DIN EN 13381-3

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ICS 13.220.50; 91.080.40

Supersedes
DIN V ENV 13381-3:2003-09

Test methods for determining the contribution to the fire resistance of structural members – Part 3: Applied protection to concrete members; English version EN 13381-3:2015, English translation of DIN EN 13381-3:2015-06

Prüfverfahren zur Bestimmung des Beitrages zum Feuerwiderstand von tragenden Bauteilen –
Teil 3: Brandschutzmaßnahmen für Betonbauteile;
Englische Fassung EN 13381-3:2015,
Englische Übersetzung von DIN EN 13381-3:2015-06

Méthodes d'essai pour déterminer la contribution à la résistance au feu des éléments de construction –
Partie 3: Protection appliquée aux éléments en béton;
Version anglaise EN 13381-3:2015,
Traduction anglaise de DIN EN 13381-3:2015-06

Document comprises 68 pages

Translation by DIN-Sprachendienst.
In case of doubt, the German-language original shall be considered authoritative.

A comma is used as the decimal marker.

National foreword

This document (EN 13381-3:2015) has been prepared by Technical Committee CEN/TC 127 “Fire safety in buildings” (Secretariat: BSI, United Kingdom).

The responsible German body involved in its preparation was the *DIN-Normenausschuss Bauwesen* (DIN Standards Committee Building and Civil Engineering), Working Committee NA 005-52-02 AA *Brandverhalten von Baustoffen und Bauteilen — Bauteile.*

Amendments

This standard differs from DIN V ENV 13381-3:2003-09 as follows:

a) the prestandard status has been changed to that of a full standard;

b) the standard has been editorially revised;

c) Clause 1 “Scope” has been modified;

d) Clause 3 “Terms and definitions” has been extended;

e) Annex D (normative) “Calculation of stresses in standard concrete structures” has been added;

f) Annex E (informative) “Calculation of the load to apply on concrete member” has been added;

g) the bending moment has been modified to be adapted to the thickness of the slab;

h) the location of the thermocouple used within beams for the calculation of equivalent thickness of concrete is now at 25 mm away from the beam bottom corner instead of 55 mm;

i) the graphs to be used for the determination of equivalent concrete thickness for slabs have been improved and extended and are directly available in the standard.

Previous editions

DIN V ENV 13381-3: 2003-09

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13381-3

April 2015

ICS 13.220.50; 91.080.40

Supersedes ENV 13381-3:2002

English Version

Test methods for determining the contribution to the fire resistance of structural members - Part 3: Applied protection to concrete members

Méthodes d'essai pour déterminer la contribution à la résistance au feu des éléments de construction - Partie 3: Protection appliquée aux éléments en béton

Prüfverfahren zur Bestimmung des Beitrages zum Feuerwiderstand von tragenden Bauteilen - Teil 3: Brandschutzmaßnahmen für Betonbauteile

This European Standard was approved by CEN on 8 November 2014.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 13381-3:2015) has been prepared by Technical Committee CEN/TC 127 “Fire safety in buildings”, the secretariat of which is held by BSI.

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 October 2015 and conflicting national standards shall be withdrawn at the latest by October 2015.

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 supersedes ENV 13381-3:2002.

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 89/106/EEC.

The dimension tolerances regarding the manufacturing of the specimen indicated in the ENV 13381-3:2002 led to tensile stress values of 290 +/- 30 N/mm² in the reinforcement bars depending on the type of structural member. In order to harmonize the mechanical constraint applied on the structural member, the bending moment has been modified to produce the same tensile stress on reinforcement bars equal to 300 N/mm². This value is corresponding to 60 % of the grade of the steel to be used. Due to this approach, the result of tests carried out according to ENV 13381-3:2002 can be taken into account for assessment according to the present document.

In comparison with ENV 13381-3:2002, the following significant changes have been made:

— the bending moment has been modified to be adapted to the thickness of the slab;

— the location of thermocouple used within beams for the calculation of equivalent thickness of concrete is now at 25 mm away from the beam bottom corner instead of 55 mm;

— the graphs to be used for the determination of equivalent concrete thickness for slabs has been improved and extended and is directly available in the standard.

This European Standard is one of a series of standards for evaluating the contribution to the fire resistance of structural members by applied fire protection materials. The other parts of this standard are:

— *Part 1: Horizontal protective membranes*

— *Part 2: Vertical protective membranes*

— *Part 4: Applied protection to steel members*

— *Part 5: Applied protection to concrete/profiled sheet steel composite members*

— *Part 6: Applied protection to concrete filled hollow steel columns*

— *Part 7: Applied protection to timber members*

— *Part 8: Applied reactive protection to steel members*

Annexes A, B and C are normative.