



SLOVENSKI STANDARD
SIST EN ISO 5456-4:2002
01-februar-2002

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Technical drawings - Projection methods - Part 4: Central projection (ISO 5456-4:1996)

Technische Zeichnungen - Projektionsmethoden - Teil 4: Zentralprojektion (ISO 5456-4:1998)

Dessins techniques - Methodes de projection - Partie 4: Projection centrale (ISO 5456-4:1996)

STANDARD PREVIEW
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Ta slovenski standard je istoveten z: **EN ISO 5456-4:2001**

SIST EN ISO 5456-4:2002
<https://standards.iteh.ai/catalog/standards/sist/71b1c40e-2654-41ba-acdc-39d006a32169/sist-en-iso-5456-4-2002>

ICS:

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en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 5456-4

October 2001

ICS 01.100.10

English version

Technical drawings - Projection methods - Part 4: Central projection (ISO 5456-4:1996)

Dessins techniques - Méthodes de projection - Partie 4:
Projection centrale (ISO 5456-4:1996)

Technische Zeichnungen - Projektionsmethoden - Teil 4:
Zentralprojektion (ISO 5456-4:1998)

This European Standard was approved by CEN on 30 September 2001.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN ISO 5456-4:2001 (E)

CORRECTED 2002-01-02

Foreword

The text of the International Standard from Technical Committee ISO/TC 10 "Technical drawings, product definition and related documentation" of the International Organization for Standardization (ISO), the secretariat of which is held by CMC.

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 April 2002, and conflicting national standards shall be withdrawn at the latest by April 2002.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 5456-4:1996 has been approved by CEN as a European Standard without any modification.

NOTE Normative references to International Standards are listed in annex ZA (normative).

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Annex ZA
(normative)

**Normative references to international publications
with their relevant European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of -any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 10209-2	1994	Technical product documentation - Vocabulary - Part 2: Terms relating to projection methods	EN ISO 10209-2	1996

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INTERNATIONAL STANDARD

ISO
5456-4

First edition
1996-06-15

Corrected and reprinted
1998-08-01

Technical drawings — Projection methods —

Part 4: Central projection

Dessins techniques — Méthodes de projection —
Partie 4: Projection centrale
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[SIST EN ISO 5456-4:2002](https://standards.iteh.ai/catalog/standards/sist/7fb1c40e-2634-41ba-acdc-39d006a32169/sist-en-iso-5456-4-2002)

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Reference number
ISO 5456-4:1996(E)

ISO 5456-4:1996(E)**Foreword**

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 5456-4 was prepared by Technical Committee ISO/TC 10, *Technical drawings, product definition and related documentation*, Subcommittee SC 1, *Basic conventions*.

ISO 5456 consists of the following parts, under the general title *Technical drawings — Projection methods*:

- Part 1: *Synopsis*
- Part 2: *Orthographic representations*
- Part 3: *Axonometric representations*
- Part 4: *Central projection*

Annexes A and B of this part of ISO 5456 are for information only.

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Introduction

Central projection (perspective) is a realistic pictorial representation obtained by projecting the object to be represented from a point at finite distance (projection centre) on a single projection plane (normally the drawing surface). Central projection provides excellent visual appearance of the object (monocular vision) and is often used in architectural drawings.

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Technical drawings — Projection methods —

Part 4:

Central projection

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1 Scope

This part of ISO 5456 specifies basic rules for the development and application of central projection in technical drawings.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 5456. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 5456 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 10209-2:1993, *Technical product documentation — Vocabulary — Part 2: Terms relating to projection methods*.

3 Definitions

For the purposes of this part of ISO 5456, the definitions given in ISO 10209-2 and the following definitions apply.

3.1 alignment line: Line parallel to a given line passing through the projection centre. Its intersection with the projection plane gives the vanishing point of all lines parallel to the given line.

3.2 height of projection: Vertical distance of the projection centre from the basic plane.

3.3 horizontal distance: Distance between the projection centre and the projection plane.

3.4 projection angle: Angle formed by the projection plane and the horizon plane.

3.5 scale point: Vanishing point of the horizontal direction orthogonal to that bisecting the angle formed by the horizon line and the alignment line of the given horizontal line, and allowing the true length of the projection of the given line to be determined.

3.6 station of observation: Orthogonal projection of the projection centre onto the basic plane.

4 Symbols

Letter symbols for terms used in central projection are given in table 1 and illustrated in figures 1 and 2, as well as in the figures mentioned in table 1.

Table 1 — Letter symbols

No.	Term	Letter symbol	Figure
1)	Projection plane	T	1
1)	Basic plane	G	1
1)	Basic line	X	1
3.4	Projection angle	β	5
1)	Horizon plane	HT	1
1)	Horizon line	h	1
3.1	Alignment line	VI	4
1)	Main point	C	1
1)	Vanishing point	V	4
1)	Main projector	pL	1
1)	Projection centre	O	1
3.2	Height of projection	H	1
3.3	Horizontal distance	d	1
1)	Vision cone	K	2
1)	Circle of vision	Ks	3
1)	Vision angle	α	2
1)	Projector	PI	3
1)	Distance point	DP	13
3.5	Scale point	MP	14
3.6	Station of observation	Sp	1

1) Terms already defined in ISO 10209-2.

