

Handläggande organ

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Fastställt

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Eurocode 1: Grundläggande dimensioneringsregler och laster – Del 2-2: Brandpåverkan

Eurocode 1: Basis of design and actions on structures – Part 2-2: Actions on structures exposed to fire

Eurocode 1: Grundläggande dimensioneringsregler och laster – Del 2-2: Brandpåverkan

Eurocode 1: Basis of design and actions on structures – Part 2-2: Actions on structures exposed to fire

Den europeiska förstandaren ENV 1991-2-2: 1994 gäller som svensk standard och publiceras i form av en svensk försöksstandard, som innehåller den engelska versionen av ENV 1991-2-2

Försöksstandarden förutsätter att den tillämpas i kombination med reglerna i ett svenskt anpassningsdokument, NAD, till standarden. Boverket i samråd med Banverket och Vägverket ger ut NAD-dokumentet.

ENV1991-2-2 kommer att revideras och delvis omarbetas i samband med att den publiceras som europastandard, EN. Det finns för närvarande inga planer på att översätta försöksstandarden till svenska.

Del 2-2 är en del av sammanlagt 11 delar för olika typer av laster eller påverkningar.

Enligt 1:5 i Boverkets Konstruktionsregler BKR 94 (BFS 1993:58) godtages metoder och konstruktionslösningar enligt denna försöksstandard som alternativ till sådana som anges i BKR 94, med tillägg och ändringar angivna i tillhörande NAD.

ICS 91.040.00

Standarder kan beställas hos SIS som även lämnar allmänna upplysningar om svensk och utländsk standard.
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

ENV 1991-2-2

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Descriptors: buildings, structures, design, computation, fire resistance

English version

**Eurocode 1: Grundläggande dimensioneringsregler
och laster – Del 2-2: Brandpåverkan**

Eurocode 1 – Bases du calcul et actions sur les structures – Partie 2-2: Actions sur les structures – Actions sur les structures exposées au feu

Eurocode 1 – Grundlagen der Tragwerksplanung und Einwirkungen auf Tragwerke – Teil 2-2: Einwirkungen auf Tragwerke – Einwirkungen im Brandfall

This European Prestandard (ENV) was approved by CEN on 1993-06-30 as a prospective standard for provisional application. The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into an European Standard (EN).

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

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

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Contents	Page
Foreword	4
Objectives of the Eurocodes	4
Background to the Eurocode programme	4
Eurocode programme	4
National Application Documents (NAD's)	5
Matters specific to this Prestandard	6
1 General	8
1.1 Scope	8
1.1.1 Scope of ENV 1991 - Eurocode 1	8
1.1.2 Scope of ENV 1991-2-2 Actions on structures exposed to fire	8
1.1.3 Further Parts of ENV 1991	9
1.2 Normative references	9
1.3 Distinction between principles and application rules	10
1.4 Definitions	10
1.5 Notations	14
2 Design procedure and classification of actions	17
3 Fire design situations	18
3.1 Accidental situations	18
3.2 Design fire	18
3.3 Exposure to fire	18
3.4 Post-fire situations	19
4 Actions for temperature analysis (thermal actions)	20
4.1 General rules	20
4.2 Nominal temperature-time curves	21
4.2.1 General	21
4.2.2 Standard temperature-time curve	22
4.2.3 External fire curve	22
4.2.4 Hydrocarbon curve	23
4.3 Parametric fire exposure	23
5 Actions for structural analysis (mechanical actions)	24

Annexes

A	Parametric fire exposure (informative)	25
B	Parametric temperature-time curves (informative)	27
C	Thermal actions for external members - simplified calculation method (informative)	31
D	Fire load densities (informative)	43
E	Equivalent time of fire exposure (informative)	49
F	Basis of design - supplementary clauses to ENV 1991-1 for the structural analysis in fire design situations (normative)	53

Foreword

Objectives of the Eurocodes

(1) The "Structural Eurocodes" comprise a group of standards for the structural and geotechnical design of buildings and civil engineering works.

(2) They cover execution and control only to the extent that is necessary to indicate the quality of the construction products, and the standard of the workmanship, needed to comply with the assumptions of the design rules.

(3) Until the necessary set of harmonised technical specifications for products and for methods of testing their performance are available, some of the Structural Eurocodes cover some of these aspects in informative annexes.

Background to the Eurocode programme

(4) The Commission of the European Communities (CEC) initiated the work of establishing a set of harmonized technical rules for the design of building and civil engineering works which would initially serve as an alternative to the different rules in force in the various member states and would ultimately replace them. These technical rules became known as the "Structural Eurocodes".

(5) In 1990, after consulting their respective member states, the CEC transferred the work of further development, issue and updating of the Structural Eurocodes to CEN, and the EFTA Secretariat agreed to support the CEN work.

(6) CEN Technical Committee CEN/TC250 is responsible for all Structural Eurocodes.

