



DPC: 24/30478222 DC

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Date: 14 March 2024

Origin: European

Latest date for receipt of comments: 13 May 2024

Project No. 2023/01779

Responsible committee: B/525/1 Actions (loadings) and basis of design

Interested committees:

Title: Draft BS EN 1990-2 Eurocode. Basis of structural and geotechnical design. Part 2: Assessment of existing structures.

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

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- iii) requires additional national guidance or information

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Full document details: 24/30478222 DC

Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

English Version

**Eurocode - Basis of structural and geotechnical design -
Part 2: Assessment of existing structures**

Eurocodes - Bases de calcul structuraux et
géotechniques - Partie 2: Évaluation des structures
existantes

Eurocode - Grundlagen der Planung von Tragwerken
und geotechnischen Bauwerken - Teil 2: Bewertung
von Bestandsbauten

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 250.

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.

This draft European Standard was established by CEN 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

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.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

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European foreword

This document (prEN 1990-2:2024) has been prepared by Technical Committee CEN/TC 250 “Structural Eurocodes”, the secretariat of which is held by BSI. CEN/TC 250 is responsible for all Structural Eurocodes and has been assigned responsibility for structural and geotechnical design matters by CEN.

This document is currently submitted to the Enquiry.

This document will supersede CEN/TS 17440:2020.

The first generation of EN Eurocodes was published between 2002 and 2007. This document forms part of the second generation of the Eurocodes, which have been prepared under Mandate M/515 issued to CEN by the European Commission and the European Free Trade Association.

The Eurocodes have been drafted to be used in conjunction with relevant execution, material, product and test standards, and to identify requirements for execution, materials, products and testing that are relied upon by the Eurocodes.

The Eurocodes recognize the responsibility of each Member State and have safeguarded their right to determine values related to regulatory safety matters at national level through the use of National Annexes.

0 Introduction

0.1 Introduction to the Eurocodes

The Structural Eurocodes comprise the following standards generally consisting of a number of Parts:

- EN 1990, Eurocode — Basis of structural and geotechnical design
- EN 1991, Eurocode 1 — Actions on structures
- EN 1992, Eurocode 2 — Design of concrete structures
- EN 1993, Eurocode 3 — Design of steel structures
- EN 1994, Eurocode 4 — Design of composite steel and concrete structures
- EN 1995, Eurocode 5 — Design of timber structures
- EN 1996, Eurocode 6 — Design of masonry structures
- EN 1997, Eurocode 7 — Geotechnical design
- EN 1998, Eurocode 8 — Design of structures for earthquake resistance
- EN 1999, Eurocode 9 — Design of aluminium structures
- New parts are under development, e.g. Eurocode for design of structural glass

The Eurocodes are intended for use by designers, clients, manufacturers, constructors, relevant authorities (in exercising their duties in accordance with national or international regulations), educators, software developers, and committees drafting standards for related product, testing and execution standards.

NOTE Some aspects of design are most appropriately specified by relevant authorities or, where not specified, can be agreed on a project-specific basis between relevant parties such as designers and clients. The Eurocodes identify such aspects making explicit reference to relevant authorities and relevant parties.

0.2 Introduction to EN 1990 (all parts)

EN 1990 (all parts) gives the principles and requirements for safety, serviceability, robustness, and durability of new structures and existing structures that are common to all Eurocodes parts and are to be applied when using them.

EN 1990 is subdivided in various parts:

EN 1990-1 *Eurocode — Basis of structural and geotechnical design — Part 1: New structures*

EN 1990-2 *Eurocode — Basis of structural and geotechnical design — Part 2: Assessment of existing structures*

0.3 Introduction to EN 1990-2

The Eurocodes comprise rules that are primarily intended for the design of new structures, although the principles of EN 1990-1 can also be applied for existing structures, with additional provisions. EN 1990-2 supplies those additional provisions that enable the structural assessment of existing structures.

EN 1990-2 includes provisions related to using updated data for basic variables and updated structural models.

EN 1990-2 includes rules for the assessment of structures in case of interventions, as well as provisions for the assessment of retained parts from the existing structure.

0.4 Verbal forms used in the Eurocodes

The verb “shall” expresses a requirement strictly to be followed and from which no deviation is permitted in order to comply with the Eurocodes.

The verb “should” expresses a highly recommended choice or course of action. Subject to national regulation and/or any relevant contractual provisions, alternative approaches could be used/adopted where technically justified.

The verb “may” expresses a course of action permissible within the limits of the Eurocodes.

The verb “can” expresses possibility and capability; it is used for statements of fact and clarification of concepts.

