SVENSK STANDARD
SS-ISO 19453-5:2018

Fastställd/Approved: 2018-04-09
Publicerad/Published: 2018-04-10
Utgåva/Edition: 1
Språk/Language: engelska/English
ICS: 43.040.10

SWEDISH STANDARDS INSTITUTE

Vägfordon – Miljökrav och miljöprovning för el- och elektronikutrustning i drivsystem för elfordon – Del 5: Kemiska belastningar (ISO 19453-5:2018, IDT)

Road vehicles – Environmental conditions and testing for electrical and electronic equipment for drive system of electric propulsion vehicles – Part 5: Chemical loads (ISO 19453-5:2018, IDT)

Standarder får världen att fungera

SIS (Swedish Standards Institute) är en fristående ideell förening med medlemmar från både privat och offentlig sektor. Vi är en del av det europeiska och globala nätverk som utarbetar internationella standarder. Standarder är dokumenterad kunskap utvecklad av framstående aktörer inom industri, näringsliv och samhälle och befrämjar handel över gränser, bidrar till att processer och produkter blir säkrare samt effektiviserar din verksamhet.

Delta och påverka
Som medlem i SIS har du möjlighet att påverka framtida standarder inom ditt område på nationell, europeisk och global nivå. Du får samtidigt tillgång till tidig information om utvecklingen inom din bransch.

Ta del av det färdiga arbetet
Vi erbjuder våra kunder allt som rör standarder och deras tillämpning. Hos oss kan du köpa alla publikationer du behöver – allt från enskilda standarder, tekniska rapporter och standard-paket till handböcker och onlinetjänster. Genom vår webbtjänst e-nav får du tillgång till ett lättnavigerat bibliotek där alla standarder som är aktuella för ditt företag finns tillgängliga. Standarder och handböcker är källor till kunskap. Vi säljer dem.

Utveckla din kompetens och lyckas bättre i ditt arbete
Hos SIS kan du gå öppna eller företagsinterna utbildningar kring innehåll och tillämpning av standarder. Genom vår närhet till den internationella utvecklingen och ISO får du rätt kunskap i rätt tid, direkt från källan. Med vår kunskap om standarders möjligheter hjälper vi våra kunder att skapa verklig nytta och lönsamhet i sina verksamheter.

Vill du veta mer om SIS eller hur standarder kan effektivisera din verksamhet är du välkommen in på www.sis.se eller ta kontakt med oss på tel 08-555 523 00.

Standards make the world go round

SIS (Swedish Standards Institute) is an independent non-profit organisation with members from both the private and public sectors. We are part of the European and global network that draws up international standards. Standards consist of documented knowledge developed by prominent actors within the industry, business world and society. They promote cross-border trade, they help to make processes and products safer and they streamline your organisation.

Take part and have influence
As a member of SIS you will have the possibility to participate in standardization activities on national, European and global level. The membership in SIS will give you the opportunity to influence future standards and gain access to early stage information about developments within your field.

Get to know the finished work
We offer our customers everything in connection with standards and their application. You can purchase all the publications you need from us - everything from individual standards, technical reports and standard packages through to manuals and online services. Our web service e-nav gives you access to an easy-to-navigate library where all standards that are relevant to your company are available. Standards and manuals are sources of knowledge. We sell them.

Increase understanding and improve perception
With SIS you can undergo either shared or in-house training in the content and application of standards. Thanks to our proximity to international development and ISO you receive the right knowledge at the right time, direct from the source. With our knowledge about the potential of standards, we assist our customers in creating tangible benefit and profitability in their organisations.

If you want to know more about SIS, or how standards can streamline your organisation, please visit www.sis.se or contact us on phone +46 (0)8-555 523 00

Den internationella standarden ISO 19453-5:2018 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av ISO 19453-5:2018.

The International Standard ISO 19453-5:2018 has the status of a Swedish Standard. This document contains the official version of ISO 19453-5:2018.

Upplysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00. Standarder kan beställas hos SIS som även lämnar allmänna upplysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), telephone +46 8 555 520 00. Standards may be ordered from SIS, who can also provide general information about Swedish and foreign standards.

Denna standard är framtagen av kommittén för El- och hybridfordon, SIS/TK 517.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på www.sis.se - där hittar du mer information.

Contents

Page

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 voluntary nature of standards, 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

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 32, *Electrical and electronic components and general system aspects*.

A list of all parts in the ISO 19453 series can be found on the ISO website.

Road vehicles — Environmental conditions and testing for electrical and electronic equipment for drive system of electric propulsion vehicles —

Part 5:
Chemical loads

1 Scope

This document specifies requirements for the electric propulsion systems and components with maximum working voltages according to voltage class B. It does not apply to high voltage battery packs (e.g. for traction) and systems and components inside. It describes the potential environmental stresses and specifies tests and requirements recommended for different stress levels on/in the vehicle.

This document describes chemical loads.

NOTE Conditions and testing for a continuous contact can be determined from other standards or agreed upon between the customer and the supplier.

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 19453-1, *Road vehicles — Environmental conditions and testing for electrical and electronic equipment for drive system of electric propulsion vehicles — Part 1: General*

ISO 19453-4, *Road vehicles — Environmental conditions and testing for electrical and electronic equipment for drive system of electric propulsion vehicles — Part 4: Climatic loads*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 19453-1 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 https://www.iso.org/obp

4 Tests

4.1 General

Components and associated parts that can come into contact with the specified chemical agents shall be resistant to those agents. The components and associated parts shall be tested with all agents they are likely to come into contact with, except for those materials which can be shown by documentary evidence to be immune to the contaminant and which need not be tested.

A material is considered to be immune to a contaminant if there is no change in properties sufficient to affect material performances over the time and at the temperature specified in this clause.

The supplier and vehicle manufacturer shall agree on the manufacturer and type of chemical agents.

Resistance to the specified chemical agents shall be considered as early as possible during the material selection process.

4.2 Purpose

The purpose of the test is to determine whether the device under test (DUT) is unacceptably affected by temporary exposure to contaminating agents.

NOTE This test is not intended to be a life test.

4.3 General test conditions

Chemical agents shall be selected as defined in Table 1, depending on the mounting location of the DUT.

Unless otherwise specified, one DUT per test agent shall be used.

The following tests describe one test cycle. Unless otherwise specified, one test cycle with one agent per DUT shall be performed. Any other number of cycles may be agreed between the customer and the supplier.

NOTE If the size of the DUT is sufficient, multiple test agents can be applied partially on one DUT provided that these do not have any influence on each other.

4.4 DUT conditioning

Unless otherwise specified, the DUT shall be stored at a room temperature (RT) of (23 ± 5) °C and a relative humidity (RH) of between 25 % and 75 % until temperature and humidity are stabilized.

The DUT shall be tested under conditions of normal use. If necessary, and unless otherwise specified, unrepresentative coatings or contaminations of the DUT shall be removed.

If a cleaning procedure is needed, the customer and the supplier shall agree on the methodology.

4.5 Test agent conditioning

Unless otherwise specified, all test agents shall be stabilized at an RT of (23 ± 5) °C when applied on the DUT.

4.6 Application method

Unless otherwise specified, application shall be performed at an RT of (23 ± 5) °C and an RH of between 25 % and 75 %.

The application method shall be such that the DUT is sufficiently wetted by the test agent in the areas to be tested. The application method shall be chosen as defined in Table 2, depending on the agent and the mounting location of the DUT.

The preferred application methods are given in Table 1.

4.7 Test conditions

Unless otherwise specified, the exposure of the DUT to the agent applied shall be performed at the temperature and for the duration specified in Table 1.