5 Central projection methods

The mode of the central projection depends on the position of the object to be represented with respect to the projection plane.

For possible positions and applicable projection methods, see 5.1 to 5.4.

5.1 One-point method

A one-point projection method is a central projection of an object having its principal face parallel to the projection plane (special position). All parallel outlines and edges of the object which are parallel to the projection plane retain their direction in this represen-

tation (horizontal lines remain horizontal and vertical lines remain vertical). All lines perpendicular to the projection plane converge at the vanishing point, V, coinciding with the main point, C, (see figure 3 and 7.2.1 and 7.3).

5.2 Two-point method

A two-point projection method is a central projection of an object having its vertical outlines and edges parallel to the projection plane (particular position). All horizontal lines of a representation converge at multiple vanishing points V_1, V_2, V_3, \dots , on the horizon line (see figure 4 and 7.2.2 and 7.4).

5.3 Three-point method

A three-point projection method is a central projection of an object having no outlines or edges parallel to the projection plane (any position). If the projection plane is inclined towards the projection centre, i.e. $\beta > 90^\circ$, the vanishing point for vertical lines is situated below the horizon line (see figure 5 and 7.5.1 and 7.5.2).

5.4 Coordinate method

Representation by the coordinate method is based on simple proportions.

The coordinates related to the main projector of all relevant points of the object to be represented, are taken by the graphic method from the basic plane and elevation. From these point coordinates, the image coordinates are obtained by a calculation method and entered to scale. The image points are connected to each other to provide a clear representation of the object (see figure 6).

6 Principle

6.1 Location and position of the projection plane

The image size of an object can be varied by parallel shifting of the projection plane. If the object is placed in front of the projection plane, the representation will be enlarged. The object behind the projection plane will result in a smaller image. Figure 7 shows the change in image size depending on the position of the object with respect to the projection plane.

Figure 8 shows the change in image size depending on the method of representation with vertical or inclined projection planes. β is the included angle between the projection plane and the basic plane near the projection centre.

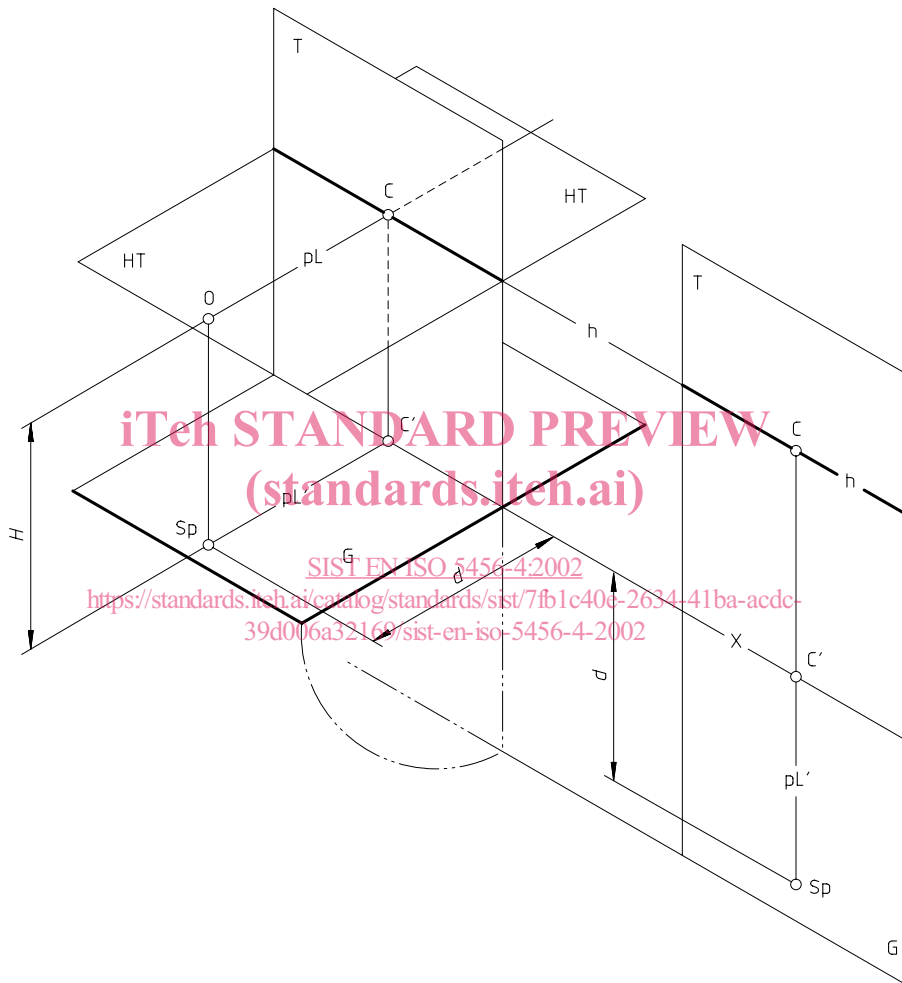


Figure 1 — Projection model of the central projection