BRITISH STANDARD

BS EN
1337-8:2007

Structural bearings

Part 8: Guide Bearings and Restraint Bearings

ICS 91.010.30

BSi
British Standards

National foreword

This British Standard is the UK implementation of EN 1337-8:2007. Together with the other published parts of the BS EN 1337 series, it supersedes BS 5400-9.1:1983 and BS 5400-9.2:1983 which are withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/522, Structural bearings.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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Lager im Bauwesen - Teil 8: Führungslager und Festhaltekonstruktionen

This European Standard was approved by CEN on 23 August 2007.

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Contents

Page

Foreword

This document (EN 1337-8:2007) has been prepared by Technical Committee CEN/TC 167 “Structural bearings”, the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by April 2008, and conflicting national standards shall be withdrawn at the latest by July 2009.

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.

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 EC Directive(s).

For relationship with EC Directive(s), see informative Annex ZA, which is an integral part of this document.

This document was prepared by Working Group 1 and Working Group 3 of CEN TC 167 "Structural Bearings".

This European Standard EN 1337 consists of the following 11 parts:

— Part 1 – General design rules

— 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

— Part 9 – Protection

— Part 10 – Inspection and maintenance

— Part 11 – Transport, storage and installation

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

1 Scope

This Part of this European Standard deals with the requirements for the design and manufacture of Guide Bearings and Restraint Bearings.

Guide Bearings and Restraint Bearings are not intended to transmit vertical loads but they may be combined in one unit with bearings in accordance. EN 1337-1:2000, Table 1.

NOTE 1 Guide Bearings and Restraint Bearings are shown in EN 1337-1:2000, Table 1, No. 8.1 and 8.2. For combined bearings see EN 1337-1:2000, Table 1, bearing Nos. 1.2, 1.3, 1.6, 1.7, 1.8., 3.1, 4.1, 4.2, 4.3, 7.1, 7.3, and 7.4 with restraints and Nos. 1.5, 1.7, 2.2, 3.3, 3.4, 5.2, 6.2 and 7.3 with guides.

NOTE 2 Examples of combined bearings are given in Annex B.

The minimum operating temperature depends on the materials' properties used at the required temperature and the limitations given in the referenced parts of this European Standard.

NOTE 3 In certain circumstances the bearings described in this part of this European Standard may be required to operate in a plane inclined to the horizontal. In such circumstances the terms "vertical" and "horizontal" should be interpreted appropriately.

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.

EN 1337-1:2000, *Structural bearings – Part 1: General design rules*

EN 1337-2:2004, *Structural bearings – Part 2: Sliding elements*

EN 1337-5:2005, *Structural bearings – Part 5: Pot bearings*

EN 1337-9, *Structural bearings – Part 9: Protection*

EN 1990, *Eurocode – Basis of structural design*

EN 10025, Hot rolled products of structural steels

EN 10204, *Metallic products – Types of inspection documents*

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*

prEN 1090-2, *Execution of steel structures and aluminium structures - Part 2: Technical requirements for the execution of steel structures*

ISO 898, *Mechanical properties of fasteners made of carbon steel and alloy steel (all parts)*

ISO 1083, *Spheroidal graphite cast irons — Classification*

ISO 3755, *Cast carbon steels for general engineering purposes*

ISO 4587, *Adhesives - Determination of tensile lap-shear strength or rigid-to-rigid bonded assemblies*

3 Terms, Definitions, Symbols and Abbreviations

3.1 Terms and definitions

For the purpose of this European Standard the following terms and definitions apply.

3.1.1
anchor plate
optional plate that is positioned between the bearing plate and the main structure, normally permanently attached to the latter; provided to allow easy replacement of the bearing

