

**Eurocode 3: Design of steel structures**

**– Part 1-1: General rules and rules for buildings**

**AMENDMENT NO. 1**

May 2019

**1. Page 4, Modification to the Contents**

*Add* “Annex C [normative] Selection of execution class” after Annex B.

**2. Pages iv & 8, Modifications to National Foreword & National annex for EN 1993-1-1**

At the end of the list for “National choice is allowed in EN 1993-1-1 through the following clauses”, *add* the following list entries:

- C.2.2(3)
- C.2.2(4)

**3. Page 9, Modification to 1.1.1 Scope of Eurocode 3, item (3)**

*Replace* the reference to “EN 1090” with:

- EN 1090-1, Execution of steel structures and aluminium structures
  - Part 1: Requirements for conformity assessment of structural components
- EN 1090-2, Execution of steel structures and aluminium structures
  - Part 2: Technical requirements for steel structures

**4. Page 22, Modification to 2.1.2 Reliability management**

*Replace* the content of the clause with the following text:

(1)P With respect to the application of EN 1090-1 and EN 1090-2, execution classes shall be selected in accordance with Annex C in this standard.

(1) If different levels of reliability are required, these levels should preferably be achieved by an appropriate choice of quality management in design and execution, according to EN 1990 Annex B and Annex C and EN 1090.

**5. Page 81, Addition of a new Annex C**

*Add* the following new Annex C after Annex B:

## **Annex C [normative] – Selection of execution class**

### **C.1 General**

#### **C.1.1 Basic requirements**

(1)P To obtain the reliability of the completed works required according to EN 1090 an appropriate execution class shall be selected. This annex forms the basis for this selection.

#### **C.1.2 Execution class**

(1) Execution class (EXC) is defined as a classified set of requirements specified for the execution of the works as a whole, of an individual component or of a detail of a component.

(2) In order to specify requirements for the execution of steel structures to EN 1090-1 and EN 1090-2 the choice of execution class, EXC1, EXC2, EXC3 or EXC4, should be made prior to the commencement of execution. The execution requirements are progressively more onerous from EXC1 up to EXC4.

**NOTE 1** EN 1993 and EN 1994 are based on the assumption that they used in conjunction with EN 1090-1 and EN 1090-2. EN 1993-1-9, EN 1993-2, EN 1993-3-1 and EN 1993-3-2 give supplementary requirements to EN 1090-2 for the execution of structures or components or details subject to fatigue actions. In addition to EN 1090-2, EN 1993-5 refers to other European Standards for the execution of piling works.

**NOTE 2** EN 1090-2 states that EXC2 should apply if no execution class is specified.

### **C.2 Selection process**

#### **C.2.1 Governing factors**

- (1) The selection of the execution class should be based on the following three factors:
- The required reliability;
  - The type of structure, component or detail; and
  - The type of loading for which the structure, component or detail is designed.

#### **C.2.2 Selection**

(1) In terms of reliability management, the selection of execution class should be based on either the required consequences class (CC) or the reliability class (RC) or both. The concepts of reliability class and consequences class are defined in EN 1990.

(2) In terms of the type of loading applied to a steel structure or component or detail, the selection of execution class should be based on whether the structure or component or detail is designed for static actions, quasi-static actions, fatigue actions or seismic actions.

(3) The selection of execution class (EXC) should be based on Table C.1.

**Table C.1 – Choice of execution class (EXC)**

Reliability Class (RC) or Consequences Class (CC)	Type of loading	
	Static, quasi-static or seismic DCL <sup>a</sup>	Fatigue <sup>b</sup> or seismic DCM or DCH <sup>a</sup>
RC3 or CC3	EXC3 <sup>c</sup>	EXC3c
RC2 or CC2	EXC2	EXC3
RC1 or CC1	EXC1	EXC2
<sup>a</sup> Seismic ductility classes are defined in EN 1998-1: Low = DCL; Medium = DCM; High = DCH. <sup>b</sup> See EN 1993-1-9. <sup>c</sup> EXC4 may be specified for structures with extreme consequences of structural failure.		

**NOTE 1** The National Annex may specify whether the selection of execution classes is based on reliability classes or consequences classes or both and may specify the choice in terms of the type of the structure. The National Annex may specify whether Table C.1 is to be adopted.

**NOTE 2** Designs to EN 1993-4-1 and EN 1993-4-2 depend on the choice of consequences class. Designs to EN 1993-3-1 and EN 1993-3-2 depend on the choice of reliability class.

(4) If the required execution class for particular components and / or details is different from that applicable to the structure in general, then these components and / or details should be clearly identified.

**NOTE** The National Annex may specify the choice of execution class in terms of types of components or details. The following is recommended:

If EXC1 is selected for a structure, then EXC2 should apply to the following types of component:

- a) welded components manufactured from steel products of grade S355 and above;
- b) welded components essential for structural integrity that are assembled by welding on the construction site;
- c) welded components of CHS lattice girders requiring end profile cuts;
- d) components with hot forming during manufacturing or receiving thermic treatment during manufacturing.

(5) Specification of a higher execution class for the execution of a structure or component or detail should not be used to justify the use of lower partial factors for resistance in the design of that structure or component or detail.