

# DS/EN 1999-1-3 DK NA:2011

National Annex to

## **Eurocode 9: Design of aluminium structures - Part 1-3: Structures susceptible to fatigue**

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### **Foreword**

This national annex (NA) is a revision of EN 1999-1-3 DK NA:2007. The revision has been occasioned by the publication of DS/EN 1999-1-3/A1:2011. Furthermore, the layout etc. has been changed to correspond to that of more recent Danish National Annexes.

As from 2012-04-01 this NA shall be used together with DS/EN 1993-1-3:2007 and DS/EN 1999-1-13/A1:2011. From 2011-12-15 to 2012-04-01, this NA as well as EN 1994-1-2 DK NA:2007 may be applied.

Previous versions, addenda and an overview of all National Annexes can be found at [www.eurocodes.dk](http://www.eurocodes.dk)

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. Other parties can put this NA into effect by referring thereto.

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:

- an overview of possible national choices and clauses containing complementary information;
- 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.

## 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
2.1.1(1)	Basic requirements	No choice made	
2.2.1(4)	Safe life design	National choice	
2.3.1(2)	Sources of fatigue loading	No choice made	
2.3.2(6)	Derivation of fatigue loading	National choice	
2.4(1)	Partial factors for fatigue loads	National choice	
3(1)	Materials, constituent products and connecting devices	Unchanged	
4(2)	Durability	No choice made	
5.8.1(1)	Calculation of equivalent stress range for standardised fatigue load models - General	No choice made	
5.8.2(1)	Design value of stress range	No choice made	
6.1.3(1)	Constructional details	No choice made	
6.2.1(2)	Constructional details	National choice	
6.2.1(7)	Classified constructional details	Unchanged	
6.2.1(11)	Classified constructional details	Unchanged	
E(5)	Adhesively bonded joints - $\gamma_{MF}$	National choice	
E(7)	Adhesively bonded joints – Temperature range	Unchanged	
I.2.2(1)	Welded material	No choice made	
I.2.3.2(1)	Pinned joints	No choice made	
I.2.4(1)	Adhesively bonded castings	No choice made	

L.3(2)	Start of inspection and inspection intervals	The clause shall not be applied	
L.4(3) Note 1	Partial factors $\gamma_{MF}$ and the values of $D_{lim}$	The clause shall not be applied	
L.4(3) Note 2	Partial factors $\gamma_{MF}$ and the values of $D_{lim}$	The clause shall not be applied	
L.4(4)	Partial factors $\gamma_{MF}$ and the values of $D_{lim}$	The clause shall not be applied	
L.5(1)	Service category	No choice made	

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

No choice made: The Eurocode does not recommend values, but allows the option of determining national values. Such values have not been chosen.

## National choices

### 2.2.1(4) Safe life design

$D_{lim} = 1,0$  is applied.

### 2.3.2(6) Derivation of fatigue loading

Characteristic values for fatigue loads and frequencies are determined according to DS/EN 1990.

### 2.4(1) Partial factors for fatigue loads

Partial factors for fatigue loads are determined according to the National Annex to DS/EN 1990.

### 6.2.1(2) Classified constructional details

The values of  $\gamma_{Mf}$  shall be:

	CC1	CC2	CC
Damage tolerant	1,00	1,00	1,00
Safe life	1,26	1,54	1,88

### E(5) Adhesively bonded joints

The value  $\gamma_{Mf} = 3,3$  is chosen.

**Complementary (non-contradictory) information.**

None