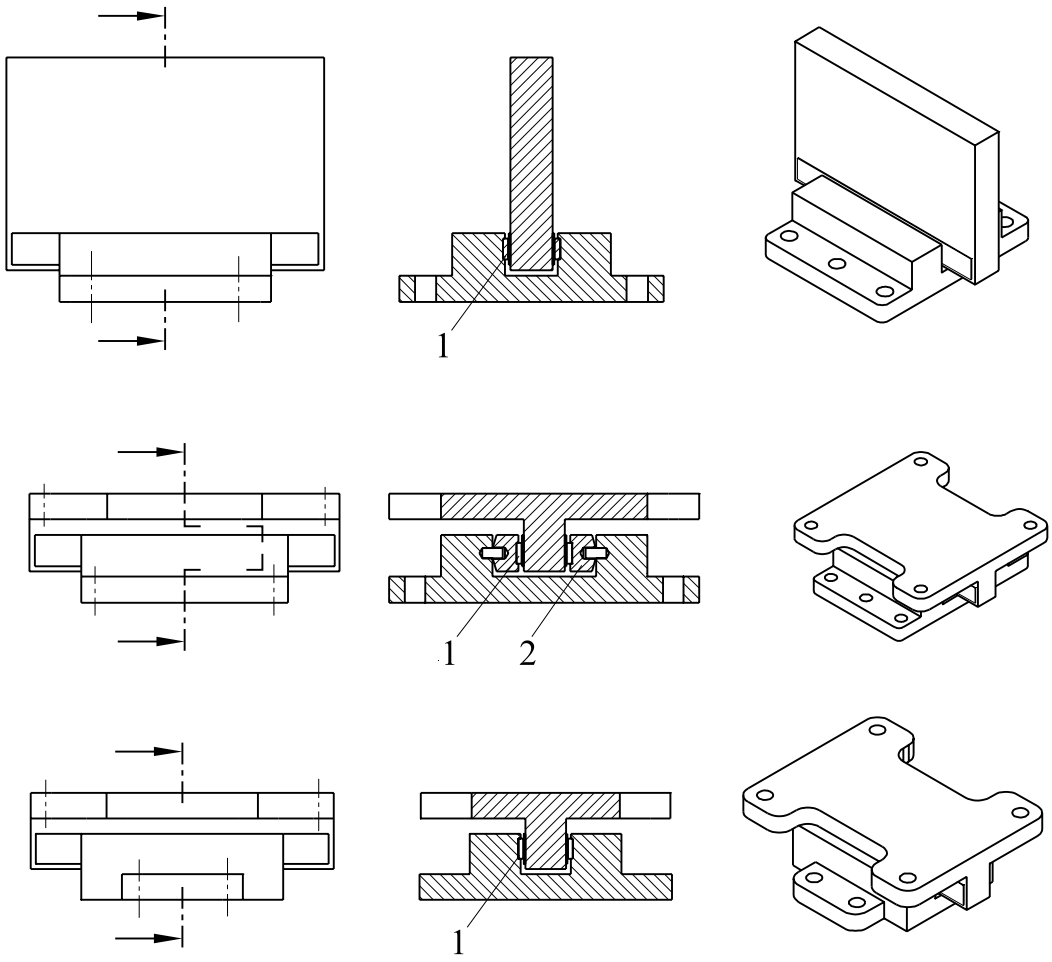
3.1.2
bearing plate
plate that is an integral part of the bearing and forms the main support to which restraints and guides are attached

3.1.3
packing plate
optional plate placed between the bearing plate and the anchor plate for adjusting the overall height of the bearing

3.1.4
sliding element
combination of appropriate materials with flat or curved surfaces in accordance with EN 1337-2

3.1.5
rotational element
element that transmits the specified forces and permits rotations about at least one axis

3.1.6
guide bearing
bearing that provides restraint in one horizontal direction only, accommodates rotations and does not transmit vertical loads (see EN 1337-1:2000, Table 1, No. 8.2).



Key

1 indicates sliding elements

2 indicates rotation elemet

Figure 1 — Examples of guide bearings

3.1.7
restraint bearing
bearing that prevents movements in the horizontal plane, accommodates rotations and does not transmit vertical loads (see EN 1337-1:2000, Table 1, No. 8.1)

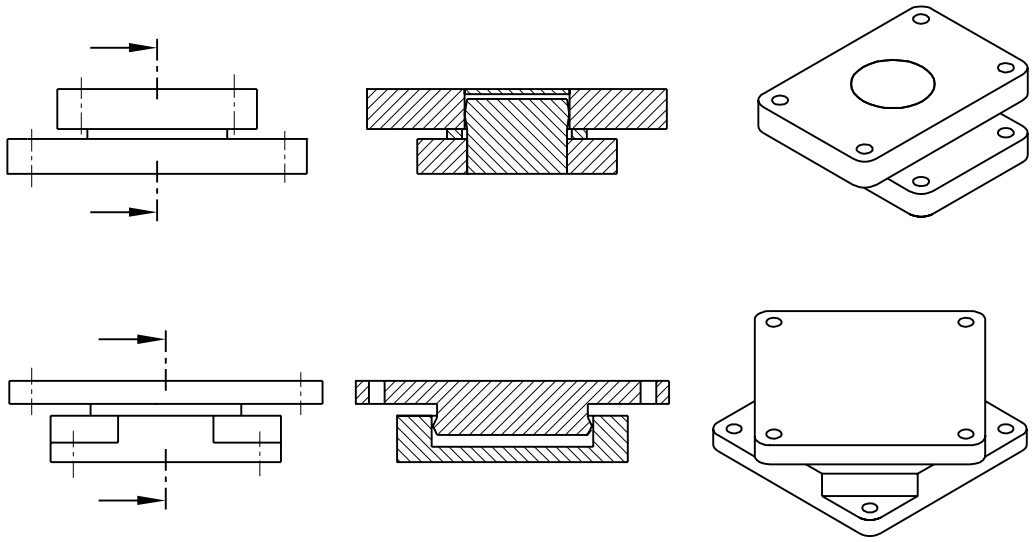


Figure 2 — Examples for restraint bearings

3.2 Symbols and Abbreviations

a is the minor side of an anchor plate or a bearing plate, or

is the smallest dimension of PTFE (see 6.5 and 7.1)..... mm

b is the major side of an anchor plate or a bearing plate ..... mm

CM Composite Material

PTFE Polytetrafluoroethylene

4 Functional Requirements

4.1 General

Guide bearings and restraint bearings shall be designed to:

— transmit horizontal forces;

— allow vertical movements;

— allow movements in one or no horizontal directions;

— allow rotations;

— generate low resistance to movement;

— have durability appropriate to their intended use.

