

DS/EN 1994-1-2 DK NA:2011

National Annex to

Eurocode 4: Design of composite steel and concrete structures

-

Part 1-2: Structural fire design

Foreword

This national annex (NA) is a revision of EN 1994-1-2 DK NA:2007. The layout etc. has been changed to correspond to that of more recent Danish National Annexes. Other changes relate to the contents of Annex H only.

This NA enters into force on 2011-07-01. From 2011-07-01 to 2012-09-01, this NA as well as EN 1994-1-2 DK NA:2007 may be applied.

This NA lays down the conditions for the implementation in Denmark of this Eurocode for construction works in conformity with the Danish Building Act or the building legislation.

The national choices may be in the form of nationally applicable values, an option between methods given in the Eurocode, or the addition of complementary guidance.

This National Annex includes:

- National choices and an overview of all clauses where national choices are allowed
- Descriptions of national choices
- Complementary (non-contradictory) information which may assist the user of the Eurocode.

The numbering refers to the clauses of the Eurocode where national choices are allowed and/or complementary information is given. The heading is identical to the heading of the clause, followed by a clarification, as appropriate.

An overview of possible national choices and clauses containing complementary information

The overview below identifies the clauses where national choices are possible and the applicable/not applicable informative annexes. Furthermore, clauses giving complementary information are identified. Complementary information is given at the end of this document.

| Clause | Subject | National choice | Complementary information |
|-------------|---|-----------------|---------------------------|
| 1.1(16) | Subject – Concrete strength classes | National choice | |
| 2.1.3(2) | Parametric fire exposure | National choice | |
| 2.3(1)P | Design values of material properties - mechanical | National choice | |
| 2.3(2)P | Design values of material properties - thermal | National choice | |
| 2.4.2(3) | Member analysis | National choice | |
| 3.3.2(9) | Thermal properties - Normal weight concrete | National choice | |
| 4.1(1)P | Design procedures | National choice | |
| 4.3.5.1(10) | Composite columns – Structural behaviour | National choice | |
| Annex H | Simple calculation model for concrete filled hollow sections exposed to fire all around the column according to the standard temperature-time curve | National choice | |

NOTE – Unchanged: No national choice is made and recommendations, if any, in the standard are followed.

National choices

1.1(16) Subject – Concrete strength classes

No rules are given for Concrete Strength Classes higher than C50/60.

2.1.3(2) Parametric fire exposure

$\Delta\Theta_1 = 140$ K and $\Delta\Theta_2 = 180$ K.

2.3(1)P Design values of material properties - mechanical

Reference is made to the National Annexes to EN 1992-1-2 and EN 1993-1-2.

2.3(1)P Design values of material properties - thermal

Reference is made to the National Annexes to EN 1992-1-2 and EN 1993-1-2.

2.4.2(3) Member analysis

Figure 2.1 and NOTE 2 are not applicable as partial factors in conflict with the Danish choices are used. η_{fi} shall therefore be calculated for each case.

3.3.2(9) Thermal properties - Normal weight concrete

Reference is made to the Danish National Annex to EN 1992-1-2 for a recommended value of the thermal conductivity of concrete.

4.1(1)P Design procedures

Advanced calculation methods may be applied if they are well-documented, both by theory and by experiments.

4.3.5.1(10) Composite columns – Structural behaviour

Realistic static assessments of support conditions should be used for determining the buckling length.

Annex H Simple calculation model for concrete filled hollow sections exposed to fire all around the column according to the standard temperature-time curve

Annex H can be applied in Denmark if the following condition is fulfilled: the slenderness of the column λ shall be less than or equal to 0,5.

Complementary (non-contradictory) information

None