SLOVENSKI STANDARD
oSIST prEN 1337-8:2018

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Konstrukcijska ležišča - 8. del: Vodila za ležišča in pritrjene konstrukcije

Structural bearings - Part 8: Guide bearings and Restraint bearings

Lager im Bauwesen - Teil 87: Führungslager und Festhaltekonstruktionen

Ta slovenski standard je istoveten z: **prEN 1337-8**

ICS:

91.010.30	Tehnični vidiki	Technical aspects

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English Version

Structural bearings - Part 8: Guide bearings and Restraint bearings

Lager im Bauwesen - Teil 87: Führungslager und Festhaltekonstruktionen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 167.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 1337-8:2018) has been prepared by Technical Committee CEN/TC 167 “Structural bearings”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1337-8:2007.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Regulation 305/2011.

For relationship with EU Regulation 305/2011, see informative Annex ZA, which is an integral part of this document.

prEN 1337, *Structural bearings*, consists of the following 8 Parts:

— *Part 1: General*;

— *Part 2: Sliding elements*;

— *Part 3: Elastomeric bearings*;

— *Part 4: Roller bearings*;

— *Part 5: Pot bearings*;

— *Part 6: Rocker bearings*;

— *Part 7: Spherical and cylindrical PTFE bearings*;

— *Part 8: Guide bearings and Restraint bearings*.

The major technical changes are listed below**:**

— Complete technical and editorial revision of the document; it is not possible to list all implemented changes to this edition of EN 1337-8.

1 Scope

This document specifies rules for the design, testing and manufacture of guide bearings and restraint bearings. It is applicable to bearings, which transmit loads in x- and y-plane according to prEN 1337-1:2018 only.

This document will be used in conjunction with the relevant parts of the prEN 1337 series.

2 Normative references

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.

prEN 1337-1:2018, *Structural bearings — Part 1: General*

prEN 1337-2:2018, *Structural bearings — Part 2: Sliding elements*

prEN 1337-5:2018, *Structural bearings — Part 5: Pot bearings*

EN 1993 (all parts), *Eurocode 3: Design of steel structures*

EN 10025 (all parts), *Hot rolled products of structural steels*

EN 10083-3, *Steels for quenching and tempering — Part 3: Technical delivery conditions for alloy steels*

EN 10088-2, *Stainless steels — Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes*

EN 10340, *Steel castings for structural uses*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 1337-1:2018 and prEN 1337-2:2018 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
base plate
plate that is an integral part of the bearing and forms the main component to which restraints and guides are attached

[SOURCE: prEN 1337-2:2018, 3.21.13]

3.2
tilting element
element that transmits the specified forces and permits rotations about at least one axis

3.3
guide bearing
bearing which provides restraint in one horizontal direction only, accommodates rotations and does not transmit vertical loads

3.4
restraint bearing
bearing which prevents movements in a plane, accommodates rotations and does not transmit loads perpendicular to this plane

4 Types of restraint and guide bearings

4.1 Restraint bearing

The restraint bearing consists of ferrous components with sliding elements (restraints) and, where necessary, tilting elements.

The restraint bearing transmits forces in the x-y-plane according to prEN 1337-1:2018 and allows movements in the z-direction and rotations.

Typical restraint bearings are shown in Figure 1.

