SLOVENSKI STANDARD
SIST EN IEC 60953-0:2022

01-oktober-2022

Nadomešča:
SIST EN 60953-2:2001

Pravila za preskuse toplotne sprejemljivosti parne turbine - 0. del: Širok razpon natančnosti za različne vrste in velikosti turbin (IEC 60953-0:2022)

Rules for steam turbine thermal acceptance tests - Part 0: Wide range of accuracy for various types and sizes of turbines (IEC 60953-0:2022)

Regeln für wärmetechnische Abnahmemessung an Dampfturbinen - Teil 0: Weiter Genauigkeitsbereich für unterschiedliche Bauarten und Baugrößen von Dampfturbinen (IEC 60953-0:2022)

Règles pour les essais thermiques de réception des turbines à vapeur - Partie 0: Plage de précision étendue pour différents types et dimensions de turbines (IEC 60953-0:2022)

Ta slovenski standard je istoveten z: **EN IEC 60953-0:2022**

ICS:

27.040	Plinske in parne turbine. Parni stroji	Gas and steam turbines. Steam engines

SIST EN IEC 60953-0:2022 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 60953-0

July 2022

ICS 27.040

Supersedes EN 60953-2:1995

English Version

Rules for steam turbine thermal acceptance tests - Part 0: Wide range of accuracy for various types and sizes of turbines (IEC 60953-0:2022)

Règles pour les essais thermiques de réception des turbines à vapeur - Partie 0: Plage de précision étendue pour différents types et dimensions de turbines (IEC 60953-0:2022)

Regeln für wärmetechnische Abnahmemessung an Dampfturbinen - Teil 0: Weiter Genauigkeitsbereich für unterschiedliche Bauarten und Baugrößen von Dampfturbinen (IEC 60953-0:2022)

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CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC 60953-0:2022 E

European foreword

The text of document 5/248/FDIS, future edition 1 of IEC 60953-0, prepared by IEC/TC 5 "Steam turbines" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60953-0:2022.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2023-04-04
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2025-07-04

This document supersedes EN 60953-2:1995 and all of its amendments and corrigenda (if any).

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Endorsement notice

The text of the International Standard IEC 60953-0:2022 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60034-2 (series) NOTE Harmonized as EN IEC 60034-2 (series)

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
ISO/IEC Guide 98	-	Uncertainty of measurement	-	-
IEC 60045-1	-	Steam turbines - Part 1: Specifications	EN IEC 60045-1	-
ISO 5167	series	Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full	EN ISO 5167	series
ISO 12242	-	Measurement of fluid flow in conduits - ultrasonic transit-time meters for liquids	-	-
ISO 18888	-	Gas turbine combined cycle power plants - Thermal performance tests	-	-
ANSI/IEEE C57.13	-	IEEE Standard requirements for instrument transformers	-	-

IEC 60953-0

Edition 1.0 2022-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Rules for steam turbine thermal acceptance tests – Part 0: Wide range of accuracy for various types and sizes of turbines

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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RULES FOR STEAM TURBINE THERMAL ACCEPTANCE TESTS –

Part 0: Wide range of accuracy for various types and sizes of turbines

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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IEC 60953-0 has been prepared by subcommittee WG 11/MT 14: Thermal Acceptance Test, of IEC technical committee 5: Steam Turbines. It is an International Standard.

This first edition cancels and replaces IEC 60953-2, published in 1990. This edition constitutes a technical revision.This edition includes the following significant technical changes with respect to the previous edition:

a) IEC 60953-2:1990 has been used as the basis to develop IEC 60953-0;
b) Outdated measuring techniques have been updated and the corresponding reduction of the expected test result measuring uncertainty indicated;
c) Guarantee of power output at specified steam flow has been included;
d) A proposal for assignment of unaccounted for leakages has been included;
e) Correction methods and guarantee comparisons are updated;
f) Various appendices deleted:
   – Appendix B (flow nozzle)
   – Appendix E (generalized correction curves)
   – Appendix G (power measurement uncertainty)

g) Annex added:

– Annex E (Temperature variation method) taken over from IEC 60953-3:2002,Annex L

The text of thisInternational Standard is based on the following documents:

Draft	Report on voting
5/248/FDIS	5/250/RVD

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

A list of all parts in the IEC 60953 series, published under the general title *Rules for steam turbine thermal acceptance tests*, can be found on the IEC website.

