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# International Standard



# 5459

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Technical drawings — Geometrical tolerancing — Datums and datum-systems for geometrical tolerances

*Dessins techniques — Tolérancement géométrique — Références spécifiées et systèmes de références spécifiées pour tolérances géométriques*

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## Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5459 was developed by Technical Committee ISO/TC 10, *Technical drawings*, and was circulated to the member bodies in February 1978.

It has been approved by the member bodies of the following countries :

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## Contents

	Page
<b>0</b> Introduction .....	1
<b>1</b> Scope and field of application .....	1
<b>2</b> References .....	1
<b>3</b> Definitions .....	1
<b>4</b> Establishing datums .....	2
<b>5</b> Application of datums .....	4
<b>6</b> Indication of datums and datum-systems .....	7
<b>7</b> Datum targets .....	10
<b>8</b> Three-plane datum-system .....	15
<b>9</b> Groups of features nominated as datums .....	16

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# Technical drawings — Geometrical tolerancing — Datums and datum-systems for geometrical tolerances

## 0 Introduction

For uniformity all figures in this International Standard are in first angle projection.

It should be understood that the third angle projection could equally well have been used without prejudice to the principles established.

For the definitive presentation (proportions and dimensions) of symbols for geometrical tolerancing, see ISO 7083.

## 1 Scope and field of application

This International Standard describes datum and datum-systems for geometrical tolerancing, their definitions, practical embodiments and their indications on technical drawings in the field of mechanical engineering.

## 2 References

ISO 128, *Technical drawings — General principles of presentation*.<sup>1)</sup>

ISO 129, *Engineering drawings — Dimensioning*.<sup>2)</sup>

ISO 1101, *Technical drawings — Geometrical tolerancing — Tolerances of form, orientation, location and run-out — Generalities, definitions, symbols, indications on drawings*.<sup>3)</sup>

ISO 2692, *Technical drawings — Geometrical tolerancing — Maximum material principle*.<sup>4)</sup>

ISO 7083, *Technical drawings — Symbols for geometrical tolerancing — Proportions and dimensions*.<sup>5)</sup>

## 3 Definitions

**3.1 datum** : A theoretically exact geometric reference (such as axes, planes, straight lines, etc.) to which toleranced features are related. Datums may be based on one or more datum features of a part.

**3.2 datum-system** : A group of two or more separate datums used as a combined reference for a toleranced feature.

**3.3 datum feature** : A real feature of a part (such as an edge, a surface, or a hole, etc.), which is used to establish the location of a datum.

NOTE — As datum features are subject to manufacturing errors and variations, it may be necessary where appropriate to specify tolerances of form to them.

**3.4 datum target** : A point, line or limited area on the work-piece to be used for contact with the manufacturing and inspection equipment, to define the required datums in order to satisfy the functional requirements.

**3.5 simulated datum feature** : A real surface of adequately precise form (such as a surface plate, a bearing, or a mandrel, etc.) contacting the datum feature(s) and used to establish the datum(s).

NOTE — Simulated datum features are used as the practical embodiment of the datums during manufacture and inspection.

1) At present at the stage of draft. (Revision of ISO/R 128-1959.)

2) At present at the stage of draft. (Revision of ISO/R 129-1959.)

3) At present at the stage of draft. (Revision of ISO/R 1101/1-1969.)

4) At present at the stage of draft. (Revision of ISO/R 1101/2-1974.)

5) At present at the stage of draft.



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