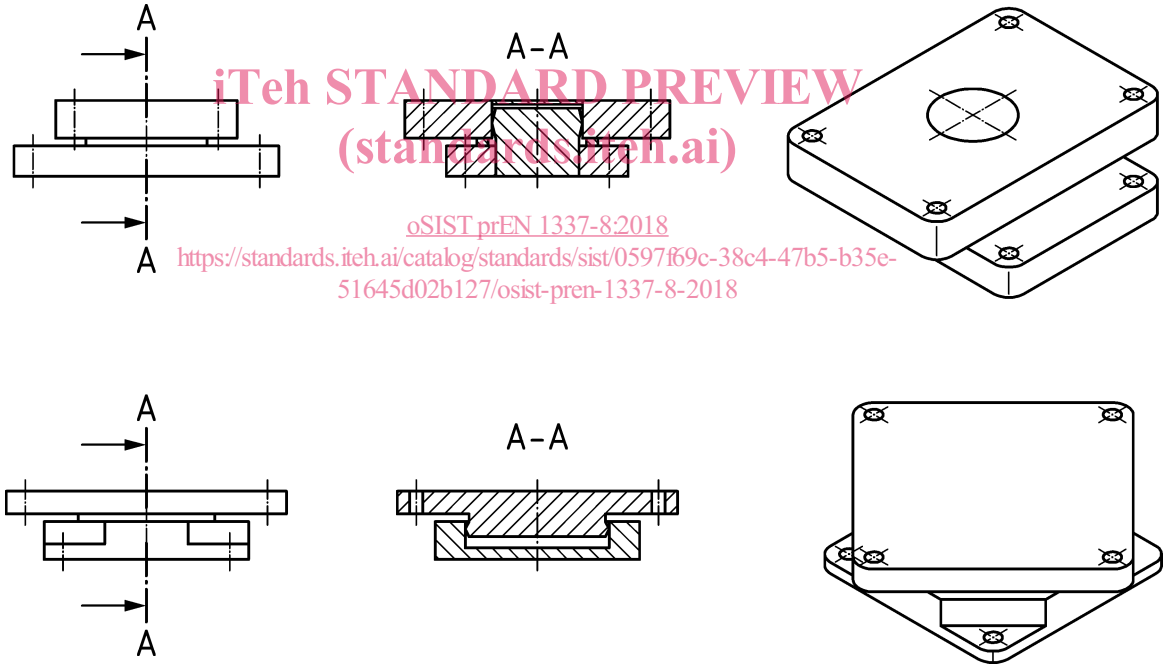


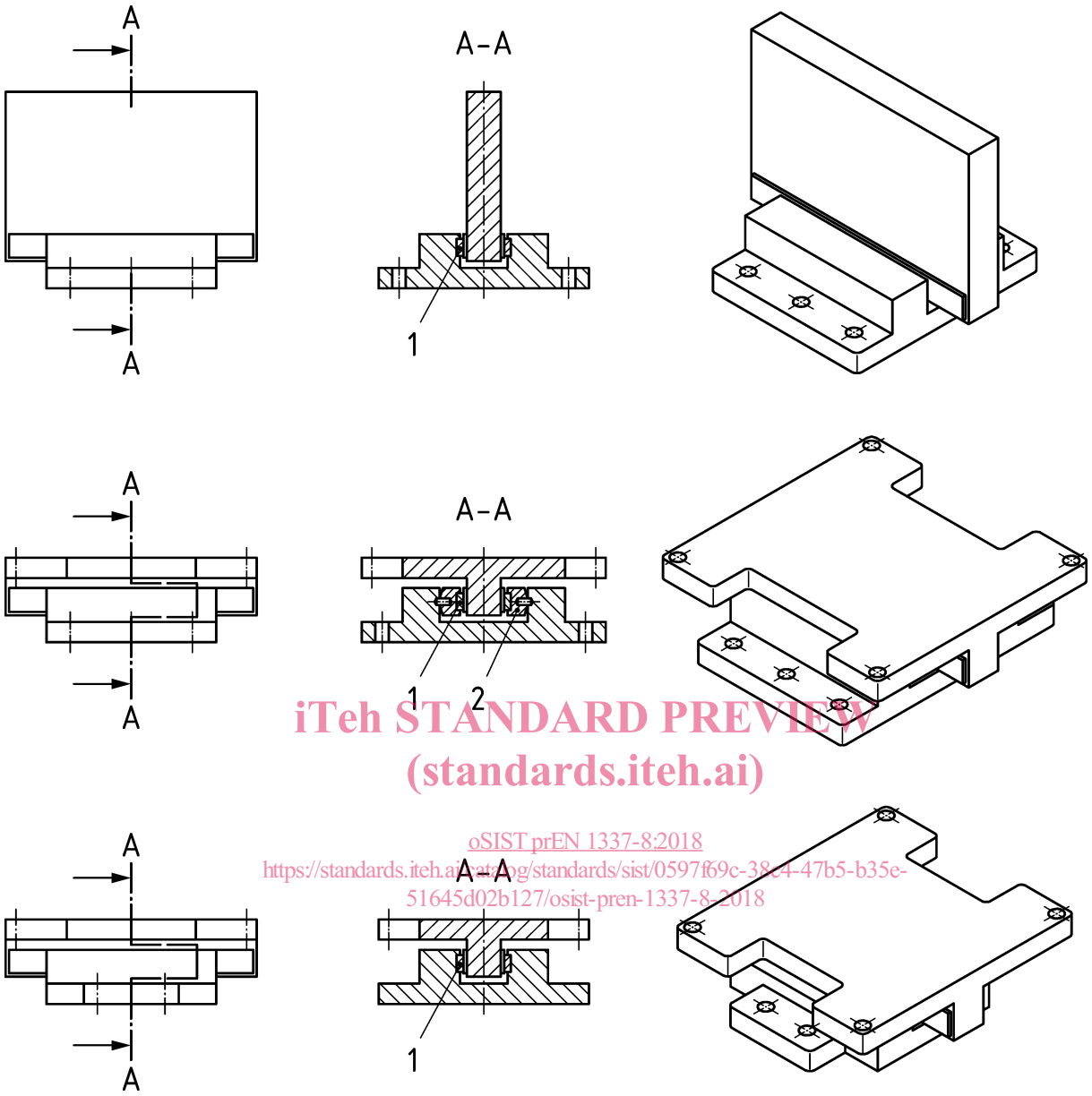
Figure 1 — Typical restraint bearings

4.2 Guide bearings

The guide bearing consists of ferrous components with sliding elements (guides) and, where necessary, tilting elements.