The language used for the development of thisInternational Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement,available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

The committee has decided that the contents of this document will remain unchanged until the stability dateindicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

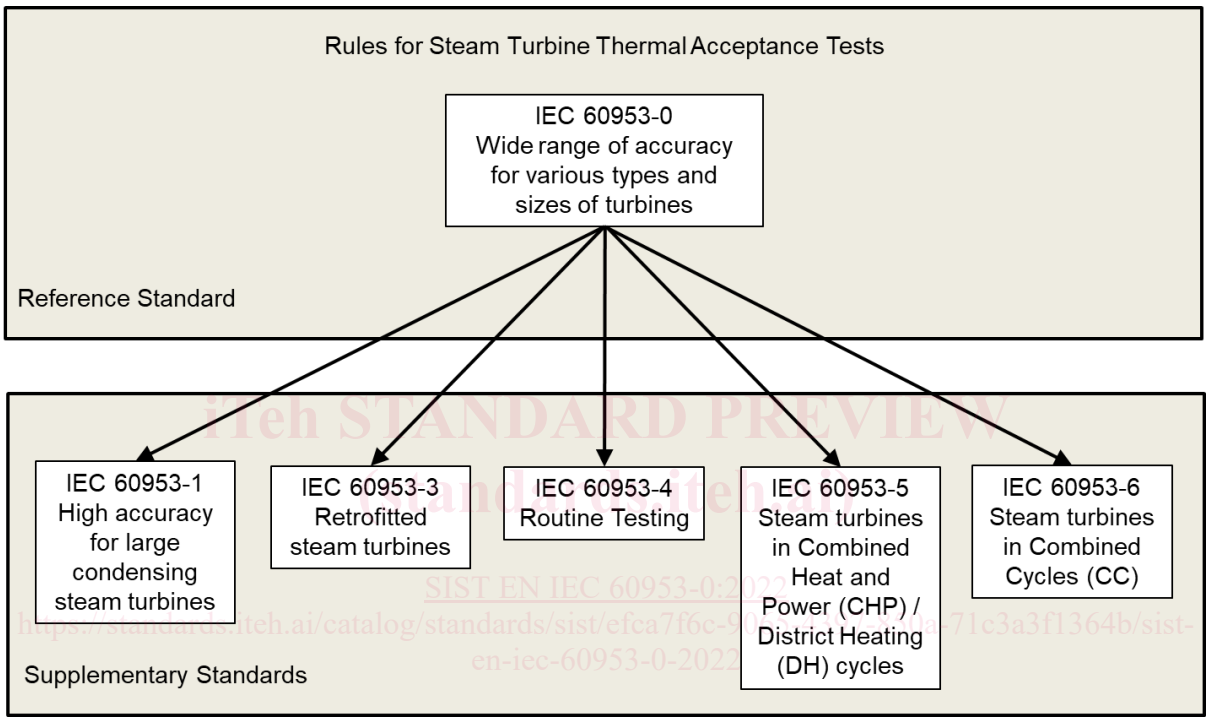
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The continuing development of measuring techniques, the increasing capacity of steam turbines and increasing variety of steam turbine configurations has necessitated a revision of IEC 60953:1990.

Since all the needs of the power industry could not be satisfied by one single performance test standard covering the requirements for all of the steam turbine configurations and accuracy, the revision to this standard is based upon one reference standard and various supplementary parts as indicated below:



1) Basic philosophy and figures on uncertainty

   IEC 60953-0 provides for acceptance tests of steam turbines of various types and capacities with corresponding measuring uncertainty, it is based upon the Method B of IEC 60953-2:1990. Additional and alternative guidance will be given for specific steam turbine applications in the supplementary standards where it is required.

   Instrumentation and measuring procedures are chosen accordingly from a scope specified in the standard series which is centred mainly on standardized instrumentation and procedures, but may extend up to high accuracy provisions requiring calibration of flow measuring devices. The resulting measuring uncertainty of the test result is then determined by calculating methods presented in the standard series and normally, if not stated otherwise in the contract, taken into account in the comparison between test result and guarantee value. The total cost of an acceptance test can therefore be maintained in relationship with the economic value of the guarantee values to be ascertained.

   When good-standardized instrumentation and procedures are applied in a test, the measuring uncertainty given in Table 6 can be achieved. The parties to the test should reach agreement on the measuring uncertainty desired for the acceptance tests.

2) Guiding principles

   The requirements concerning the preparation and conditions of the test and especially such conditions of the test as duration, deviations and constancy of test conditions are defined.