
Plinske jeklenke - Visokotlačne jeklenke za zemeljski plin za pogon motornih vozil, vgrajene na vozilo - Dopolnilo A1 (ISO 11439:2013/DAM 1:2020)

Gas cylinders - High pressure cylinders for the on-board storage of natural gas as a fuel for automotive vehicles - Amendment 1 (ISO 11439:2013/DAM 1:2020)

Gasflaschen - Hochdruck-Flaschen für die fahrzeuginterne Speicherung von Erdgas als Treibstoff für Kraftfahrzeuge - Änderung 1 (ISO 11439:2013/DAM 1:2020)

Bouteilles à gaz - Bouteilles haute pression pour le stockage de gaz naturel utilisé comme carburant à bord des véhicules automobiles - Amendement 1 (ISO 11439:2013/DAM 1:2020)

Ta slovenski standard je istoveten z: EN ISO 11439:2013/prA1

ICS:

23.020.35	Plinske jeklenke	Gas cylinders
43.060.40	Sistemi za gorivo	Fuel systems

SIST EN ISO 11439:2013/oprA1:2020 **en,fr,de**

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DRAFT AMENDMENT

ISO 11439:2013/DAM 1

ISO/TC 58/SC 3

Secretariat: BSI

Voting begins on:
2020-10-01Voting terminates on:
2020-12-24

Gas cylinders — High pressure cylinders for the on-board storage of natural gas as a fuel for automotive vehicles

AMENDMENT 1

Bouteilles à gaz — Bouteilles haute pression pour le stockage de gaz naturel utilisé comme carburant à bord des véhicules automobiles

AMENDEMENT 1

ICS: 43.060.40; 23.020.35

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Reference number
ISO 11439:2013/DAM 1:2020(E)

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CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
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Published in Switzerland

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This document was prepared by Technical Committee ISO/TC 58, *Gas cylinders*, Subcommittee SC 3, *Cylinder design*.

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Gas cylinders — High pressure cylinders for the on-board storage of natural gas as a fuel for automotive vehicles

AMENDMENT 1

2 Normative references

Eliminating dates on standards so that latest versions are required:

ASTM D522, Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings

ASTM D1308, Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes

ASTM D2794, Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)

ASTM D3170, Standard Test Method for Chipping Resistance of Coatings

ASTM G154, Standard Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials

NACE/TM 0177, Laboratory Testing of Metals for Resistance to Sulfide Stress Cracking and Stress Corrosion Cracking in H₂S Environments

7.5.2.2 Material tests for steel cylinders

a) Tensile test

Steel from a finished cylinder shall meet the requirements of the tensile test in A.1.

b) Impact test

Steel from a finished cylinder shall meet the requirements of the impact test in A.2.

c) Sulfide stress cracking resistance test

If the upper limit of the specified tensile strength for the steel exceeds 950 MPa, the steel from a finished cylinder shall meet the requirements of the sulfide stress cracking resistance test in A.3. The actual tensile strength of the steel according to A.1, shall not exceed the value obtained by more than 5%, on the samples tested for SSC resistance.

7.6.2.1 Batch tests

Tests shall be carried out on each batch of cylinders:

a) on one cylinder, one hydrostatic pressure burst test in accordance with A.12.

b) on a further cylinder, or a heat treated witness sample representative of a finished cylinder:

1) a check of the critical dimensions against the design (see 6.4.1);

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- 2) *one tensile test in accordance with A.1; the test results shall satisfy the requirements of the design (see 6.4.1);*
- 3) *for steel cylinders, three impact tests in accordance with A.2; the test results shall satisfy the requirements specified in A.2;*
- 4) *when a protective coating is a part of the design, a coating batch test in accordance with A.24. Where the coating fails to meet the requirements of A.24, the batch shall be 100 % inspected to remove cylinders with similar defective coatings. The coating on all defectively coated cylinders may be stripped and recoated. The coating batch test shall then be repeated.*

8.2.3.1 Resins

The material for impregnation may be thermosetting or thermoplastic resins. Examples of suitable matrix materials are epoxy, modified epoxy, polyester and vinyl ester thermosetting plastics, and polyethylene and polyamide thermoplastic material.

The glass transition temperature of the resin material shall be determined in accordance with ASTM D3418, and shall not be less than 102 °C.

8.5.2.2 Material tests for steel linersa) *Tensile test*

Steel from a finished liner shall meet the requirements of the tensile test in A.1.

b) *Impact test*

Steel from a finished liner shall meet the requirements of the impact test in A.2..

c) *Sulfide stress cracking resistance test*

If the upper limit of the specified tensile strength for the steel exceeds 950 MPa, the steel from a finished liner shall meet the requirements of the sulfide stress cracking resistance test in A.3. The actual tensile strength of the steel according to A.1, shall not exceed the value obtained by more than 5%, on the samples tested for SSC resistance.

8.5.2.11 High temperature creep test

In designs where glass or aramid fibre has a load sharing application, one cylinder shall be tested in accordance with A.18.

8.6.3.1 Liner tests

d) *on one liner, one hydrostatic pressure burst test in accordance with A.12.*

e) *on a further liner, or heat treated sample representative of a liner:*

- 1) *a check of the critical dimensions against the design (see 6.1.3.1);*
- 2) *one tensile test in accordance with A.1; the test results shall satisfy the requirements of the design (see 6.1.3.1);*
- 3) *three impact tests in accordance with A.2; the test results shall satisfy the requirements specified in A.2;*

All liners represented by a batch test that fails to meet the specified requirements shall follow the procedures specified in 8.9.

9.2.3.1 Resins

The material for impregnation may be thermosetting or thermoplastic resins. Examples of suitable matrix materials are epoxy, modified epoxy, polyester and vinyl ester thermosetting plastics, and polyethylene and polyamide thermoplastic material. The glass transition temperature of the resin material shall be determined in accordance with ASTM D3418, and shall not be less than 102 °C.

9.5.2.2 Material tests for steel liners

a) Tensile test

Steel from a finished cylinder or liner shall meet the requirements of the tensile test in A.1.

b) Impact test

Steel from a finished liner shall meet the requirements of the impact test in A.2.

c) Sulfide stress cracking resistance test

If the upper limit of the specified tensile strength for the steel exceeds 950 MPa, the steel from a finished liner shall meet the requirements in A.3. The actual tensile strength of the steel according to A.1, shall not exceed the value obtained by more than 5 %, on the sample tested for SSC resistance.

9.5.2.11 High temperature creep test

In designs where glass or aramid fibre has a load sharing application, one cylinder shall be tested in accordance with A.18.

9.6.2 Liner tests

On a liner, or heat treated sample representative of a finished liner:

- a) a check of the critical dimensions against the design (see 6.1.3.1);
- b) one tensile test in accordance with A.1; the test results shall satisfy the requirements of the design (see 6.1.3.1);
- c) for steel liners, three impact tests in accordance with A.2; the test results shall satisfy the requirements specified in A.2;

All liners represented by a batch test that fails to meet the requirements specified shall follow the procedures specified in 9.9.

10.2.2 Resins

The material for impregnation may be thermosetting or thermoplastic resins. Examples of suitable matrix materials are epoxy, modified epoxy, polyester and vinyl ester thermosetting plastics, and polyethylene and polyamide thermoplastic material.

The glass transition temperature of the resin material shall be determined in accordance with ASTM D 3418, and shall not be less than 102 °C.