The guide bearing transmits forces in either the x- or y-direction according to prEN 1337-1:2018 and allows movements in all other directions and rotations.

Typical guide bearings are shown in Figure 2.



Key

1 indicates sliding elements

2 indicates tilting elements

Figure 2 — Typical guide bearings

5 Material Properties

The materials used for the load transfer in sliding contact surfaces shall comply with prEN 1337-2:2018.

Guide bearings and restraint bearings shall be manufactured from ferrous materials in accordance with one of the following standards: the EN 10025 series, EN 10083-3, EN 10088-2, EN 10340.

6 Design

prEN 1337-1:2018 applies.

The restraint bearing shall be designed to transmit forces in the x-y-plane according to prEN 1337-1:2018 and to allow movements in the z-direction and rotations.

The guide bearing shall be designed to transmit forces in either the x- or y-direction according to prEN 1337-1:2018 and to allow movements in all other directions and rotations.

In addition to the design requirements given in prEN 1337-2:2018 the ferrous components shall be designed in accordance with the relevant standards, e.g. the EN 1993 series for structural steel. For design and verification of contact surfaces in load bearing restraining rings the design rules given in prEN 1337-5:2018 shall be followed.

The frictional resistance shall be determined using the coefficients of friction given in prEN 1337-2:2018.

Internal forces and moments acting on the sliding surfaces due to frictional resistance, externally applied horizontal loads and the effects of rotations and translations shall be taken into account.

The vertical design of movement of restraint or guide bearings determined with the design effects from prEN 1337-1:2018 shall be increased with:

— 15 mm upwards;

— 10 mm downwards.

The minimum base plate thickness t shall be

— determined from stress and deformation verification; or

— calculated according to Formula (1) or 17 mm, whichever is greater.

$$t = 0{,}025 \times \sqrt{a^2 + b^2} \qquad (1)$$

For horizontal load transfer the most adverse contact point of the components shall be taken into account.

If guide bearings and restraint bearings are combined with other bearings or elements, such as sliding elements, restraints and/or guides, the design shall include the interactive forces.

The selected material shall be verified in accordance with the principles given in the relevant parts of the EN 1993 series, e.g. EN 1993-1-10.

7 Testing

See prEN 1337-2:2018.

8 Manufacturing, assembly and tolerances

See prEN 1337-1:2018.

9 Transport, storage and installation

See prEN 1337-1:2018.

10 In-service inspection

See prEN 1337-1:2018 and prEN 1337-2:2018.

11 Maintenance

See prEN 1337-1:2018.

12 Assessment and verification of constancy of performance

12.1 General

prEN 1337-1:2018, 12.1 applies.

In the case of bearings with sliding elements prEN 1337-2:2018 applies.

12.2 Type Testing

prEN 1337-1:2018, 12.2 applies.

For the type testing (TT), including sampling of the product, Tables 5 applies.

The amount of samples depends on the testing methods used.

In the case of bearings with sliding elements prEN 1337-2:2018 applies.

12.3 Factory production control

prEN 1337-1:2018, 12.3 applies.

In the case of bearings with sliding elements prEN 1337-2:2018 applies.

For further testing of samples shall be carried out in accordance with the prescribed test plan.

Sampling of structural bearings shall be carried out at random based on the production of structural bearings.

For the factory production control Tables 1 and 2 apply.

12.4 Assessment of the performance of the construction product

prEN 1337-1:2018, 12.4 applies.

For the assessment of the performance of the construction product carried out on the basis of testing - including sampling of the product Tables 1 and 2 apply.

In the case of bearings with sliding elements prEN 1337-2:2018 applies.

Table 1 — Control and testing of the roller bearing

Type of control	Subject of control	Control in accordance with	Frequency
Factory production control (FPC)	Dimensions	Manufacturer's drawings	Every bearing
	Surface roughness	prEN 1337-2:2018	
	Corrosion protection	prEN 1337-1:2018	
Type-testing	All tests as given for FPC		Once
	Mechanical characteristics of steel	Clause 5	