NOTE As a consequence of the above these devices do not transmit applied vertical loads and bending moments.

4.2 Durability

To achieve durability with respect to repeated loading, low and high temperature, corrosion and ozone or chemical substances all requirements of this standard shall be met.

5 Material Properties

5.1 General

The materials shall be selected for their compatibility within the expected temperature range of the structure.

5.2 Ferrous materials

Guide Bearings and Restraint Bearings shall be manufactured from steels in accordance with one of the following standards: EN 10025, EN 10083-3, EN 10088-2, EN 10340, ISO 3755 and ISO 1083.

5.3 Structural Fasteners

Data in specifications and certification of material shall correspond to the requirements relating to stress.

All materials used shall comply with ISO 898.

5.4 Welding

Welding materials shall comply with prEN 1090-2.

5.5 Anchors

Steel for shear studs shall have a guaranteed yield stress of not less than 340 N/mm^2.

Dowels and shear bars shall meet the requirements of sub-clause 5.2 and shall be fixed by welding or by bolts.

6 Design Rules

6.1 General

The design values of the effects (forces, deformations, movements) from the actions at the supports of the structure shall be calculated from the relevant combination of actions according to EN 1990 and sections from 2 to 6 inclusive of both Parts 1 and 2 of EN 1991.

NOTE 1 Until rules for the combination of actions for bearings become available in EN 1990, the guidance given in EN 1993-2 should be used.

The various elements of guide bearings and restraint bearings shall be designed in accordance with the relevant Eurocodes or the other relevant parts of this European Standard.

NOTE 2 For the design of steel parts see EN 1993.

NOTE 3 For composite material see also EN 1337–2:2004, sub-clause 6.3.

For the design of rotational elements Parts 3, 5 (6.2.3 and 6.2.4), 6 and 7 of this European Standard shall be applied, as appropriate.

Guides shall be designed in accordance with EN 1337-2.

NOTE 4 It is recommended that the design values of effects be provided in a bearing schedule as shown in EN 1993-2.

The movement capacity shall be verified by geometrical analysis under the fundamental combination of actions.

The horizontal movement capacity shall be increased by the values given in EN 1337-1:2000, sub-clause 5.4.

The vertical design movement capacity shall be at least the following:

— 15 mm upwards;

— 10 mm downwards.

For the design of the combined units (see 1 Scope) the Part of this European Standard relevant to the device that transmits the vertical load shall be applied.

6.2 Rotational Elements

Contact surfaces in rotational elements with steel - to - steel contact shall be machined to a surface roughness $R_{Y5i} \leq 6,3$ µm in accordance with ISO 4587. In this case the friction coefficient shall be taken as 0,6.

The combination of the materials in contact shall be such as to avoid cold welding.

NOTE Cold welding may be avoided by using the design rules given in EN 1337–5:2005 clause 6.2.3. Notice lubrication and dust protection of the contact zone.

6.3 Minimum plate thickness

If used, the minimum thickness *t* of bearing plates and of anchor plates shall be that:

— determined from stress verification; or

— calculated according to equation (1):

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

— or 17 mm;

whichever is the greatest.

6.4 Connection to Packing and Anchor Plates

The connections between the bearing plates, packing plates, anchor plates and the main structure shall be capable of transmitting the applied forces and allow the bearings to be replaced if necessary.

NOTE Connections may be provided by bolts, high-strength friction grip bolt connections, shear disks, or pins.

Welding shall be used only if easy access is possible and if the welding and its removal are not detrimental to the bearing components.

Internal uplift forces shall be resisted by positive means such as bolts.

Friction shall be taken into account only where a positive clamping force such as pre-stress exists or if the guide bearings or restraint bearings are used in combination with a vertical load bearing on a common bearing plate.

6.5 Clearances

For the determination of clearances, due consideration shall be given to the movement capacity of other devices such as expansion joints, rails, safety fences, pedestrian parapets, services carried through the structure etc.

Unless otherwise specified, the total clearance shall not exceed 2 mm.

This condition shall be verified for the characteristic combination of actions.

6.6 Combination with other bearings and/or elements

When a guide bearing or restraint bearing is combined with bearings or elements from other parts of this European Standard, the characteristics and kinematics of all elements and their interaction, together with the stiffness, moments and eccentricities of the structural components shall be considered.

7 Manufacturing tolerances and corrosion protection

7.1 General

The tolerances shall be determined so that the completed bearing satisfies the design and clearance requirements.

In particular, tolerances for sliding surfaces in rotational elements with steel- to -steel contact shall be in accordance with the requirements of sub-clause 7.3.1 of EN 1337-5:2005.