0.5 National Annex for EN 1990-2

National choice is allowed in this document where explicitly stated within notes. National choice includes the selection of values for Nationally Determined Parameters (NDPs).

The national standard implementing EN 1990-2 can have a National Annex containing all national choices to be used for the design of buildings and civil engineering works to be constructed in the relevant country.

When no national choice is given, the default choice given in this document is to be used.

When no national choice is made and no default is given in this document, the choice can be specified by a relevant authority or, where not specified, agreed for a specific project by appropriate parties.

National choice is allowed in EN 1990-2 through notes to the following clauses:

4(1)	4(2)	5(1)	5(4)
6(1)	10.1(2)	10.2(1)	11(2)
11(3)			

National choice is allowed in EN 1990-2 on the application of the following informative annex:

Annex A

The National Annex can contain, directly or by reference, non-contradictory complementary information for ease of implementation, provided it does not alter any provisions of the Eurocodes.

1 Scope

1.1 Scope of EN 1990-2

(1) This document provides additional provisions to EN 1990-1 to cover the assessment of existing structures, including geotechnical structures, and the general principles for interventions.

NOTE This document is based on the general requirements and principles of structural reliability provided in EN 1990-1.

(2) Unless otherwise specified, EN 1990-1 applies.

(3) This document covers general principles regarding actions for assessment, complementing EN 1991 (all parts).

NOTE Provisions for seismic actions due to earthquake are provided in EN 1998-3.

(4) This document does not cover the design of new structural parts that will be integrated into an existing structure.

NOTE For the design of new structural parts, see EN 1990-1.

(5) This document does not provide:

- specific rules for initiation of assessment;
- specific rules on how to undertake interventions that may be carried out as a result of an assessment;
- material-specific technical provisions for existing structures;
- provisions for seismic assessment and retrofitting of existing structures.

NOTE For provisions for seismic assessment and retrofitting of existing structures, see EN 1998-3.

1.2 Assumptions

(1) The assumptions given in prEN 1990-1:2024, 1.2 apply.

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.

NOTE See the Bibliography for a list of other documents cited that are not normative references, including those referenced as recommendations (i.e. in 'should' clauses), permissions ('may' clauses), possibilities ('can' clauses), and in notes.

prEN 1990-1:2024, *Eurocode — Basis of structural and geotechnical design — Part 1: New structures*

3 Terms, definitions and symbols

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1990-1 and the following apply.

3.1.1

existing structure

any structure that physically (materially) exists

3.1.2

heritage structure

existing structure that has been recognized by the relevant authorities for its historical, cultural or societal value

3.1.3

assessment of an existing structure

verification of the reliability of an existing structure

3.1.4

condition survey

acquiring and verifying information on the current state of an existing structure and its boundary conditions

Note 1 to entry: A condition survey can include geometrical properties and material testing.

3.1.5

inspection

on-site non-destructive examination of an existing structure with the objective of establishing its present condition and updating information

3.1.6

investigation

collection and evaluation of information through inspection, document search, measurement, material testing, load testing or other testing

Note 1 to entry: For definition of ground investigation, see EN 1997-2.

3.1.7

monitoring

frequent or continuous observation of the structural condition, structural performance or actions

3.1.8

load testing

test of a structure or part thereof by loading to evaluate its structural performance or properties

3.1.9

damage

unfavourable change in the conditions of a structure that can adversely affect structural performance

3.1.10

defect

deficiency of a structure resulting from errors during design, construction, prior intervention or lack of maintenance that adversely affects the structural performance

3.1.11**deterioration**

process that adversely affects the structural performance over time

EXAMPLE For example due to:

- chemical, physical or biological actions;
- repeated actions such as those causing fatigue;
- wear due to use;
- settlements of the ground.

3.1.12**remaining service life**

period for which an existing structure is intended/expected to operate with planned maintenance

3.1.13**rehabilitation**

structural intervention (i.e. repair, upgrade) to reach compliance with required structural performance

3.1.14**updating**

process of supplementing available information with new information for assessment

3.1.15**upgrading**

modifications to an existing structure to improve its structural performance

3.2 Symbols and abbreviations

For the purposes of this document, the symbols and abbreviations given in EN 1990-1 and the following apply.

3.2.1 Latin upper-case letters

$E(.)$	expectation
F	local or global structural failure represented by a limit state
I	inspection information, formulated as a notional limit state function
$P(.)$	probability of $(.)$
P_{ft}	target probability of failure for a given reference period
S	non-failure or survival event
$V(\mu)$	coefficient of variation V of the mean value μ
$V(\sigma)$	coefficient of variation V of the standard deviation σ