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Ministry of Housing, Infrastructure and Outlying Districts

## **EN 1991-1-2 GL NA:2025**

National Annex to

### **Eurocode 1: Actions on structures – Part 1-2: General actions – Actions on structures exposed to fire**

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#### **Foreword**

This Greenlandic National Annex (GL NA) is based on DS/EN 1991-1-2 DK NA:2024

#### **Scope**

This Annex is adapted to national, geographical and climatic conditions as well as national legislation, and specifies how EN 1991-1-2:2007 and subsequent corrigenda are to be applied in Greenland.

The Annex provides Greenlandic national choices and complementary information. For any complementary information, it is specified whether it is normative or informative. Normative information comprises requirements to be followed.

The numbering in the Annex refers to the numbering in EN 1991-1-2:2007 or DS/EN 1991-1-2 DK NA:2024.



## Overview of Greenlandic national choices and complementary information

DS/EN 1991-1-2 DK NA:2024 applies with the following deviations and additions:

<b>Clause</b>	<b>Subject</b>	<b>Change</b>
DK NA	References in DK NA	National choice
Annex E(1)	Fire load densities	National choice
4.3.1(2)	Combination rules for actions General rules	Complementary information, Normative
Annex A (1)	Parametric temperature-time curve	Complementary information, Informative
Annex A (8)	Parametric temperature-time curve. Temperature-time curve in large rooms	Complementary information, Informative



## National choices

### References in DK NA

References in DS/EN 1991-1-2 DK NA:2024 to other Danish National Annexes are replaced by references to corresponding Greenlandic National Annexes. Where these do not exist, the Danish National Annexes apply.

### Annex E

#### (1) Fire load densities

To the table of fire load densities related to the surface areas enclosing the fire compartment is added:

Use	$q_{t,d}$
Car park / underground car park	300 MJ/m <sup>2</sup>

NOTE: If the number of parking spaces in car parks is known, the fire load density can alternatively be taken as the 80 % fractile of a car's fire load,  $Q_d = 13.6$  MJ, and with an 80 % filling of parking spaces.



## Complementary information, Normative

### 4.3.1 Combination rules for actions. General rules.

#### (2) Representative value of variable action $Q_1$ .

Note is added: For the choice of whether to use the quasi-permanent value,  $\psi_{2,1} Q_1$ , or a frequent value  $\psi_{1,1} Q_1$ .

For the determination of load reduction factors in case of fire: See EN 1990 GL NA, A1.3.1(8).



## Complementary information, Informative

### Annex A Parametric temperature-time curves

#### (1) Temperature-time curves

The following is added: Approximate method for large fire compartments is given in (8).

#### (8) Temperature-time curve in large rooms

In the case of fire in larger rooms than in (1), the following may be taken as a basis when determining the temperature-time curve:

- (a) Structural members and materials located higher than 4 m above the floor in the fire compartment are not taken into account in the calculation of the fire temperature in accordance with (A.1) if at least 50 % of the opening area is situated below a height of 4 m.
- (b) If the fire compartment has several vertical symmetry planes, only one of the symmetrical parts of the fire compartment should be used.

Note 1: For (8a): Structural members and materials higher than 4 m above the floor in the fire compartment can be e.g. higher parts of walls, possible higher part of an opening area, or the ceiling/ roof structure.

Note 2: For 8b): Symmetry planes are not physical walls and are not considered as openings or walls when calculating the fire load. Symmetry planes are not included in the calculation.

If it is not possible to use the above method to determine the temperature-time curve, the following conservative values can be applied for the design of all structural members, except unprotected steel and aluminium elements:

- design value of the fire load;  $q_{t,d} \geq 200 \text{ MJ/m}^2$ , except in car parks.
- the opening factor,  $O$ , is taken as  $0,02 \text{ m}^{1/2}$ .
- thermal inertia of the fire compartment  $\leq 600 \text{ J}/(\text{m}^2\text{s}^{1/2}\text{K})$ .