

**Geometrical Product Specifications (GPS) - Acceptance and reverification tests for coordinate measuring machines (CMM) - Part 2: CMMs used for measuring linear dimensions**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 10360-2:2010 sisaldab Euroopa standardi EN ISO 10360-2:2009 ingliskeelset teksti.

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English Version

**Geometrical product specifications (GPS) - Acceptance and  
reverification tests for coordinate measuring machines (CMM) -  
Part 2: CMMs used for measuring linear dimensions (ISO  
10360-2:2009)**

Spécification géométrique des produits (GPS) - Essais de  
réception et de vérification périodique des machines à  
mesurer tridimensionnelles (MMT) - Partie 2: MMT utilisées  
pour les mesures de dimensions linéaires (ISO 10360-  
2:2009)

Geometrische Produktspezifikation (GPS) -  
Annahmeprüfung und Bestätigungsprüfung für  
Koordinatenmessgeräte (KMG) - Teil 2: KMG angewendet  
für Längenmessungen (ISO 10360-2:2009)

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## Foreword

This document (EN ISO 10360-2:2009) has been prepared by Technical Committee ISO/TC 213 "Dimensional and geometrical product specifications and verification" in collaboration Technical Committee CEN/TC 290 "Dimensional and geometrical product specification and verification" the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2010, and conflicting national standards shall be withdrawn at the latest by June 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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### Endorsement notice

The text of ISO 10360-2:2009 has been approved by CEN as a EN ISO 10360-2:2009 without any modification.

# Contents

Page

Foreword .....	v
Introduction .....	vi
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions .....	2
4 Symbols .....	4
5 Environmental and metrological requirements .....	4
5.1 Environmental conditions .....	4
5.2 Operating conditions .....	5
5.3 Length measurement error, $E_L$ .....	5
5.4 Repeatability range of the length measurement error, $R_0$ .....	5
5.5 Workpiece loading effects .....	5
6 Acceptance tests and reverification tests .....	6
6.1 General .....	6
6.2 Principle .....	6
6.3 Length measurement error with zero ram axis stylus tip offset, $E_0$ .....	7
6.3.1 General .....	7
6.3.2 Measuring equipment .....	7
6.3.3 Procedure .....	8
6.3.4 Derivation of test results .....	9
6.4 Repeatability range of the length measurement error, $R_0$ .....	9
6.5 Length measurement error with ram axis stylus tip offset of 150 mm, $E_{150}$ .....	10
6.5.1 Measuring equipment .....	10
6.5.2 Procedure .....	10
6.5.3 Derivation of test results .....	12
6.6 Dual ram CMMs .....	12
6.6.1 Simplex operating mode .....	12
6.6.2 Duplex operating mode .....	12
7 Compliance with specifications .....	13
7.1 Acceptance test .....	13
7.1.1 Acceptance criteria .....	13
7.1.2 Data rejection and repeated measurements .....	14
7.2 Reverification test .....	14
8 Applications .....	14
8.1 Acceptance test .....	14
8.2 Reverification test .....	15
8.3 Interim check .....	15
9 Indication in product documentation and data sheets .....	15
Annex A (informative) Interim check .....	16
Annex B (normative) Artefacts that represent a calibrated test length .....	18
Annex C (informative) Alignment of gauges .....	23
Annex D (normative) Mathematical adjustments to low CTE artefacts .....	25
Annex E (informative) Location of the single stylus probing test .....	27

<b>Annex F (informative) Relation to the GPS matrix model .....</b>	<b>28</b>
<b>Bibliography .....</b>	<b>29</b>

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## Introduction

This part of ISO 10360 is a geometrical product specification (GPS) standard and is to be regarded as a general GPS standard (see ISO/TR 14638). It influences link 5 of the chains of standards on size, distance, radius, angle, form, orientation, location, run-out and datums. For more detailed information of the relation of this part of ISO 10360 to other standards and the GPS matrix model, see Annex F.

The tests of this part of ISO 10360 have three technical objectives:

- 1) to test the error of indication of a calibrated test length using a probing system without any ram axis stylus tip offset;
- 2) to test the error of indication of a calibrated test length using a probing system with a specified ram axis stylus tip offset; and
- 3) to test the repeatability of measuring a calibrated test length.

The benefits of these tests are that the measured result has a direct traceability to the unit length, the metre, and that it gives information on how the CMM will perform on similar length measurements.

Clause 3 of this part of ISO 10360 contains definitions that supersede similar definitions in ISO 10360-1:2000.

The revised definitions are required to avoid an ambiguity that would otherwise have been introduced with this issue of ISO 10360-2. Also, definition 3.6 supersedes effectively an identical definition in ISO 10360-1:2000 because the symbols used have been revised and expanded for clarification.

# Geometrical product specifications (GPS) — Acceptance and reverification tests for coordinate measuring machines (CMM) —

## Part 2: CMMs used for measuring linear dimensions

### 1 Scope

This part of ISO 10360 specifies the acceptance tests for verifying the performance of a coordinate measuring machine (CMM) used for measuring linear dimensions as stated by the manufacturer. It also specifies the reverification tests that enable the user to periodically reverify the performance of the CMM.

The acceptance and reverification tests given in this part of ISO 10360 are applicable only to Cartesian CMMs using contacting probing systems of any type operating in the discrete-point probing mode.

This part of ISO 10360 does not explicitly apply to:

- non-Cartesian CMMs; however, parties may apply this part of ISO 10360 to non-Cartesian CMMs by mutual agreement;
- CMMs using optical probing; however, parties may apply this approach to optical CMMs by mutual agreement.

This part of ISO 10360 specifies performance requirements that can be assigned by the manufacturer or the user of a CMM, the manner of execution of the acceptance and reverification tests to demonstrate the stated requirements, rules for proving conformance, and applications for which the acceptance and reverification tests can be used.

### 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.

ISO 10360-1:2000, *Geometrical Product Specifications (GPS) — Acceptance and reverification tests for coordinate measuring machines (CMM) — Part 1: Vocabulary*

ISO 14253-1:1998, *Geometrical Product Specifications (GPS) — Inspection by measurement of workpieces and measuring equipment — Part 1: Decision rules for proving conformance or non-conformance with specifications*

ISO 14660-1:1999, *Geometrical Product Specifications (GPS) — Geometrical features — Part 1: General terms and definitions*

ISO/TS 23165:2006, *Geometrical product specifications (GPS) — Guidelines for the evaluation of coordinate measuring machine (CMM) test uncertainty*

ISO/IEC Guide 99, *International vocabulary of metrology — Basic and general concepts and associated terms (VIM)*