For bearings using PTFE (Polytetrafluoroethylene), the differential deformation of the PTFE sheet across its smallest dimension “a” shall not exceed 0,2 mm (see EN 1337-2:2004 sub-clause 6.4).

For CM1 (Composite Materials 1) and CM2 (Composite Materials 2) the manufacturer's requirements shall be respected. The maximum deviation from flatness shall be less than 0,05 mm.

7.2 Corrosion protection

Requirements for corrosion protection are given in EN 1337-9.

Where dissimilar materials are used in combination the effects of electrolytic corrosion shall be considered.

8 Conformity evaluation

8.1 General

The tests and inspections specified in this clause shall be carried out to demonstrate conformity of the construction product with this part of EN 1337. In the case of bearings with sliding elements clause 8 of EN 1337-2:2004 also applies.

The given system of evaluation of conformity shall also be used for non-series production.

8.2 Control of the construction product and its manufacture

8.2.1 Initial type testing

The extent of type-testing shall be conducted in accordance with Table 1.

Type testing shall be performed prior to commencing manufacture. It shall be repeated if changes in the construction product or the manufacturing processes occur.

Certificates containing material properties established in clause 5 shall be individually examined during type testing and shall be retained by the manufacturer of the bearing.

Type testing shall be supplemented with the relevant calculations from clause 6 for the evaluation of the final performance of the bearing.

8.2.2 Factory production control

The extent and frequency of factory production control by the manufacturer shall be conducted in accordance with Table 1. In addition, it shall be checked by controlling the inspection certificates that the incoming raw material and components comply with this part of EN 1337.

Detailed requirements for Factory production control are given in the Annex A.

Table 1 — Control and testing of the construction product

Type of control	Subject of control	Control in accordance with	Frequency
Initial type-testing	Dimensions	Manufacturer's Drawing	Once
	Surface roughness	6.2	
	Material properties	5	
Factory production control	Dimensions	Manufacturer's Drawing	Every bearing
	Surface roughness	6.2	
	Material properties	5	
	Corrosion protection	7.2	
	Marking	EN 1337-1:2000, 1.7.3	

8.3 Raw materials and constituents

Compliance with the requirements specified in clause 5 shall be verified by the supplier by means of inspection certificates 3.1 B in accordance with EN 10204.

8.4 Sampling

Random samples shall be taken from the running production of the construction product.

Annex A
(normative)

Factory production control (FPC)

A.1 General

A.1.1 Objects

The manufacturer shall exercise a permanent Factory Production Control (FPC).

NOTE A quality management system based on the relevant part of the EN ISO 9000 series, or equivalent.

The manufacturer is responsible for organising the effective implementation of the FPC system. Tasks and responsibilities in the production control organisation should be documented and this documentation should be kept up-to-date. In each factory the manufacturer may delegate the action to a person having the necessary authority to:

a) identify procedures to demonstrate conformity of the construction product at appropriate stages;

b) identify and record any instance of non-conformity;

c) identify procedures to correct instances of non-conformity.

A.1.2 Documentation

The manufacturer shall draw up and keep up-to-date documents defining the FPC that they apply.

The manufacturer's documentation and procedures shall be appropriate to the construction product and manufacturing process. All FPC systems shall achieve an appropriate level of confidence in the conformity of the construction product. This involves:

a) preparation of documented procedures and instructions relating to FPC operations, in accordance with the requirements of this European Standard (see A.1.3);

b) effective implementation of these procedures and instructions;

c) recording of these operations and their results;

d) use of these results to correct any deviations, repair the effects of such deviations, treat any resulting instances of non-conformity and, if necessary, revise the FPC to rectify the cause of non-conformity.

A.1.3 Operations

FPC includes the following operations:

a) specification and verification of raw materials and constituents;

b) controls and tests to be carried out during the manufacture of the construction product according to a frequency laid down;

c) verifications and tests carried out on finished construction products according to a frequency which may be laid down in the technical specifications and adapted to the product and its conditions of manufacture.

NOTE 1 The operations under b) centre as much on the intermediate states of the construction product as on manufacturing machines and their adjustment and equipment etc. These controls and tests and their frequency are chosen based on type of construction product and composition the manufacturing process and its complexity, the sensitivity of product features to variations in manufacturing parameters etc.

NOTE 2 With regard to operations under c), where there is no control of finished construction products at the time they are placed on the market, the manufacturer should ensure that packaging, and reasonable conditions of handing and storage, do not damage construction products and that the construction product remains in conformity with the technical specifications.

NOTE 3 The appropriate calibrations must be carried out on defined measuring and test instruments.

A.2 Verifications and tests

A.2.1 General comments

The manufacturer shall have or have available the installations, equipment and personnel that enable him or her to carry out the necessary verifications and tests. The manufacturer may, as may their agent, meet this requirement by concluding a sub-contracting agreement with one or more organisations or persons having the necessary skills and equipment.

The manufacturer shall calibrate or verify and maintain the control, measuring or test equipment in good operating condition, whether or not it belongs to them, with a view to demonstrating conformity of the construction product with its technical specification. The equipment shall be used in conformity with the specification or the test reference system to which the specification refers.

