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

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**Periodic inspection and evaluation of composite cylinders for
breathing apparatus**

呼吸器用复合气瓶定期检验与评定

(English Translation)

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Foreword

All the technical contents of this standard is mandatory.

The reference to the standard ISO 11623 "fiber composite cylinders Periodic inspection and testing" and the US Compressed Gas Association CGAC-6.2 "Fiber Increased inspection and evaluation of the appearance of the high-pressure gas cylinders, "the part.

The Standard Appendix A, Appendix B, Appendix C, Appendix D, Appendix E and F are informative appendices.

This standard by the National Standardization Technical Committee cylinder (SAC/TC31) and focal points.

This standard was drafted. Shanghai Eagle Safety Equipment Co., Ltd., Dalian Boiler and Pressure Vessel Inspection Institute, Fushun City Boiler Pressure Vessel Inspection Institute, Hong Technology Co., Ltd. Shanxi.

1 Scope

This standard specifies the respirator with aluminum liner fully wrapped carbon fiber composite cylinders (hereinafter referred to as composite cylinders) Periodic inspection and evaluation Basic methods and technical requirements.

This standard applies to nominal water capacity not exceeding 12L, the nominal working pressure of not more than 30MPa, filling breathing gas for use temperature Range of -40 °C ~ 60 °C can be repeated inflatable mobile composite cylinders.

This standard does not apply to vehicles with composite cylinders.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 970.1 round die Part 1. round die and round die holder type and size (GB/T 970.1-2008, ISO 2568. 1988, MOD) GB/T 3464.1 Machine and hand taps - Part 1. General shank machine and hand taps (GB/T 3464.1-2007, ISO 529:1993, MOD) GB/T 3934 common thread gauge technical conditions (GB/T 3934-2003, ISO 1502:1996, MOD) GB/T 9251 Test methods for hydraulic cylinders GB 12135 Periodic inspection station technical conditions GB/T 12137 Test method for airtightness of cylinders GB/T 13005 cylinders term GB 15382 cylinder valves General technical requirements TSGZ7001 special equipment inspection agency approval rule Gas Cylinder Safety Supervision

3 Terms and Definitions

GB/T 13005 and established the following terms and definitions apply to this standard.

Aluminum alloy materials for the interior, the exterior continuous carbon fiber impregnated with resin along the circumferential and longitudinal winding and cured as a carrier layer Composite cylinders.

Composite cylinder surface roughness and other objects repeated friction and a surface-induced damage. Performance composite cylinder surface roughness and Paul Sheath or reduce wound layer thickness and the like.

Separating the fiber bundle wound layer caused by the impact between the outer surface of

the wound separation or separation layer and the metal liner between the fiber bundle itself.

It showed whitish scar, subsurface hollow signs and the like.

Crack winding layer due to fall or blunt objects hit and caused by delamination or scratched, and metal liner deformation.

The maximum amount of deformation of the cylinder volume measured by subtracting the residual deformation.

1.1 times the average grant amount of elastic deformation, marked cylinders tag.

4.1 Inspection agency

4.1.1

Periodic inspection of composite inspection agency, should have the conditions meet the requirements of GB 12135 and press TSGZ7001 by country House special equipment safety supervision and administration department for approval.

4.1.2

The inspection agency must be equipped with test performance composite cylinders of special test instruments and equipment. If the cylinder inside glimpse of light, low-power magnifying glass, Electronic balance, can be inserted into the endoscope composite cylinders, rectangular device, meter stick, depth sounder, in line with GB/T 3934 of M18 x 15-6H threaded plug Regulation, M18 x 1.5-6h thread ring gauge or in compliance with the appropriate standards, and the threaded cylinder valve adapted to other specifications threaded plug, threaded ring and the like.

4.2 Periodic Inspection

Periodic inspection cycle 4.2.1 composite cylinders are generally inspected once every three years.

4.2.2

During use, if found that composite cylinders have serious corrosion damage or doubts about its safety and reliability, should be carried out in advance test.

4.2.3

stock or disable more than one inspection cycle composite cylinders shall be tested prior to enabling.

4.3 Test Project

Composite cylinders Periodic inspection items include visual inspection, internal inspection, bottle inspection, hydrostatic testing, internal drying cylinder valve and air tightness test Test.

5.1 Record

5.1.1

Only by checking the registration and inspection of composite cylinders manufacturing marks mark. And "composite cylinders visual inspection evaluation form" (see Appendix A) on Detailed records of the following. the use of gas cylinder units, test dates, number of cylinders, cylinder volume of water, nominal working pressure, date of manufacture, test pressure Due date, thread size and so on.

5.1.2

without obtaining national special equipment safety supervision and management department of the manufacturing license of manufacturing production of composite cylinders, manufacturing and inspection mark Key inspection mark or incomplete items will not be blurred examination nor documented registration composite cylinders, press scrap.

Over the design life of composite cylinders 5.1.3 upon registration shall not test, press scrap.

5.1.4

Early inspection of composite cylinders shall identify the cause and make records.

5.2 composite cylinder media should be air, oxygen or nitrogen-oxygen gas mixture, for unknown media bottle, cylinder valve can not open the gas cylinder should be Seized bottles were stored in order to be properly handled separately. After the filling of oxygen cylinders, the test should be strictly forbidden to do tests or oil degreasing.

5.3 Dismantling the cylinder valve

If there are composite cylinders of compressed gas, should slowly open the cylinder valve, deflate, until confirmed bottle gas pressure and environmental pressure a when delivered, the composite cylinders on the cylinder clamping fixture, with appropriate methods remove the cylinder valve.

5.4 Composite inner and outer cylinder surface cleaning

Available neutral detergent and water temperature not exceeding 60 °C clean water to clean the surface of the composite inner and outer cylinders of dirt, corrosion, loose table Surface protection layer and other surface debris impede inspection.

5.5 Composite cylinder external cleanup

Inspectors should be able to see the entire outer surface of the composite cylinders. If the sticker to cover up damage to composite cylinders or suspected loss Injury, should be removed sticker. Suspicious injuries signs include. signs or stickers scratched, obviously