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**Tubeless tyres — Valves and  
components —**  
**Part 2:**  
**Clamp-in tubeless tyre valve-test  
method**

*Pneumatiques sans chambre — Valves et composants —*

*Partie 2: Méthodes d'essai pour les valves à visser*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#).

The committee responsible for this document is Technical Committee ISO/TC 31, *Tyres, rims and valves*, Subcommittee SC 9, *Valves for tube and tubeless tyres*.

This first edition of ISO 14960-2, together with ISO 14960-1, cancels and replaces ISO 14960:2004, which has been technically revised.

ISO 14960 consists of the following parts, under the general title *Tubeless tyres — Valves and components*:

- *Part 1: Test methods*
- *Part 2: Clamp-in tubeless tyre valve-test method*

# Tubeless tyres — Valves and components —

## Part 2:

## Clamp-in tubeless tyre valve-test method

### 1 Scope

This part of ISO 14960 establishes minimum specifications for clamp-in tubeless tire valves. A clamp-in valve is an assembly of a valve stem, valve core, valve cap, rubber grommet or O-ring, hex nut, and ring washer which conforms to ISO 9413.

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 9413, *Tyre valves — Dimensions and designation*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

### 3 Test methods and performance requirements

#### 3.1 Valve core

##### 3.1.1 Valve core specifications

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Valve cores installed in clamp-in valve assemblies (see [Figure 1](#)) shall have a pin height tolerance of  $+0,25$   
 $-0,90$  mm, relative to the valve mouth, and a standard torque of 0,23 N m to 0,34 N m.

##### 3.1.2 Room temperature test

###### 3.1.2.1 Test procedure

- Immerse the valve assembly vertically in clean water at  $23\text{ °C} \pm 5\text{ °C}$  not more than 25 mm below the surface of the water (see [Figure 1](#)).
- Check for leakage using a pressure of  $35\text{ kPa} \pm 5\text{ kPa}$ .

###### 3.1.2.2 Performance requirement

The leak rate shall not be greater than  $0,2\text{ cm}^3/\text{min}$ .

##### 3.1.3 Low temperature test

###### 3.1.3.1 Test procedure

- Depress and release the valve core pin once after a 24 h minimum exposure at  $-40\text{ °C} \pm 3\text{ °C}$ ; maintain pressure at  $180\text{ kPa} \pm 15\text{ kPa}$ . See [Figure 1](#).

- b) Immerse the valve assembly vertically in ethanol or methanol at  $-40\text{ °C} \pm 3\text{ °C}$  not more than 25 mm below the surface with the pressure maintained at  $180\text{ kPa} \pm 15\text{ kPa}$ .
- c) Begin leak detection after a 1 min soak period.
- d) Increase pressure to  $1,4\text{ MPa} \pm 0,15\text{ MPa}$ .
- e) Begin leak detection after 1 min soak period.

### 3.1.3.2 Performance requirement

The leak rate shall not be greater than  $0,2\text{ cm}^3/\text{min}$ .

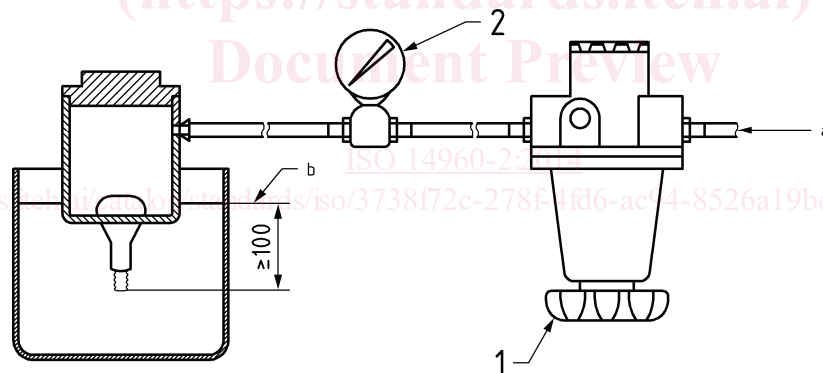
### 3.1.4 High temperature test

#### 3.1.4.1 Test procedure

- a) Depress and release the valve core pin once after a 48 h minimum soak period at  $100\text{ °C} \pm 3\text{ °C}$ ; maintain pressure at  $1,4\text{ MPa} \pm 0,15\text{ MPa}$ . See [Figure 1](#).
- b) Check for leakage with  $66\text{ °C} \pm 3\text{ °C}$  clean water at not more than 25 mm above the valve mouth, with the pressure maintained at  $1,4\text{ MPa} \pm 0,15\text{ MPa}$ .

#### 3.1.4.2 Performance requirement

The leak rate shall not be greater than  $0,2\text{ cm}^3/\text{min}$ .



#### Key

- 1 regulator
- 2 gauge
- a Air supply.
- b Liquid level.

**Figure 1 — Valve seal test set-up**

### 3.1.5 Valve core torque test

#### 3.1.5.1 Test procedure

With a calibrated torque wrench, torque the core on the valve twice the maximum specified torque. Remove the core and examine for separation of the swivel from the barrel, and barrel gasket from the barrel.