A.2.2 Monitoring of conformity

If necessary, monitoring is carried out of the conformity of intermediate states of the product and at the main stages of its dispatch.

This monitoring of conformity focuses where necessary on the construction product throughout the process of manufacture, so that only products having passed the scheduled intermediate controls and tests are dispatched.

A.2.3 Tests

Tests shall be in accordance with the test plan (Table 1) and can be carried out in accordance with the methods indicated in this European Standard.

The manufacturer shall establish and maintain records that provide evidence that the construction products have been tested. These records shall show clearly whether the construction product has satisfied the defined acceptance criteria. Where the construction products fails to satisfy the acceptance measures, the provisions for non-conforming products shall be applied.

A.2.4 Treatment of construction products which do not conform

If control or test results show that the construction product does not meet the requirements, then necessary corrective action shall immediately be taken. Construction products or batches not conforming shall be isolated and properly identified. Once the fault has been corrected, the test or verification in question shall be repeated.

If construction products have been delivered before the results are available, a procedure and record shall be maintained for notifying customers.

A.2.5 Recording of verifications and tests (manufacturer's register)

The results of factory production controls shall be properly recorded in the manufacturer's register. The construction product description, date of manufacture, test method adopted, test results and acceptance criteria shall be entered in the register under the signature of the person responsible for control who carried out the verification.

With regard to any control result not meeting the requirements of this European Standard, the corrective measures taken to rectify the situation (e.g. a further test carried out, modification of manufacturing process, throwing away or putting right of product) shall be indicated in the register.

The records shall be made available.

A.3 Traceability

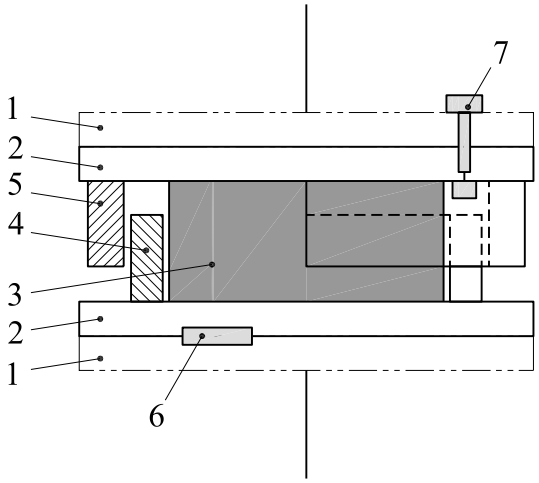
It is the manufacturer's, or his agent's responsibility to keep full record of individual construction products or product batches, including their related manufacturing details and characteristics and to keep records of to whom these construction products or batches were first sold. Individual construction products or batches of products and their related manufacturing details should be completely identifiable and traceable. In certain cases, for example bulk products, a rigorous traceability is not possible.

Annex B
(informative)

Examples of Combined Bearings

The figures in this annex show how restraints may be combined with elastomeric bearings.

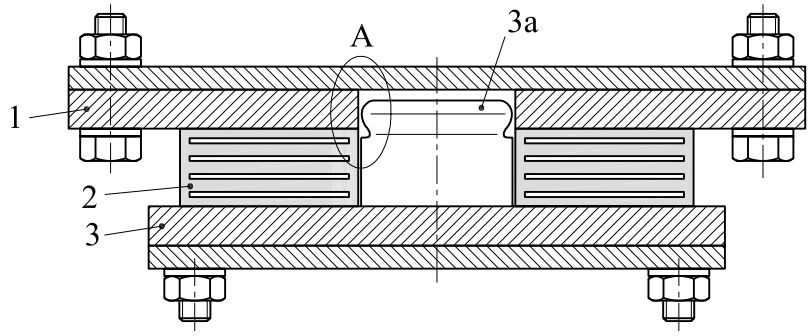
These and other combinations are shown also in EN 1337-1:2000, Table 1 and Figure 1, Nos. 1.2, 1.3, 1.6, 1.7, 1.8, 4.3, 7.1, 7.3, and 7.4.



