NAALAKKERSUISUT
GOVERNMENT OF GREENLAND

**Ineqarnermut, Attaveqaasersuutinut Isorliunerusunullu Naalakkersuisoqarfik**
Ministry of Housing, Infrastructure and Outlying Districts

# EN 1993-1-x GL NA:2025

National Annex to
**Eurocode 3: Design of steel structures –**
**Part 1-1: General rules and rules for buildings**

**Part 1-2: Structural fire design**

**Part 1-3: Complementary rules for cold-formed members and sheeting**

**Part 1-4: Complementary rules for stainless steels**

**Part 1-5: Plated structural elements**

**Part 1-6: Strength and stability of shell structures**

**Part 1-7: Strength and stability of shell structures under transverse forces**

**Part 1-8: Joints**

**Part 1-9: Fatigue**

**Part 1-10: Material toughness and through-thickness properties**

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# Foreword

This Greenlandic National Annex (GL NA) replaces:

- EN 1993-1-x GL NA:2024 (Parts 1-1, 1-3, 1-5, 1-8, 1-9, and 1-10).

The Annex is based on:

- DS/EN 1993-1-1 DK NA:2019
- DS/EN 1993-1-2 DK NA:2007
- DS/EN 1993-1-3 DK NA:2019
- DS/EN 1993-1-4 DK NA:2019
- DS/EN 1993-1-5 DK NA:2007
- DS/EN 1993-1-6 DK NA:2021
- DS/EN 1993-1-7 DK NA:2007
- DS/EN 1993-1-8 DK NA:2024
- DS/EN 1993-1-9 DK NA:2007
- DS/EN 1993-1-10 DK NA:2019

# Scope

The Annex is adapted to national, geographical and climatic conditions as well as national legislation and specifies how EN 1993-x-x mentioned below and its amendments are to be applied in Greenland.

- EN 1993-1-1 + AC:2007 with DS/EN 1993-1-1 A1:2014
- EN 1993-1-2:2005 with DS/EN 1993-1-2 AC:2009
- EN 1993-1-3:2007 with DS/EN 1993-1-3/AC:2009, and DS/EN 1993-1-3 AC:2010
- EN 1993-1-4:2007 with DS/EN 1993-1-4:2006 A1:2015, and DS/EN 1993-1-4:2006 A2:2020
- EN 1993-1-5:2007 with DS/EN 1993-1-5/AC:2009, DS/EN 1993-1-5:2006 A1:2017, and DS/EN 1993-1-5:2006 A2:2019
- EN 1993-1-6 + AC:2012 with DS/EN 1993-1-6:2007 A1:2017
- EN 1993-1-7 + AC:2011
- EN 1993-1-8 + AC:2007 with DS/EN 1993-1-8 AC:2009
- EN 1993-1-9 + AC:2007 with DS/EN 1993-1-9 AC:2009
- EN 1993-1-10 + AC:2007 with DS/EN 1993-1-10 AC:2009, and Corr.1:2020

The Annex provides Greenlandic national choices.

The numbering in the Annex refers to the numbering in EN 1993-1-x:20xx or the associated Danish National Annexes as stated above.

# Overview of possible Greenlandic national choices and complementary information

DS/EN 1993-1-1 DK NA:2019, DS/EN 1993-1-2 DK NA:2007, DS/EN 1993-1-3 DK NA:2019, DS/EN 1993-1-4 DK NA:2019, DS/EN 1993-1-5 DK NA:2007, DS/EN 1993-1-6 DK NA:2021, DS/EN 1993-1-7 DK NA:2007, DS/EN 1993-1-8 DK NA:2024, DS/EN 1993-1-9 DK NA:2007, and DS/EN 1993-1-10 DK NA:2019 are applicable with the following national choices and supplementary information:

| Clause | Subject | Change |
|---|---|---|
| DK | References in DK NA | National choice |
| EN 1993-1-1, 6.1(1) | Ultimate limit states, General<br>Application of control class | National choice |
| EN 1993-1-2, 2.4.2(3) NOTES 1-3 | Member analysis – Reduction factor for load combinations | National choice |
| EN 1993-1-3, 2(3)P | Basis of design<br>Application of control class | National choice |
| EN 1993-1-4, 5.1(2)P | Ultimate limit states – General<br>Application of control class | National choice |
| EN 1993-1-4, A.2, Table A.1 | Determination of corrosion resistance factor | National choice |
| EN 1993-1-6, 8.5.2(2) | Buckling limit state (LS3), Stress design<br>Application of control class | National choice |
| EN 1993-1-8, 2.2(2) | Basis of design, General requirements<br>Application of control class | National choice |
| EN 1993-1-9, 1.1(2), NOTE 1 | Scope<br>Execution standard | National choice |

# National choices

**References in DK NA**
References in DS/EN 1993-1-1 DK NA:2019, DS/EN 1993-1-2 DK NA:2007, DS/EN 1993-1-3 DK NA:2019, DS/EN 1993-1-4 DK NA:2019, DS/EN 1993-1-5 DK NA:2007, DS/EN 1993-1-6 DK NA:2021, DS/EN 1993-1-7 DK NA:2007, DS/EN 1993-1-8 DK NA:2024, DS/EN 1993-1-9 DK NA:2007, and DS/EN 1993-1-10 DK NA:2019 to other Danish National Annexes are replaced by references to corresponding Greenlandic National Annexes. Where these do not exist, the Danish National Annexes apply.

