

# **SLOVENSKI STANDARD**

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

**01-oktober-2022**

**Nadomešča:**  
**SIST EN 60953-2:2001**

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**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)

[SIST EN IEC 60953-0:2022](https://standards.iteh.ai/catalog/standards/sist/efca7f6c-9065-4397-850a-71c3a3f1364b/sist-en-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**

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**ICS:**

27.040	Plinske in parne turbine. Parni stroji	Gas and steam turbines. Steam engines
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**SIST EN IEC 60953-0:2022**

**en**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

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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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SIST EN IEC 60953-0:2022

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**EN IEC 60953-0:2022 (E)****European foreword**

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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- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2025-07-04

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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](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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



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

**Règles pour les essais thermiques de réception des turbines à vapeur –  
Partie 0: Plage de précision étendue pour différents types et dimensions de  
turbines**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**RULES FOR STEAM TURBINE THERMAL ACCEPTANCE TESTS –****Part 0: Wide range of accuracy for various types and sizes of turbines****FOREWORD**

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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 this International 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 this International 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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

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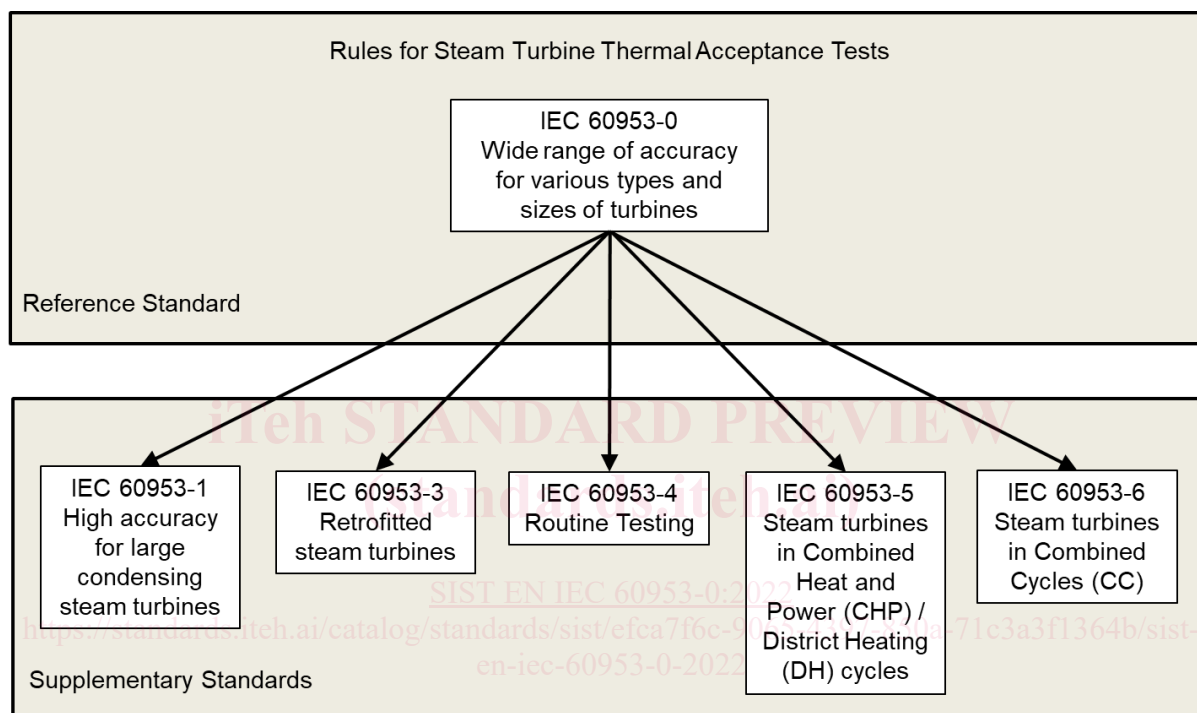
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## INTRODUCTION

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.