

Understanding your business



Ask the expert

Air Products explains the importance of the new international quality standard – EN ISO 14175:2008 – Welding Consumables – Gases and gas mixtures for fusion welding and allied processes - and what it means for the welding industry.

What is EN ISO 14175:2008?

EN ISO 14175:2008 is a new international quality standard for gases and gas mixtures used in welding and other related applications. The standard is internationally recognised and is designed for use by manufacturers and users of shielding, backing/purging, processing and assist gases for welding, cutting and materials processing applications.

Building on the former EN 439:1994, EN ISO 14175:2008 has extended the scope of the standard to 'classify and designate' the gases used in welding applications according to the gas components used and the way they react when used. This has been done to make the standard more user-friendly and in particular, to make it easier for users when selecting gases for specific applications.

What exactly has changed following the introduction of the new standard?

Among the main changes, welding gases should now be produced according to the updated tolerances and purity criteria, thus giving the user an assurance that gases with a particular 'symbol' fall within the specified range. In some cases, there have been significant changes to the way gas components are classified, due to their chemical reactivity. For example, gases classified under sub-group 'M', which denotes mixtures that have an oxidising effect on metals, fall into one of three sub-groups (M1, M2 and M3), each with their own specified and now extended range of tolerances. This makes it easier for the user to select the appropriate gas for their application, taking account of their metallurgical reactivity as well as standard tolerances and purity.

To ensure compliance with the new standard, gas cylinders should now be clearly marked with full classification and designation criteria. Whereas previously gas cylinders only had to state that they were EN 439:1994 compliant, under EN ISO 14175:2008, cylinders have to display a set of symbols denoting the main group and sub-group that the gas mixture belongs to and each gas constituent in order of volume. For example, using the new standard, the designation for a shielding gas containing Argon with 30% Helium, such as Alumaxx® Plus, is ISO 14175 - I3 – ArHe - 30.

For users, referring to the designation provided on each cylinder will give them detailed information about the product and where to refer to its tolerances, purity and reactivity information, at the same time as providing an assurance of manufacturing quality.

Does the new standard affect welding procedures?

Yes, it does. For example, the quality standard for steels, EN ISO 15164-1:2004 + A1:2008 – Specification and qualification of welding procedures for metallic materials, states that shielding gases should be selected in accordance

with EN ISO 14175:2008 and that qualification is restricted to the symbol of the gas according to EN ISO 14175:2008. This means that the user can only alter the composition of shielding gas within the range specified by the symbol of its classification, without affecting the validity of the welding procedure qualification. EN ISO 15614 does however restrict this range further for MIG, MAG and GSFCW processes, by stating that CO₂ content shall not exceed 10% of that used to qualify the procedure test.

When was EN ISO 14175:2008 introduced?

EN ISO 14175:2008 was approved by the European Committee for Standardisation on 7 February 2008 and will fully supersede EN 439:1994 from September 2008.

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If you would like to Ask the Expert a specific question or for further advice on quality standards, please email apukinfo@airproducts.com.