, while also improving the quality of life within the U.S. This is achieved through the promotion and facilitation of voluntary consensus standards and conformity assessment systems, ensuring their integrity and effectiveness.

ANSI's role is not to create standards itself but to establish a framework for fair standards development and quality conformity assessment systems. By coordinating the process and ensuring transparency and inclusivity, ANSI helps various stakeholders collaborate effectively in developing standards that meet the needs of industries and society.

WHAT IS CSA AND ITS RELATIONSHIP TO ANSI?

CSA Group, formerly known as the Canadian Standards Association, collaborates closely with ANSI to develop and harmonize standards across various domains, promoting safety, efficiency, and international market compatibility. With expertise in 57 areas, CSA Group plays a crucial role in setting standards that align with ANSI's framework, facilitating smoother trade and manufacturing processes between the United States and Canada. This partnership not only reduces trade barriers but also enhances product safety and quality, benefiting industries and consumers on both sides of the border. Together, CSA Group and ANSI contribute to a more streamlined and effective standards ecosystem, fostering innovation and competitiveness in the global marketplace.

WHAT IS ANSI Z21.18/CSA 6.3?

Understanding the ANSI Z21.18/CSA 6.3 standard is crucial for ensuring the safety and efficiency of gas appliance pressure regulators. This standard meticulously outlines the requirements for regulators, ensuring they are constructed from new materials and are suitable for a variety of gases, including natural and manufactured gases, as well as liquid petroleum gas (LPG).

The classification of inlet pressures allows for precise selection based on the specific needs of an appliance, whether it's for a main burner or a pilot burner, or even domestic gas ranges. Adherence to this standard is just the first step; additional testing tailored to the appliance's design is necessary to guarantee optimal performance and safety.

It's a comprehensive approach that underscores the importance of precision and care in the manufacturing and application of gas appliance pressure regulators. Compliance with such standards ensure that the devices are not only effective, but also contribute to the overall safety of gas-operated appliances.

The historical practice of using appliance regulators as line pressure regulators has indeed changed with the implementation of the ANSI Z21.80/CSA 6.22 standard. According to this standard, appliance regulators should no longer serve as line pressure regulators.

WHAT IS ANSI Z21.80/CSA 6.22?

The ANSI Z21.80/CSA 6.22 standard is critical for ensuring the safety and efficiency of line pressure regulators used in various gas systems. It outlines the requirements for regulators to be constructed from new, unused parts and materials, ensuring reliability and performance.

These regulators are designed to fit into gas piping systems situated between the service regulator and the gas utilization equipment, which could include a wide range of appliances and machinery.

The standard covers regulators used with natural gas, manufactured gas, mixed gases, LPG, and LP gas-air mixtures, reflecting its comprehensive approach to safety and requires lock-up style regulators..

Additionally, it specifies that these regulators can function individually or be paired with overpressure protection devices to prevent potential hazards due to excess pressure. With detailed testing and examination criteria, the ANSI Z21.80/CSA 6.22 standard serves as a benchmark for quality and safety in the industry.

Line pressure regulators are used to reduce the high pressure of gas from the service regulator to a lower pressure that is suitable for the gas appliances. ANSI Z21.80 specifies the test and examination criteria for line pressure regulators, either individual or in combination with over pressure protection devices, intended for application in natural gas piping systems between the service regulator and the gas appliance(s).

The standard applies to regulators rated at 2, 5, or 10 psig with maximum outlet pressure of 1/2 or 2 psig (depending on the intended application). The standard also covers topics such as design, construction, performance, marking, and installation of line pressure regulators.

Maximum Outlet Pressure Inlet Pressure

Rate I	Class I	Class II
2 psi (1 3.8 kPa)	1/2 psi (3.5 kPa)	
5 psi (34.5 kPa)	1/2 psi (3.5 kPa)	2 psi (1 3.8 kPa)
10 psi (68.9 kPa)	1/2 psi (3.5 kPa)	2 psi (1 3.8 kPa)

As of May 1, 2002, CSA Group requires that all line pressure regulators above 2 psig must leave the factory pre-assembled and leak-tested.

LINE PRESSURE REGULATOR VS APPLIANCE REGULATOR STANDARDS

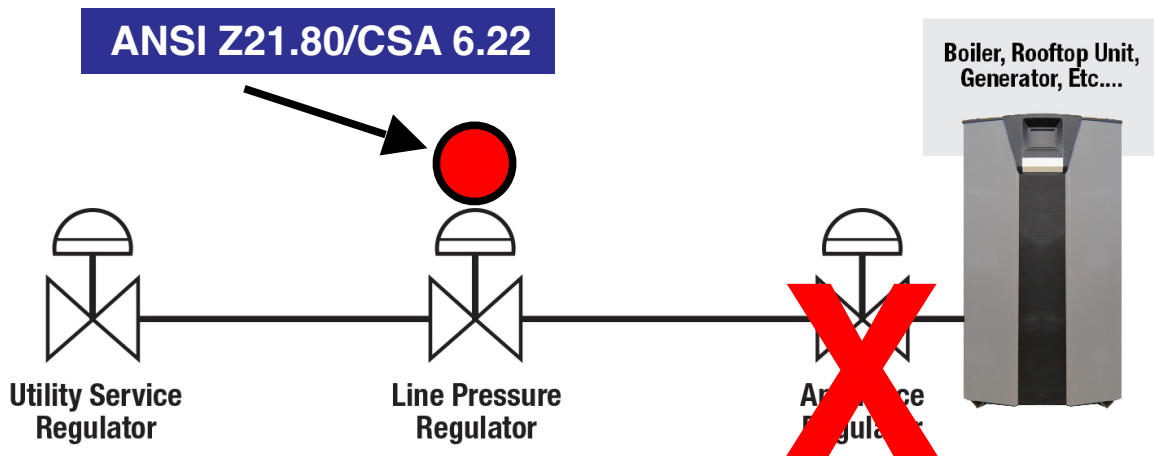
The current standards for appliance regulators are ANSI Z21.18/CSA 6.3, while line pressure regulator standards are ANSI Z21.80/CSA 6.22.

Historically, appliance regulators were used as line pressure regulators before ANSI Z21.80/CSA 6.22 was developed. With the implementation of the newer and revised standards, appliance regulators **should no longer be used as line pressure regulators**.

This rule has been confusing given that many longtime favorite appliance regulators were used as line pressure regulators.



Overpressure protection devices shall be provided to prevent the pressure in the piping system from exceeding that value that would cause unsafe operation of any connected and properly adjusted appliances.



In non-ANSI/CSA applications we can still provide over pressure protection.

PRESSURES FROM 2 TO 10 PSIG REQUIRE AN OPD

