**CEN/TC 250 "Structural Eurocodes"**
Secretariat: **BSI**
Secretary: **Wilkins Tracey Mrs**

# N 1250 Policy guidelines and procedures (v12)

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## To the Members of CEN/TC 250 *Structural Eurocodes*

**N 1250 POLICY GUIDELINES AND PROCEDURES** (Version 12)

Note 1 This document provides the policy guidelines and procedures to be followed in preparing EN Eurocode Parts in response to EU Commission Mandate M/515. This dated version provides information relevant to the Project Teams for the work programme for M/515.

Note 2 This document is derived from N 250 and N 600. The structure of N 250 has been simplified while including relevant aspects of N 600. The previous version of N 250 G Rev 2 from 2007, together with N 600, Rev1, gives the substantive policy guidelines and procedures used for the first generation of EN 1990 - EN 1999.

Note 3 This version contains editorial improvements on version 7a as emerged from feedback from Project Teams under M/515 and from the TC250 Coordination Group, and to align the content with the CEN/TC 250 Chairman's Briefing Note N 2082 covering a proposed European Foreword, N 2128 CBN 2018/6 on six tests for good drafting of Eurocode clauses, and with the responses to the request related to NCCI (circulated as CEN/TC 250 N 2031), which were collected in CEN/TC 250 N 2081.

Note 4 A record of changes made to N 1250 is included at the end of this document under the heading 'Revision history'.

# N 1250 Policy Guidelines and Procedures – Table of contents

# 1. Introduction and purpose of guidelines

(1) These guidelines give the objectives, the principles and the means by which the second generation of Eurocodes is to be achieved. They are to be used for implementing the response from CEN/TC 250 to the EU Commission's Mandate M/515.

Note 1 All the information in this document about procedures etc. follows the CEN Internal Regulations (CEN IR), and associated guidance, especially in Supporting Documents, available at http://boss.cen.eu/reference%20material/RefDocs/Pages/default.aspx The only exception is a derogation to permit two-part numbering for figures, tables and formulae. In addition, it has been agreed that paragraph numbers shall be retained in the text.

Note 2 This document itself conforms as far as possible to the guidance contained within it.

(2) A general guide to European standardisation (the Vademecum) is available at:
http://ec.europa.eu/growth/single-market/european-standards/vademecum/index_en.htm
This Vademecum compiles key documents from the European Commission on European standardisation policy and related practice. It provides guidance without having legal status.

(3) These guidelines (including the Annexes) should be followed by CEN/TC 250 Subcommittees (SC), Working Groups (WG), Horizontal Groups (HG), Task Groups (TG) and Project Teams (PT) revising existing Eurocodes and extending the scope of the structural Eurocodes with new EN Eurocode Parts. The Technical Committee (TC) itself will have regard to these principles in its overview and management of the work.

Note 3 New SCs may now only be created by exception by CEN/BT so the responsibility for new work having the scope of a subcommittee may be assigned to a new WG that reports directly to CEN/TC 250. However, some of the rules of procedure for WGs are different to those for SCs but for the purposes of CEN/TC 250 have been aligned with those for SCs. Existing SCs may have new subordinate WGs of experts.

Note 4 TGs and PTs are not part of the formal CEN hierarchy but have been created by CEN/TC 250 according to specific conditions defined below.

(4) When an EN Eurocode Part is being revised a draft of the new version will be prepared as a prEN and published for national enquiry. Depending on the response the draft may be approved as EN or amended as an FprEN for Formal Vote by CEN members.

(5) In the cases of the development of EN Eurocode Parts covering (i) the Assessment and retrofitting of existing structures; (ii) Structural Glass; (iii) Membrane Structures; (iv) Fibre Reinforced Polymer Structures, a stepwise procedure shall be followed whereby a JRC Science and Policy report is prepared first, followed by a CEN Technical Specification (TS) and finally, after a period of trial use and comment, a new EN Eurocode Part.

Note 5 The full procedure for converting a CEN TS to a CEN EN is given in CEN-CENELEC Internal Regulations Part 2 (CEN IR 2).