Key

1 Anchor Plate
2 Bearing Plate
3 Elastomeric Bearing
4 Inner Restraint
5 Outer Restraint
6 Dowel
7 Fixing Bolt

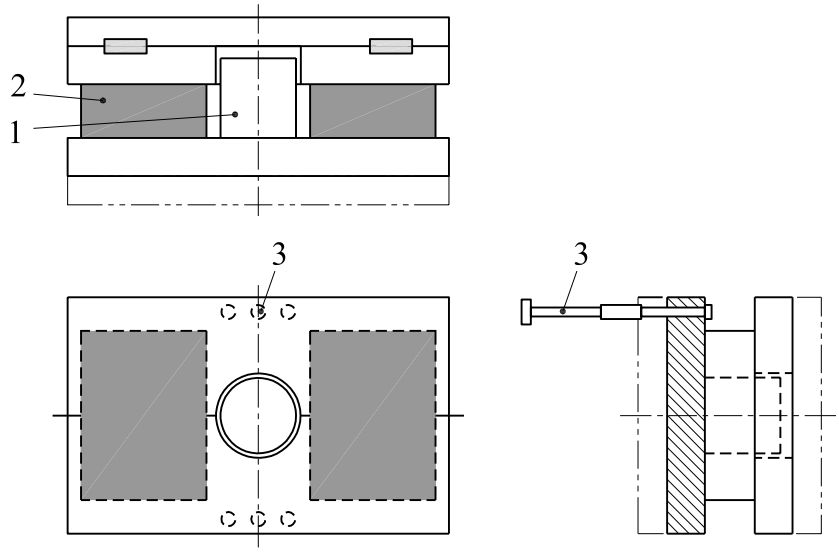
Figure B.1 — Elastomeric Bearing with External Restraint (bearing No. 1.6 in accordance with EN 1337-1:2000 Table 1)



Key

1 Bearing Plate
2 Elastomeric Bearing
3 Bearing Plate
3a Central Bar
A Contact Zone

Figure B.2 — Elastomeric Bearing with Internal Restraint (bearing No. 1.6 in accordance with EN 1337-1:2000 Table 1)



Key

1 Central Bar
2 Elastomeric Bearing
3 Anchor Bar

Figure B.3 — Elastomeric Bearings on a common base plate with Central Restraint

Annex ZA
(informative)

Clauses of this European Standard addressing the provisions of EU Construction Products Directive

ZA.1 Scope and relevant characteristic

This European Standard has been prepared under a mandate M/104 "Structural bearings" as amended by M/132 given to CEN by the European Commission and the European Free Trade Association.

The clauses of this European Standard shown in this annex meet the requirements of the mandate given under the EU Construction Product Directive (89/106/EEC).

Compliance with these clauses confers a presumption of fitness of the construction products covered by this annex for their intended uses indicated herein; reference shall be made to the information accompanying the CE marking.

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

NOTE 1: In addition to any specific clauses relating to dangerous substances contained in this standard, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply.

NOTE 2: An informative database of European and national provisions on dangerous substances is available at the Construction web site on EUROPA (accessed through *http://ec.europa.eu/enterprise/construction/index_en.htm.*

This annex establishes the conditions for the CE marking of the Guide and Restrain bearings intended for the uses indicated in Table ZA.1a or Table ZA.1b and shows the relevant clauses applicable. This annex has the same scope as Clause 1 of this standard and is defined by Table ZA.1a or Table ZA.1b

Table ZA.1a — Relevant clauses for Guide Bearings in buldings and civil engineering works

Clause(s)/sub-clause(s) of this EN	Essential Requirements (ERs) of Directive …	Qualifying remarks/Notes
EN 1337-8:2007 Clauses 4, 5, 6 and 7	Lateral load bearing capacity	Design value in kN
EN 1337-8:2007 Clauses 4, 5, 6 and 7	Rotation capability	Design value in radians
EN 1337-8:2007 Clauses 5, 6 and 7	Friction	Design value
EN 1337-8:2007 Clauses 4, 5, 6 and 7	Durability	Pass/fail

Table ZA.1.b — Relevant caluses for Restraint Bearings in buildings and civil engineering works

Clause(s)/sub-clause(s) of this EN	Essential Requirements (ERs) of Directive …	Qualifying remarks/Notes
EN 1337-8:2007 Clauses 4, 5, 6 and 7 EN 1337-2:2004 Clauses 4 ,5 ,6, 7	Lateral load bearing capacity	Design value in kN
EN 1337-8:2007 Clauses 4, 5, 6 and 7	Rotation capability	Design value in radians
EN 1337-8:2007 Clauses 4, 5, 6 and 7 EN 1337-2:2004 Clauses 4 ,5 ,6, 7	Durability	Pass/fail

The requirement on a certain characteristic is not applicable in those Member States (MSs) where there are no regulatory requirements on that characteristic for the intended use of the product. In this case, manufacturers placing their products on the market of these MSs are not obliged to determine nor declare the performance of their products with regard to this characteristic and the option “No performance determined” (NPD) in the information accompanying the CE marking (see ZA.3) may be used. The NPD option may not be used, however, where the characteristic is subject to a threshold level.

ZA.2 Procedures for attestation of conformity of Guide and Restraint Bearings

ZA.2.1 Systems of attestation of conformity

The systems of attestation of conformity of the Guide and Restrain bearings indicated in Table ZA.1.a or Table ZA.1.b, in accordance with the Decision of the Commission 95/467/EC of 1995-10-24 as given in Annex III of the mandate for "Structural Bearings", is shown in Table ZA.2 for the indicated intended uses and relevant level(s) or class(es):

Table ZA.2 — Systems of attestation of conformity

Product(s)	Intended uses	Level(s) or class(es)	Attestation of conformity systems
Guide Bearings and Restraint Bearings	In building and civil engineering works where requirements on individual bearings are critical 1)	None	1
Guide Bearings and Restraint Bearings	In building and civil engineering works where requirements on individual bearings are not critical 2)	None	3
Critical in the sense that, in the event of not fulfilling the requirements which results in failure of the bearing, the whole works or part thereof can be put beyond those limit states regarded as serviceability and ultimate limit states. Not critical in the sense that, in the event of not fulfilling the requirements which results in failure of the bearing, the whole works or part thereof cannot be put beyond those limit states regarded as serviceability and ultimate limit states.			
System 1: See Directive 89/106/EEC (CPD) Annex III.2.(i), without audit testing of samples. System 3: See Directive 89/106/EEC (CPD) Annex III.2.(ii), Second possibility.			