**EN 1993-1-1, 6.1(1) Ultimate limit states – General**
For structures covered by the Danish Building Regulations 2024, chap. 1.3, section 6 and 7, the extended control class cannot be applied, and $\gamma_3$ is taken as 1,00.

For the manufacturing of components with attestation level AVCP 1+, 1 and 2+ and with certification for the scope of inspection at least corresponding to provisions in DS/EN 1990 DK NA:2024, Annex F DK NA (7) and (8), $\gamma_3$ may be taken as 0,95.

**EN 1993-1-2, 2.4.2(3) Member analysis – Reduction factor for load combinations**
NOTE 1 is replaced by:
NOTE 1: An example of the relationship between the reduction factor, $\eta_{fi}$, and the load factor, $Q_{k,1}/G_k$, is given in EN 1990 GL NA, A1.3.1(8).

NOTE 2 is replaced by:
NOTE 2: Where the ratio between the characteristic values of variable and permanent loads, $Q_k/G_k$, is ≥ 1,0, a simplified value of $\eta_{fi}$ = 0,65 may be applied, except for areas with imposed loads corresponding to category E in accordance with EN 1991-1-1:2007, where $\eta_{fi}$ = 0,75. For $Q_k/G_k$ < 1,0, $\eta_{fi}$ is determined according to Expressions (2.5a) and (2.5b) or EN 1990 GL NA, Figure A1.3.1 GL NA.

NOTE 3 The following note is added:
NOTE 3: Expressions (2.5a) and (2.5b) shall be used instead of Expression (2.5) in accordance with the national choice in EN 1990 GL NA when calculating load combinations in STR.

**EN 1993-1-3, 2(3)P Basis of design**
For structures covered by the Danish Building Regulations 2024, chap. 1.3, section 6 and 7, the extended control class cannot be applied, and $\gamma_3$ is taken as 1,00.

For the manufacturing of components with attestation level AVCP 1+, 1 and 2+ and with certification for the scope of inspection at least corresponding to provisions in DS/EN 1990 DK NA:2024, Annex F DK NA (7) and (8), $\gamma_3$ may be taken as 0,95.

**EN 1993-1-4, 5.1(2)P Ultimate limit states – General**
For structures covered by the Danish Building Regulations 2024, chap. 1.3, section 6 and 7, the extended control class cannot be applied, and $\gamma_3$ is taken as 1,00.

For the manufacturing of components with attestation level AVCP 1+, 1 and 2+ and with certification for the scope of inspection at least corresponding to provisions in DS/EN 1990 DK NA:2024, Annex F DK NA (7) and (8), $\gamma_3$ may be taken as 0,95.

**EN 1993-1-4, A.2 Table A.1 Determination of corrosion resistance factor**
Table A.1 may be used with the following amendments:

The value of $F_1$ for determining the corrosion resistance factor for applications near the coastline in Greenland depends on the specific location. Coastal areas in Greenland are taken as $F_1 = -15$. Coastal areas at the bottom of fjords with river outlets or frequent glacier calving may, however, within 0,25 km along the coast from these locations, be taken as $F_1 = -10$.

The value of $F_2$ for determining the corrosion resistance factor depends on the specific location in Greenland. In Greenlandic coastal environments, the concentration of sulphur dioxide can generally be considered low. For inland environments, the concentration of sulphur dioxide is low or medium.

NOTE: The concentration of sulphur dioxide is considered to be low when the average concentration is less than 10 µg/m$^3$.

**EN 1993-1-6, 8.5.2(2) Buckling limit state (LS3), Stress design**
For structures covered by the Danish Building Regulations 2024, chap. 1.3, section 6 and 7, the extended control class cannot be applied, and $\gamma_3$ is taken as 1,00.

For the manufacturing of components with attestation level AVCP 1+, 1 and 2+ and with certification for the scope of inspection at least corresponding to provisions in DS/EN 1990 DK NA:2024, Annex F DK NA (7) and (8), $\gamma_3$ may be taken as 0,95.

**EN 1993-1-8, 2.2(2) Basis of design, General requirements**
For structures covered by the Danish Building Regulations 2024, chap. 1.3, section 6 and 7, the extended control class cannot be applied, and $\gamma_3$ is taken as 1,00.

For the manufacturing of components with attestation level AVCP 1+, 1 and 2+ and with certification for the scope of inspection at least corresponding to provisions in DS/EN 1990 DK NA:2024, Annex F DK NA (7) and (8), $\gamma_3$ may be taken as 0,95.

**EN 1993-1-9, 1.1(2), NOTE 1, Scope**
As the basis for selecting methods for the assessment of fatigue, EN 1090-1+A1:2012 and EN 1090-2:2018 are used.