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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 46082.1-2025

**Safety devices for gas welding equipment - Part 1: Flame
arrestor**

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 1 of GB/T 46082 "Safety devices for gas welding equipment". GB/T 46082 has been published in the following parts.

--- Part 1: Flame arresters;

--- Part 2: Other devices.

This document is modified to adopt ISO 5175-1:2017 "Safety devices for gas welding equipment - Part 1: Devices with flame arresters".

Compared with ISO 5175-1:2017, this document has many structural adjustments. The

structural number comparison table between the two documents is attached.

Record A.

This document has many technical differences compared to ISO 5175-1:2017.

A list of these technical differences and their reasons is given in Appendix B.

The following editorial changes have been made to this document.

--- Change the name of the standard to "Safety devices for gas welding equipment Part 1: Flame arresters";

--- Added unit conversion content and converted some gas pressure units into MPa;

--- Change "safety device" in the document to "flame arrester";

--- Adjust the clause numbers of the technical requirements in Table 1 so that they correspond to the clause numbers of the test methods in accordance with the test sequence;

--- Added "Appendix A Structure numbering of this document compared with ISO 5175-1:2017";

--- Added "Appendix B Technical differences between this document and ISO 5175-1:2017 and their reasons".

Introduction

GB/T 46082 "Safety devices for gas welding equipment" is the product standard for safety devices for gas welding equipment, which establishes the safety devices for gas welding equipment.

Technical requirements and test methods for equipment.

GB/T 46082 is intended to consist of the following parts.

--- Part 1: Flame arresters. The purpose is to standardize the design and materials, technical requirements and test methods of flame arresters.

--- Part 2: Other devices. The purpose is to standardize the design and materials, technical requirements, Test method.

--- Part 3: Low-pressure acetylene decomposition blocker. The purpose is to standardize the technology of low-pressure acetylene decomposition blocker below 0.15MPa Requirements and test methods.

This document is intended to address the functional reliability and stability of flame arrester safety devices for gas welding equipment during design, production and application.

Provide a basis for the safe application of gas welding process.

Safety devices for gas welding equipment - Part 1: Flame arresters

1 Scope

This document specifies the terms and definitions, design and materials, Technical requirements, test methods, factory tests, instructions, and markings. Flame arresters are used in gas storage tanks, confluence systems, or pressure reducers in gas circuit systems.

downstream outlet of the welding torch and upstream inlet of the welding torch.

This document does not specify the specific installation location of the flame arrester in the gas system.

This document does not apply to other safety devices without flame arresters specified in GB/T 46082.2.

This document does not apply to premixed gas piping systems of oxygen and fuel gas or air and fuel gas. For example, gas mixers or water electrolysis hydrogen Gas line downstream of the oxygen mixed gas generator.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

GB/T 3375 Welding Terminology GB/T 5107 Hose connectors for welding, cutting and related process equipment for gas welding equipment GB/T 40337 Gas welding and related process equipment - Air tightness (GB/T 40337-2021, ISO 9090:2019, MOD) GB/T 40371 Gas welding equipment - Materials for welding, cutting and related process equipment (GB/T 40371-2021, ISO 9539.

2010, MOD)

GB/T 46082.2 Safety devices for gas welding equipment Part 2: Other devices (GB/T 46082.2-2025, ISO 5175-2:2017, MOD) GB/T 46073 Gas welding equipment Quick connectors with shut-off valves for welding, cutting and related process equipment (GB/T 46073-2025, ISO 7289:2018, MOD)

3 Terms and Definitions

The terms and definitions defined in GB/T 3375 and the following apply to this document.

flame arrester flamearrestor A device that prevents flames from spreading upstream in gas pipelines.

Example. Sintered powder metal fire stop tube has good thermal conductivity, high porosity, small pore size (large surface area), which can extinguish the flame.

Examples of typical flame arrester structures.