The attestation of conformity of the Guide and Restrain bearings in Table ZA.1.a to Table ZA.1.b shall be based on the evaluation of conformity procedures indicated in Table ZA.3.a to Table ZA.3.b resulting from application of the clauses of this or other European Standard indicated therein.

Table ZA.3.a — Assignement of evaluation of conformity tasks for Guide and Restrain bearings under system 1

Tasks		Content of the task	Evaluation of conformity clauses to apply
Tasks under the responsibility of the manufacturer	Factory production control (FPC)	Parameters related to all relevant characteristics of relevant Table ZA.1.a or Table ZA.1.b	EN 1337-8:2007 Clause 8.2.2 EN 1337-2:2004 Clause 8.2.3
	Further testing of samples taken at factory	All relevant characteristics of relevant Table ZA.1.a or Table ZA.1.b	EN 1337-8:2007 Clause 8.2.1 EN 1337-2:2004 Clause 8.2.3
Tasks under the responsibility of the product certification body	Initial type testing	Parameters related to all relevant characteristics of relevant Table ZA.1.a or Table ZA.1.b	EN 1337-8:2007 Clause 8.2.1
	Initial inspection of factory and of FPC	Parameters related to all relevant characteristics of relevant Table ZA.1.a or Table ZA.1.b	EN 1337-8:2007 Clause 8.2.2 EN 1337-2:2004 Clause 8.2.3
	Continuous surveillance, assessment and approval of FPC	Parameters related to all relevant characteristics of relevant Table ZA.1.a or Table ZA.1.b	EN 1337-8:2007 Clause 8.2.2 EN 1337-2:2004 Clause 8.2.3

Table ZA.3.b — Assignement of evalutation of conformity tasks for Guide and Restraint Bearings under system 3

Tasks		Content of the task	Evaluation of conformity clauses to apply
Tasks under the responsibility of the manufacturer	Factory production control (FPC)	Parameters related to all relevant characteristics of relevant Table ZA.1.a or Table ZA.1.b	EN 1337-8:2007 Clause 8.2.2 EN 1337-2:2004 Clause 8.2.3
	Initial type testing by the manufacturer	Parameters related to all relevant characteristics of relevant Table ZA.1.a or Table ZA.1.b not carried out by notified test laboratory	EN 1337-8::2007 Clause 8.2.1 EN 1337-2:2004 Clause 8.2.2
	Initial type testing by a notified test laboratory	Parameters related to all relevant characteristics of relevant Table ZA.1.a or Table ZA.1.b	EN 1337-8:2007 Clause 8.2.1 EN 1337-2:2004 Clause 8.2.2

ZA.2.2 Certificate and Declaration of conformity

In case of products with system 1:

When compliance with the conditions of this annex is achieved, the certification body shall draw up a certificate of conformity (EC Certificate of conformity), which entitles the manufacturer to affix the CE marking. The certificate shall include:

— name, address and identification number of the certification body;

— name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;

NOTE 1 The manufacturer may also be the person responsible for placing the product onto the EEA market, if he takes responsibility for CE marking:

— description of the product (type, identification, use, ...);

— provisions to which the product conforms (i.e. Annex ZA of this EN);

— particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions);

— number of the certificate;

— conditions and period of validity of the certificate, where applicable;

— name of, and position held by, the person empowered to sign the certificate.

In addition, the manufacturer shall draw up a declaration of conformity (EC Declaration of conformity) including the following:

— name and address of the manufacturer, or his authorised representative established in the EEA;

— name and address of the certification body;

— description of the product (type, identification, use, ...), and a copy of the information accompanying the CE marking;

NOTE 2 Where some of the information required for the Declaration is already given in the CE marking information, it does not need to be repeated.

— provisions to which the product conforms (i.e. Annex ZA of this EN);

— particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions);

— number of the accompanying EC Certificate of conformity;

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or of his authorised representative.

In case of products with system 3:

When compliance with the conditions of this annex is achieved, the manufacturer or his agent established in the EEA shall prepare and retain a declaration of conformity (EC Declaration of conformity), which entitles the manufacturer to affix the CE marking. This declaration shall include:

— name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;

— description of the product (type, identification, use,...), and a copy of the information accompanying the CE marking;

— provisions to which the product conforms (i.e. Annex ZA of this EN);

— particular conditions applicable to the use of the product, (e.g. provisions for use under certain conditions);

— name and address of the notified laboratory(ies);

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or his authorised representative.

