SEADMETE TÖÖKINDLUSE KATSETAMINE
Osa 6: Tõrkevoo ja tõrkesageduse püsivuse hindamine ja õigsuse katsetamine

Equipment reliability testing
Part 6: Tests for the validity and estimation of the constant failure rate and constant failure intensity

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

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Käesolev Eesti standard EVS-IEC 60605-6:2011 “Seadmete töökindluse katsetamine. Osa 6: Tõrkevoo ja tõrkesageduse püsivuse hindamine ja õigsuse katsetamine” sisaldab rahvusvahelise standardi IEC 60605-6:2007 “Equipment reliability testing - Part 6: Tests for the validity and estimation of the constant failure rate and constant failure intensity” identset ingliskeelset teksti.

Standard EVS-IEC 60605-6:2011 on kinnitatud Eesti Standardikeskuse 03.01.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Standard on kättesaadav Eesti Standardikeskusest.

NATIONAL FOREWORD

This Estonian Standard EVS-IEC 60605-6:2011 consists of the identical English text of the International Standard IEC 60605-6:2007 “Equipment reliability testing - Part 6: Tests for the validity and estimation of the constant failure rate and constant failure intensity”.

This standard is ratified with the order of Estonian Centre for Standardisation dated 03.01.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

The standard is available from Estonian Centre for Standardisation.

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Käesolev standard sätestab IEC 60050-191 kohaselt defineeritud tõrkevoo või tõrkesageduse eeldatava püsivuse kontrolli ja tõrkevoo või -sageduse tunnussuuruste määramise protseduuri. Neid protseduure saab rakendada alati, kui selliseid eeldusi on vaja kontrollida. See võib olla vajalik tõrkevoo või tõrkesageduse võimaliku ajalise muutumise kindlakstegemise nõude või tarbe korral.

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EQUIPMENT RELIABILITY TESTING –

Part 6: Tests for the validity and estimation of the constant failure rate and constant failure intensity

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International Standard IEC 60605-6 has been prepared by IEC technical committee 56: Dependability.

This third edition cancels and replaces the second edition, published in 1997, and constitutes a technical revision.

The major technical changes with respect to the previous edition concern the inclusion of corrected formulae for tests previously included in a corrigendum, and the addition of new methods for the analysis of multiple items.

The text of this standard is based on the following documents:

FDIS	Report on voting
56/1181/FDIS	56/1191/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

A list of all the parts in the IEC 60605 series, under the general title *Equipment reliability testing*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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INTRODUCTION

The techniques given in this part of IEC 60605 for testing constant failure rate or constant failure intensity assumptions are numerical and graphical procedures. The graphical methods allow patterns, such as early failures and non-constant failure rates and intensities, to be identified and estimated. The techniques are appropriate for analysing test or field data.

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EQUIPMENT RELIABILITY TESTING –

Part 6: Tests for the validity and estimation of the constant failure rate and constant failure intensity

See dokument on EVS-i poolt loodud eelvaade

1 Scope

This standard specifies procedures to verify the assumption of a constant failure rate or constant failure intensity, as defined in IEC 60050(191), and to identify patterns in the failure rate or intensity. These procedures are applicable whenever it is necessary to verify such assumptions. This may be due to a requirement or for the purpose of assessing any variation with time of the failure rate or failure intensity.

The objectives of the methods specified in this standard are as follows:

– to test whether the times to failure of non-repaired items are exponentially distributed, i.e. the failure rate is constant;

– to test whether the times between failures of repaired item(s) have any time trend, i.e. the failure intensity does not exhibit an increasing or decreasing trend;

– to construct graphs that allow the patterns in the failure rate or failure intensity to be displayed, with a view to verifying whether they can be assumed constant, to estimate their values or to identify the nature of any departure from constancy.

2 Normative references

The following referenced documents are indispensable for the application 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.

IEC 60050(191), *International Electrotechnical Vocabulary (IEV) – Chapter 191: Dependability and quality of service*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050(191) apply. However, the following clarifications should be noted:

a) the term "time" can refer to length, cycles or other quantities;

b) the term "failure" can also refer to other specified events such as repair completion or any other particular event;

c) the term “failure rate” is used to mean the instantaneous failure rate, also known as the hazard function;

d) the procedures are applicable for time-to-failure data collected from both test as well as from in the field. In this standard, the term “test” is used in Clauses 6 and 7 and can refer to time data collected from both test as well as from in the field.