# NA to SS EN 1993-1-11:2011(2023)

**SINGAPORE STANDARD**

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

## – Part 1-11 : Design of structures with tension components

Confirmed 2023

Singapore
Standards
Council

**NA to SS EN 1993-1-11:2011(2023)**
(ICS 91.010.30; 91.080.10; 93.040)

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

– Part 1-11 : Design of structures with tension components

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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 UK National Annex (NA to BS EN 1993-1-11:2006) to Eurocode 3: Design of steel structures – Part 1-11: Design of structures with tension components 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 1993-1-11 for national choice, known as nationally determined parameters. The Singapore NA is to be read in conjunction with the SS EN 1993-1-11 : 2011 – Eurocode 3: Design of steel structures – Part 1-11 : Design of structures with tension components.

Where appropriate, users may refer to the guidance and recommendation in the BC 1:2008 'Design guide on use of alternative steel material to BS 5950' published by the Building and Construction Authority (BCA). Reference should be made to the most current version as this publication is expected to be replaced by subsequent revisions based on SS EN 1993 series of standards..

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.

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**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 1993-1-11 : 2011 – Eurocode 3 : Design of steel structures – Part 1-11 : Design of structures with tension components

## NA.1   Scope

This National Annex gives:

a)      the Singapore decisions for the Nationally Determined Parameters described in the following subclauses of SS EN 1993-1-11:2011:

| | | |
|---|---|---|
| • 2.3.6(1) | • 5.2(3) | • 6.4.1(1)P |
| • 2.3.6(2) | • 5.3(2) | • 7.2(2) |
| • 2.4.1 (1) | • 6.2(2) | • A.4.5.1(1) |
| • 3.1 (1) | • 6.3.2(1) | • A.4.5.2(1) |
| • 4.4(2) | • 6.3.4(1) | • B(6) |
| • 4.5(4) | | |

b)      the Singapore decisions on the status of SS EN 1991-1-11:2011 informative annexes; and

c)      references to non-contradictory complementary information

## NA.2    Nationally determined parameters

### NA.2.1   Replacement and loss of tension components [SS EN 1993-1-11:2011, 2.3.6]

**(1)       NOTE**

During replacement of tension components, all elements of the structure should satisfy the relevant serviceability and ultimate limit state requirements without any restrictions to traffic or other imposed loads, unless specified otherwise in the Project Specification.

If restrictions to traffic and other imposed loads are considered, the restrictions measures should be detailed in the Project Specification.

For ultimate limit states, the load factors and combination factors in the transient situation should be taken to be the same as for the persistent combination.

For serviceability limit states, verifications should be made using the characteristic, frequent or quasi-permanent combination as required by the relevant Eurocode provisions.

**(2)       NOTE**

Unless specified otherwise for specific projects, structures should be designed to accommodate the loss of any one hanger, stay without any restrictions to traffic or other imposed loads.  The structure should be designed to satisfy all ultimate limit state requirements in the accidental combination, including the dynamic effect of cable removal in NOTE 2 of 2.3.6(2).

Where a structure cannot be designed to accommodate the loss of a particular tension component, the Project Specification should specify the protection measures to be adopted to prevent sudden removal of that tension component.