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

GB 47289-2026

Fire emergency rescue equipment - Leak sealing tools

消防应急救援装备 堵漏器材

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1 Scope

GB 47289-2026 is the Chinese national standard covering the kit a crew uses to stop a chemical leak - the plugs, wedges, bags and magnetic patches applied to a breached tank or drum, and the materials and pressures they must hold against an unknown fluid. A mandatory standard, first edition, in force from 1 April 2027, with the transfer and detection equipment standards of the same series. It was issued on 31 March 2026 and takes effect on 1 April 2027, as a first edition. The document is under the responsibility of the National Fire and Rescue Administration. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document defines the terminology and definitions of leak-stopping equipment used in fire emergency rescue, and specifies the models, technical requirements, inspection rules, and markings. Packaging, transportation, and storage are described, along with the test methods. This document applies to the design, manufacture, and inspection of

leak-stopping equipment used in fire emergency rescue operations for handling hazardous chemical spills.

4 Classification and Model

4.1 Leak sealing equipment is classified according to its main material as follows:

- a) Standard type (for sealing leaks in non-flammable and non-explosive locations) leak sealing equipment;
- b) Explosion-proof leak sealing equipment (used to seal flammable and explosive leaks).

4.2 Leak-sealing equipment is classified according to the sealing method as follows:

- a) Bundled leak-sealing equipment;
- b) Sleeve-type leak-sealing equipment;
- c) Injection-type leak sealing equipment;
- d) Adhesive-type leak sealing materials;
- e) Magnetic pressure sealing devices;
- f) Air-expanding leak sealing equipment.

4.3 The model designation method for leak-sealing equipment is as follows:

5 Technical Requirements

5.1 Structure and Appearance The surface of the leak-sealing equipment should be smooth and free from defects such as cracks, sharp edges, burrs, and dents that could affect operation and performance. The metal of the leak-sealing equipment... The surface of the components should have anti-corrosion properties.

5.2 Quality The weight of a single leak-sealing device should not exceed 20 kg. A carrying case (including the devices inside) containing multiple individual leak-sealing devices of different specifications... The total weight should not exceed 30 kg.

5.3 Temperature adaptability Except for bundled types, the minimum operating temperature of leak-sealing equipment should not exceed -20°C, and the maximum operating temperature should not be less than 80°C. When using... Within the specified temperature range, the leak-sealing equipment should function normally.

5.4 Leak-stopping function Leak-sealing equipment, based on its structure and working mechanism, should be capable of sealing one or more pressurized containers (tanks), pipelines, valves, flanges, etc. Function to prevent leakage of body or liquid. After successful sealing and removal of the removable leak-sealing equipment, no leakage should occur at the sealed site within 72 hours.

5.5 Emergency Leak Sealing Time When the leaking medium reaches the nominal sealing pressure and adequate preparations are made, the emergency sealing time for various types of leak-sealing equipment should meet the following requirements. According to the provisions of Table 2.

5.6 Explosion-proof performance Leak-sealing equipment used in hazardous areas should be explosion-proof.

5.7 Oil resistance The sealing material on the contact surface of the leak-sealing equipment should be resistant to 92% sulfur dioxide. It consists of fastening devices, etc.

5.11.2 Component Functions

5.11.2.1 Leak-sealing module It should be able to install sealing gaskets of different shapes and sizes according to the actual situation of the leak, and be suitable for sealing leaks such as holes and gaps. Work is blocked.

5.11.2.2 Ropes It should be able to connect the leak-sealing module, locking block and tensioner, and after tensioning, it should be able to make the leak-sealing module fit tightly against the leak.

5.11.2.3 Hydraulically assisted tensioner It should be possible to tighten the rope using hydraulic assistance.

5.11.2.4 Hydraulic manual pump It should be able to provide the necessary hydraulic power for hydraulically assisted tensioners.

5.11.2.5 Locking Block It should be able to work with a hydraulically assisted tensioner to achieve reliable locking of the rope.

5.11.2.6 Mechanically Assisted Tensioner It should be able to tighten the rope through mechanical assistance and should have the function of locking the rope with bolts.

5.11.2.7 Sealing gasket The tool kit should be equipped with both of the following types of sealing materials.

a) Finished sealing gaskets. Sealing gaskets with a nominal applicable pipe diameter range should be provided;

b) Sealing blocks. Sealing blocks that can be cut on-site shall be provided, and their material and physical properties shall not be inferior to those of the finished gaskets.

5.11.2.8 Hinged Leak-Sealing Clamp It should be constructed from hinged aluminum alloy chain links, allowing for quick disassembly and assembly of some chain links to adjust the working length according to the leakage point, and enabling the installation of compatible... Sealing gasket.

5.11.2.9 Fastening devices It should be able to tighten and fix the hinged leak-sealing

clamp.

5.11.3 Locking performance The hydraulic assisted tensioner and locking block should reliably lock the rope in place. After testing according to 6.11.2, the hydraulic assisted tensioner and rope... The relative slip distance between them should not exceed 10mm, and the hydraulic tensioner should not suffer damage that would affect its subsequent use.

5.12 Sleeve-type Leak Sealing Equipment The external metal materials and other metal components of the sleeve-type leak-sealing device, after undergoing the test specified in GB/T 10125 for 48 hours, shall have their external appearance... The surface should show no obvious signs of corrosion.

5.13 Injection-type leak sealing equipment The rated working pressure of high-pressure pumps, high-pressure hoses, and caulking guns should not be less than twice the nominal sealing pressure. The fixtures must pass the pressure test specified in 6.13. After testing, the pressure drop within 5 minutes should not exceed 8% of the rated pressure, and there should be no leakage under the nominal sealing pressure.

5.15 Magnetic Pressure Leak Sealing Equipment

5.15.1 It should be compatible with common leak bodies and leak points.

5.15.2 A magnetic switch should be provided so that the magnetic force can be turned on or off as needed during use.

5.16.1 Sealing performance After the test pressure of the plugging bladder reaches

1.5 times the nominal plugging pressure (or nominal plugging force) of the plugging equipment, the pressure is maintained for 10 minutes, and the internal pressure of the bladder is... The pressure drop should not exceed 10% of the test pressure.

5.16.2 Reliability After the plugging bladder is continuously inflated to the nominal plugging pressure (or nominal plugging force) and then deflated 30 times, at the nominal plugging pressure (or... There should be no gas leakage under the nominal sealing force.

6 Test Methods

6.1 Test Conditions The pressure display used in the tests described in this document shall have a measurement accuracy of no less than

0.5 grade, and the measuring accuracy of the inner diameter and length gauges used shall not be lower than [a certain grade]. At 0.1mm.

6.2 Structural and visual inspection Inspect by visual inspection.

6.3 Quality Inspection From a set of samples of the same specifications, select the heaviest