The above mentioned declaration and certificate shall be presented in the official language or languages of the Member State in which the product is to be used.

ZA.3 CE marking and labelling

ZA.3.1 General

The manufacturer or his or her authorised representative established within the EEA is responsible for the affixing of the CE marking. The CE marking symbol to affix shall be in accordance with Directive 93/68/EC and shall be shown on the bearing (or when not possible it may be on the accompanying label, the packaging or on the accompanying commercial documents e.g. a delivery note) .The following information shall accompany the CE marking symbol:

— identification number of the certification body (only for products under system 1);

— name or identifying mark and registered address of the manufacturer (see Note 1 in ZA.2.2);

— last two digits of the year in which the marking is affixed;

— number of the EC Certificate of conformity or factory production control certificate (if relevant);

— reference to this European Standard;

— description of the product: generic name, material, dimensions, … and intended use;

information on those relevant essential characteristics listed in Table ZA.1.a to Table ZA.1.b which are to be declared presented as:

— declared values and, where relevant, level or class (including “pass” for pass/fail requirements, where necessary) to declare for each essential characteristic as indicated in "Notes" in Table ZA.1.a to Table ZA.1.b;

— “No performance determined” for characteristics where this is relevant;

— as an alternative, a standard designation which shows some or all of the relevant characteristics (where the designation covers only some characteristics, it will need to be supplemented with declared values for other characteristics as above).

The “No performance determined” (NPD) option may not be used where the characteristic is subject to a threshold level. Otherwise, the NPD option may be used when and where the characteristic, for a given intended use, is not subject to regulatory requirements in the Member State of destination.

ZA.3.2 Declaration of product properties

This method 2 determines properties relating to essential requirements "mechanical resistance and stability".

Figure ZA.2 gives an example of CE marking with method 2.

NOTE Method 2 is used for the declaration of product properties determined following this standard and EN Eurocodes.

ZA.3.3 Declaration of compliance with given design specification

This method 3 determines properties relating to essential requirements "mechanical resistance and stability".

The Method 3 applies in the following situations:

(a) For cases in which a structural component or kit is produced in accordance with the design details (drawings, material specifications, etc.) prepared by the designer of the works.
(b) For cases in which the producer has designed and produced a structural component or kit following the provisions of the client's order.

Figures ZA.1 and ZA.2 give the model CE marking for the bearing in the case the product is produced according to a design specification in which the properties related to mechanical resistance and stability are determined by means of design provisions applicable to the works.

Referring to the relevant Table ZA.1, the following properties shall be declared:

- load bearing capacity, in kN;
- rotation capability, in radians;
- friction coefficient (for guide bearings only).

NOTE This method is applicable for cases not covered by Method 2.

CE 01234	*CE conformity marking, consisting of the "CE"-symbol given in Directive 93/68/EEC.* *Identification number of the notified body*
AnyCo Ltd, PO Box 21, B-1050 **07** 01234-CPD-00234	*Name or identifying mark and registered address of the producer* *Last two digits of the year in which the marking was affixed* *Certificate number (for system 1 only)*
EN 1337-8 **Restraint bearing** Lateral load bearing capacity: 1000 kN Rotation capability: ± 0,01 rad Durability, conforming	*No. of European Standard* *Description of product and information on regulated characteristics*

Figure ZA 1 — Example of CE marking of restraint bearings

CE 01234	*CE conformity marking, consisting of the "CE"-symbol given in Directive 93/68/EEC.* *Identification number of the notified body*
AnyCo Ltd, PO Box 21, B-1050 **07** 01234-CPD-00234	*Name or identifying mark and registered address of the producer* *Last two digits of the year in which the marking was affixed* *Certificate number (for system 1 only)*
EN 1337-8 **Guide bearing** Lateral load bearing capacity: 1000 kN Rotation capability: ± 0,01 rad Friction coefficient: 0,15 Durability, conforming	*No. of European Standard* *Description of product and information on regulated characteristics*

Figure ZA.2 — Example of CE marking of guide bearings

In addition to any specific information relating to dangerous substances shown above, the product should also be accompanied, when and where required and in the appropriate form, by documentation listing any other legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation.

NOTE 1 European legislation without national derogations need not be mentioned

NOTE 2 Affixing the CE marking symbol means, if a product is subject to more than one directive, then it complies with all applicable directives.

Bibliography

[1] EN 1991-2, *Eurocode 1 – Actions on structures – Part 2: Traffic loads on bridges*.

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[4] EN 1337-7, *Structural bearings – Part 7: Spherical and cylindrical PTFE bearings*.

[5] EN ISO 9000:2005, *Quality management systems – Fundamentals and vocabulary (ISO 9000:2005)*.

[6] EN ISO 9001:2000, *Quality management systems – Requirements (ISO 9001:2000)*.

[7] EN ISO 9004:2000, *Quality management systems – Guidelines for performance improvements (ISO 9004:2000)*.

[8] EN 1993, *Eurocode 3 – Design of steel structures (all parts)*

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