Eurocode programme

(7) Work is in hand on the following Structural Eurocodes, each generally consisting of a number of parts:

EN 1991	Eurocode 1	Basis of design and 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 alloy structures

(8) Separate Sub-Committees have been formed by CEN/TC250 for the various Eurocodes listed above.

(9) This Part of Eurocode 1 is being published as a European Prestandard (ENV) with an initial life of three years.

(10) This Prestandard is intended for experimental application and for the submission of comments.

(11) After approximately two years CEN members will be invited to submit formal comments to be taken into account in determining future actions.

(12) Meanwhile feedback and comments on this Prestandard should be sent to the Secretariat of CEN/TC250/SC1 at the following address:

until end May 1995:
SNV / SIA
Selnaustrasse 16
Postfach
CH-8039 ZURICH
SWITZERLAND

from June 1995:
SIS / BST
Box 5630
S- 114 86 Stockholm
SWEDEN

or to your National Standards Organization.

National Application Documents (NAD's)

(13) In view of the responsibilities of authorities in member countries for safety, health and other matters covered by the essential requirements of the Construction Products Directive (CPD), certain safety elements in this ENV have been assigned indicative values which are identified by ("boxed values"). The authorities in each member country are expected to review the "boxed values" and may substitute alternative definitive values for these safety elements for use in national application.

(14) Some of the supporting European or international standards may not be available by the time this Prestandard is issued. It is therefore anticipated that a National Application Document (NAD) giving any substitute definitive values for safety elements, referencing compatible supporting standards and providing guidance on the national application of this Prestandard, will be issued by each member country or its Standards Organization.

(15) It is intended that this Prestandard is used in conjunction with the NAD valid in the country where the building or civil engineering works is located.

Matters specific to this Prestandard

(16) The scope of Eurocode 1 is defined in clause 1.1.1 and the scope of this Part of Eurocode 1 is defined in 1.1.2. Additional Parts of Eurocode 1 which are planned are indicated in clause 1.1.3.

(17) This Part is complemented by a number of annexes, some normative and some informative. The normative annexes have the same status as the sections to which they relate.

(18) The general objectives of fire protection are to limit risks with respect to the individual and society, neighbouring property, and where required, directly exposed property, in the case of fire.

(19) Construction Products Directive 89/106/EEC gives the following essential requirement for the limitation of fire risks:

"The construction works must be designed and built in such a way, that in the event of an outbreak of fire

- the load-bearing capacity of the construction can be assumed for a specified period of time;
- the generation and spread of fire and smoke within the works are limited;
- the spread of fire to neighbouring construction works is limited;
- the occupants can leave the works or can be rescued by other means;
- the safety of rescue teams is taken into consideration".

(20) According to the Interpretative Document "Safety in Case of Fire" the essential requirement may be observed by following various fire safety strategies, including passive and active fire protection measures.

(21) The Structural Eurocodes deal with specific aspects of passive fire protection in terms of designing structures and parts thereof for adequate load-bearing capacity and for limiting fire spread as relevant.

(22) Required functions and levels of performance are generally specified by the national authorities - mostly in terms of standard fire resistance rating. Where fire safety engineering for assessing passive and active measures is accepted,

requirements by authorities will be less prescriptive and may allow for alternative strategies.

(23) It is recognized, however, that fire safety engineering calls for more general fire models than included in this document. Such fire models may be given in future supplements, which will be prepared after prenormative research is completed.

(24) On the other hand it is also recognized, that the acceptance of fire models by national authorities differs throughout Europe and that present national regulations may only allow for a design for standard fire resistance requirements.

(25) Therefore this document mainly covers thermal actions arising from the standard temperature-time curve and other nominal temperature-time curves. Physically based (parametric) thermal actions are only dealt with where simplified analytical models or direct design data are available; they are given in informative annexes. The field of application for the various thermal actions and design procedures, including national supplements, will be specified by the national authorities.

(26) Application of the thermal actions according to this Part and the design of structures according to the fire design Parts of ENV 1992 to 1996 and ENV 1999 is illustrated in table 1.

Table 1: Design procedures

Thermal actions given in ENV 1991, Part 2.2:	according to national specifications:	design by prescriptive rules/ tabulated data	design by calculation models
	for verifying	given in ENV 1992-1996, 1999	given in ENV 1992-1996, 1999
standard temperature-time curve	standard fire resistance requirements	as relevant ¹⁾ or from fire resistance tests	as relevant ¹⁾
other nominal temperature-time curves	other nominal fire resistance requirements	mainly from fire resistance tests	as relevant ¹⁾
standard temperature-time curve	fire resistance - for equivalent time of fire exposure	as relevant ¹⁾	as relevant ¹⁾
parametric fire exposure	fire resistance - for specified period of time or - for entire fire duration	not applicable	as relevant ¹⁾
¹⁾ depending on the extent to which prescriptive rules and calculation models are given in the respective fire Parts and the relevant scope of application			