INTERNATIONAL STANDARD

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Fire-resistance tests — Elements of building construction —

Part 6: Specific requirements for beams

Essais de résistance au feu — Éléments de construction —

Partie 6: Exigences spécifiques relatives aux poutres

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Foreword

ISO (the International Organization for Standardization) is a world wide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 834 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 834-6 was prepared by Technical Committee ISO/TC 92, *Fire safety*, Subcommittee SC 2, *Fire containment.*

ISO 834 consists of the following parts, under the general title *Fire-resistance tests — Elements of building construction:*

— *Part 1: General requirements*

— *Part 3: Commentary on test method and test data application*

— *Part 4: Specific requirements for loadbearing vertical separating elements*

— *Part 5: Specific requirements for loadbearing horizontal separating elements*

— *Part 6: Specific requirements for beams*

— *Part 7: Specific requirements for columns*

— *Part 8: Specific requirements for non-loadbearing vertical separating elements*

— *Part 9: Specific requirements for non-loadbearing horizontal separating elements*

— *Part 10: Method to determine the contribution of applied protection materials to structural metallic elements*

— *Part 11: Method to assess the contribution of applied protection materials to structural metallic elements*

Annexes A and B of this part of ISO 834 are for information only.

Introduction

This part of ISO 834 contains specific requirements for fire resistance testing which are unique to the elements of building construction described as beams. The requirements for these loadbearing elements are intended to be applied in appropriate conjunction with the detailed and general requirements contained in ISO 834-1.

Fire-resistance tests — Elements of building construction —

Part 6:
Specific requirements for beams

1 Scope

This part of ISO 834 specifies the procedures to be followed for determining the fire resistance of beams, when tested on their own.

Beams are normally tested with their underside and two vertical sides fully exposed to heating. However, when the exposure is from four sides or less than three sides, appropriate exposure conditions are necessary. Beams which are part of a floor construction are tested with the floor construction as described in ISO 834-5 and are subject to evaluation of integrity and insulation.

The application of this test to other untested forms of construction is acceptable when the construction complies with the direct field of application as given in this part of ISO 834 or when subjected to an extended application analysis in accordance with ISO/TR 12470. Since ISO/TR 12470 gives only general guidelines, specific extended application analyses are to be performed only by persons expert in fire-resistant constructions.

General guidance on this test method is given in annex A.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 834. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 834 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 834-1:1999, *Fire-resistance tests — Elements of building construction — Part 1: General requirements.*

ISO/TR 12470, *Fire resistance tests — Guidance on the application and extension of results*.

ISO/IEC 13943, *Fire safety — Vocabulary*.

3 Terms and definitions

For the purposes of this part of ISO 834, the terms and definitions given in ISO 834-1 and ISO 13943 and the following apply.

3.1
beams
all horizontally oriented structural members employed in building construction and known variously as beams, joists or girders

NOTE They may be integral with or separate from the structure that they support.

