

Welded and Seamless Steel Dissolved Acetylene Gas Cylinders — Specification

Welded and seamless steel dissolved acetylene gas cylinders are specialized containers designed to store acetylene gas, commonly used in welding and metal cutting applications. These cylinders come in two main types i.e. welded, which have seams created during the welding process, and seamless, which are formed without any seams. Seamless cylinders are generally more durable due to their lack of welded joints. Both types incorporate a porous material inside, which serves to safely absorb and disperse acetylene gas. This porous material helps prevent explosions by distributing the gas in a controlled manner, allowing it to be safely dissolved within the cylinder.

Consumers expect a high level of safety and performance requirements from these acetylene gas cylinders, as they are critical for industrial and manufacturing processes that involve welding and cutting. Quality factors include durability, gas containment reliability, and resistance to extreme conditions. For example, a good acetylene gas cylinder must endure high temperatures, vibration, and pressure fluctuations without leaking or rupturing. In addition, the porous material inside must be consistent and efficient in absorbing acetylene, as any flaws in this area could lead to dangerous conditions during use. Industries also look for rigorous testing and certifications that guarantee the safety and performance of these cylinders.

The Indian Standard IS 7312:2018 addresses these quality expectations by specifying comprehensive requirements for materials, design, and construction, as well as mandatory testing and marking guidelines. Aligned with the international ISO 3807:2013 standard, this standard has evolved since its original 1974 publication and during subsequent revisions included both welded and seamless cylinder types. IS 7312:2018 requires manufacturers to conduct various tests, such as tensile, hydrostatic, and pneumatic leakage tests, Technical requirements for Acetylene Porous Filling Mass and Solvent, Elevated Temperature Test, Vibration Test, Backfire Test, and Bonfire test etc. These thorough testing protocols ensure that the cylinders meet stringent safety and performance criteria, ultimately delivering reliable and safe acetylene gas storage to consumers.