

# NA to SS EN 1993-1-12:2009(2023)

(ICS 91.010.30; 91.080.10)

SINGAPORE STANDARD

## Singapore National Annex to Eurocode 3 : Design of steel structures

– Part 1-12 : Additional rules for the extension of  
EN 1993 up to steel grades S 700

Confirmed 2023

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## **National Foreword**

This National Annex was prepared by the Technical Committee on Building Structure and Sub-structure under the purview of the Building and Construction Standards Committee.

This standard is an adoption of the UK National Annex (NA to BS EN 1993-1-12:2007) to Eurocode 3 : Design of steel structures – Part 1-12 : Additional rules for the extension of EN 1993 up to steel grades S 700 and is implemented with the permission of the British Standards Publishing Ltd.

Acknowledgement is made to BSI for the use of information from the above publication.

This Singapore NA contains information on those parameters which are left open in EN 1993-1-12 for national choice, known as nationally determined parameters. The Singapore NA is to be read in conjunction with the SS EN 1993-1-12 : 2009 – Eurocode 3 : Design of steel structures – Part 1-12 : Additional rules for the extension of EN 1993 up to steel grades S 700.

Where appropriate, users may refer to the guidance and recommendation in BC 1:2008 'Design guide on use of alternative steel materials to BS 5950' published by the Building Construction Authority (BCA).

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

### **NOTE**

- 1. Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions. Where SSs are deemed to be stable, i.e. no foreseeable changes in them, they will be classified as "mature standards". Mature standards will not be subject to further review unless there are requests to review such standards.*
- 2. An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore and the Singapore Standards Council shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR. Although care has been taken to draft this standard, users are also advised to ensure that they apply the information after due diligence.*
- 3. Compliance with a SS or TR does not exempt users from any legal obligations.*

# **Singapore National Annex to SS EN 1993-1-12 : 2009, Eurocode 3 : Design of steel structures – Part 1-12 : Additional rules for the extension of EN 1993 up to steel grades S 700**

## **NA.1 Scope**

This National Annex gives:

- a) the Singapore decisions for the nationally determined parameters described in the following subclauses of SS EN 1993-1-12:2009:
  - 2.1 (3.1(2))
  - 2.1 (3.2.2(1))
  - 2.1 (5.4.3(1) NOTE)
  - 2.1 (6.2.3(2) NOTE)
  - 2.8 (4.2(2) NOTE)
  - 3 ((1) NOTE)
- b) References to non-contradictory complementary information (see NA.3).

## **NA.2 Nationally determined parameters**

### **NA.2.1 Additional rules to SS EN 1993-1-1**

#### **NA.2.1.1 SS EN 1993-1-12:2009, 2.1 (3.1(2))**

The grades in Tables 1 and 2 and the strength data they contain may be used provided that the rules in SS EN 1993-1-12 are followed. Further restrictions on the use of these grades for bridge works apply as given in NA.2.1.2.

#### **NA.2.1.2 SS EN 1993-1-12:2009, 2.1 (3.2.2(1))**

The recommended values for  $f_u/f_y$ , the elongation at failure and ultimate strain  $\varepsilon_u$  are as follows:

- $f_u/f_y \geq 1.10$  for bridges and other highway structures;
- $f_u/f_y \geq 1.10$  for bridges and other structures;
- elongation at failure not less than 10 %;
- $\varepsilon_u \geq 15f_y/E$

#### **NA.2.1.3 SS EN 1993-1-12:2009, 2.1 (5.4.3(1) NOTE)**

No additional rules are provided.