SLOVENSKI STANDARD
SIST ISO 12219-7:2018

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Notranji zrak v cestnih vozilih - 7. del: Določevanje vonja notranje opreme v notranjem zraku v cestnih vozilih in v zraku preskusnih komor z olfaktometrijo

Interior air of road vehicles - Part 7: Odour determination in interior air of road vehicles and test chamber air of trim components by olfactory measurements

Air intérieur des véhicules routiers - Partie 7: Détermination des odeurs dans l'air intérieur des véhicules routiers et dans les chambres d'essai d'air des composants de finition par des mesurages olfactifs

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INTERNATIONAL STANDARD

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Interior air of road vehicles —

Part 7: Odour determination in interior air of road vehicles and test chamber air of trim components by olfactory measurements

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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).

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).

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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 146, *Air quality*, Subcommittee SC 6, *Indoor air*.

A list of all the parts in the ISO 12219 series can be found on the ISO website.

Introduction

Volatile and semi-volatile organic compounds (VOCs and SVOCs) are widely used in industry and may be emitted by many everyday products and materials. They have attracted attention in recent years because of their impact on indoor air quality. After homes and workplaces, people spend a lot of time in their vehicles. It is important to determine the material emissions of interior parts and to reduce them to an acceptable level, if required. Therefore, it is necessary to obtain comprehensive and reliable information about the types of organic compounds in the indoor air of vehicles and their concentrations as well as an odour impression.

Since olfactory assessment is based on very subjective impressions, it is necessary to make this subjectivity comparable by means of a standardized procedure. This document describes a controlled olfactory examination of the interior air of road vehicles and the chamber air of trim components.

This document adopts the general requirements already specified in the International Standards of the ISO 16000 series which deal with the determination of odour emissions from building products using test chambers (see ISO 16000-28) and with sensory testing of indoor air (see ISO 16000-30), but uses different odour evaluation schemes developed for the automotive industry.

A risk assessment should be carried out to clarify that no harmful compounds are present in the room. In some countries, an ethics committee may require this.

Interior air of road vehicles —

Part 7: Odour determination in interior air of road vehicles and test chamber air of trim components by olfactory measurements

1 Scope

This document specifies a standardized and objective process to analyse and determine the olfactory behaviour of components, semi-finished products and materials fitted in the interior of road vehicles. The odour determination is either performed by using samples from the interior air of road vehicles or from emission test chamber air. This document describes an olfactory screening method based on different scales for the olfactory assessment which are described in the annexes. Other olfactory assessments, e.g. according to ISO 16000-28, are also possible but are not the focus of this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 8589, *Sensory analysis — General guidance for the design of test rooms*

ISO 12219-1, *Interior air of road vehicles — Part 1: Whole vehicle test chamber — Specification and method for the determination of volatile organic compounds in cabin interiors*

ISO 12219-4:2013, *Interior air of road vehicles — Part 4: Method for the determination of the emissions of volatile organic compounds from vehicle interior parts and materials — Small chamber method*

ISO 16000-28:2012, *Indoor air — Part 28: Determination of odour emissions from building products using test chambers*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12219-1, ISO 12219-4, ISO 16000-28 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1.1
odour
pleasant or unpleasant smell caused by chemical compounds emitting to indoor air from a building product or material, automotive part or whole vehicle interior

[SOURCE: ISO 16000-28:2012, 3.1.1, modified — The phrase "automotive part or whole vehicle interior" has been added.]

3.1.2
sensory odour panel
group of trained or untrained assessors performing the sensory assessment of the odour emission from building products or materials, automotive parts or whole vehicle interior

[SOURCE: ISO 16000-28:2012, 3.1.9, modified — The phrase "automotive parts or whole vehicle interior" has been added.]

3.1.3
panel member
<odour determination>person who is accepted to assess the *odours* (3.1.1)

[SOURCE: ISO 16000-28:2012, 3.1.11]

3.1.4
panel leader
person whose primary duties are to manage panel activities and recruit, train and monitor the assessors

[SOURCE: ISO 16000-28:2012, 3.1.10]

3.1.5
panel selection
procedure to determine which persons are qualified to serve as *panel members* (3.1.3)

[SOURCE: ISO 16000-28:2012, 3.1.5]

3.1.6
sensory adaptation
temporary modification of the sensitivity of a sense organ due to continued and/or repeated stimulation, which is reversible

[SOURCE: ISO 5492:2008, 2.6, modified — The phrase "which is reversible" has been added.]

3.1.7
sensory fatigue
form of *sensory adaptation* (3.1.6) in which a decrease in sensitivity occurs

[SOURCE: ISO 16000-28:2012, 3.1.6]

3.1.8
anosmia
lack of sensitivity to some olfactory stimulus due to physiological defects, which is not reversible

[SOURCE: ISO 5492:2008, 2.32, modified]

3.1.9
clean air
odourless air

[SOURCE: ISO 16000-28:2012, 3.1.23]

3.1.10
odourlessness
odour (3.1.1) assessed by the panel as being below the required value

[SOURCE: ISO 16000-28:2012, 3.1.29]

3.1.11
background concentration
concentration of a specific *volatile organic compound* (3.1.24) (or group of volatile organic compounds) measured in the small chamber outlet or the whole vehicle test chamber

[SOURCE: ISO 12219-4:2013, 3.6, modified — The phrase "or the whole vehicle test chamber" has been added.]

3.1.12
sampled air
air collected for subsequent measurement

3.1.13
air exchange rate
ratio of the volume of *clean air* (3.1.9) brought into the *test chamber* (3.1.20) hourly and the free test chamber volume measured in identical units

[SOURCE: ISO 16000-28:2012, 3.1.14]

3.1.14
outlet air flow rate
air volume per time at the chamber outlet

Note 1 to entry: The outlet air flow rate is expressed as volume per second.

[SOURCE: ISO 16000-28:2012, 3.1.15]

3.1.15
air velocity
air speed over the surface of the *test specimen* (3.1.23)

[SOURCE: ISO 16000-28:2012, 3.1.16]

3.1.16
supply air
sum of all gaseous volume flows conducted into the small chamber

[SOURCE: ISO 12219-4:2013, 3.12, modified — Note 1 to entry has been deleted.]

3.1.17
area specific air flow rate
ratio between the supply air flow rate and the area of the *test specimen* (3.1.23)

[SOURCE: ISO 16000-28:2012, 3.1.17]

3.1.18
air mixing
thorough intermingling of the air volume to be investigated

3.1.19
trim component
component produced for incorporation in a vehicle cabin