Note 6 The stepwise procedure was approved by Resolution of CEN/TC 250: Resolution 255 (CEN/TC 250, Malta, 20th and 21st November 2008):

> Subject: Development of new technical Parts of the Eurocodes for Glass, FRP and Membrane Structures.
>
> CEN TC 250 agrees that the development of new Parts of the Eurocodes on Glass, FRP and Membrane structures should be achieved in steps, as follows:
>
> 1. Preparation of technical rules in the form of technical recommendations as 'Scientific and Technical Reports[1]' by for example JRC.
> 2. After acceptance of the 'Scientific and Technical Report[1]' by TC 250, adaptation of it into a CEN Technical Specification.

3. Upon the agreement of CEN TC 250, conversion of the CEN Technical Specification into a Eurocode Part.

The resolution was agreed by unanimity.

[1] Designation changed subsequently to Science and Policy Report.

(6) In respect of the drafting, editing and publication of documents (at TS or EN stage) the objective is to achieve what is good and practicable, quickly within agreed timescales, rather than incur delays by seeking theoretical “perfection”. Repeated and belated attempts to incorporate last minute research results or alternative ideas must be avoided.

## 2. The objectives of the Eurocodes and their status

(1) As stated in the EU Commission's original objectives for the first generation of Eurocodes, which remain current, the intention of the EN Eurocodes programme is to establish a set of common technical rules for the design of building and civil engineering works, to replace the differing rules previously in force in the various Member States.

Note 1 In this document reference to the EU Commission includes the EFTA Secretariat.

(2) The Eurocodes have been developed to enable the design of construction works (building and civil engineering works) to comply with Basic Requirement for Construction Works 1 (mechanical resistance and stability) and partially Basic Requirement for Construction Works 2 (safety in case of fire), and Basic Requirement for Construction Works 4[1] (safety in use) of the Construction Products Regulation EU/305/2011 and to determine the performance of structural construction products.

Note 2 The relationship with structural construction products requires CEN/TC 250 to observe CEN BT Decision C36/2014, reproduced in Annex B, and to define clearly the interface between the Eurocodes and Product and Execution Standards.

(3) Application of the Eurocodes in the EU Member States supports the Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on services in the internal market ("Services Directive"). Disparities in design/calculation methods of the national building regulations constitute impediments to the free circulation of engineering and architectural services within the Community. The implementation of the Eurocodes should facilitate the provision of services in the field of construction engineering and architecture by creating conditions for a harmonised system of general rules. To ensure their application over time, the Eurocodes need to be updated to take into account developments on the market (new materials, products, methods, etc.).

(4) As a basis for specifying public construction and related engineering service contracts. Works Directive (EU/2014/24, contracts for public works, public supply and public service), covers procurement by public authorities of civil engineering and building works, and the Services Directive (EU/ 2006/123 on services in the Internal Market), covers public procurement of services. They state that contracting authorities must allow the use of European Standards, like the EN Eurocodes, in tenders falling within the remit of these Directives. Common design/calculation rules for infrastructure and other construction works facilitate the circulation of goods and persons in the internal market. Thus, they contribute towards creating conditions for extended competition for public contracts. In addition, EU Directive 2014/23 concerns the award of concession contracts.

(5) These codes are also being implemented for use in a number of third countries outside the EEA where, in addition to the direct benefits for the countries themselves, their use is expected to contribute towards an improved competitiveness of the European construction industry.

(6) The development of the second generation of Structural Eurocodes will be undertaken focusing on users' needs. CEN/TC 250 has unanimously agreed a position paper on enhancing the ease of use of the Eurocodes, reproduced in Annex F. Ten categories of users have been identified. However, whilst all users of the Eurocodes are important, it is not possible to fulfil all their aspirations simultaneously. Therefore, a primary target audience has been identified to focus drafting efforts. The primary target audience for the Eurocodes evolution is "Practitioners – Competent engineers". This audience will take precedence if conflicts with needs of other audiences arise. Competent engineers are civil, structural and geotechnical engineers, typically qualified professionals with experience able to work independently in relevant fields. Statements of intent setting out the aims of CEN/TC 250 to meet the needs of other users are presented in Figure 3 of Annex F.

The Construction Products Regulation has also introduced Basic Requirement 7 on the sustainable use of natural resources

Note 3 Certification of “competent engineers” is a national prerogative and not within the scope of CEN/TC 250 and the Eurocodes.

(7) CEN/TC 250 aims to encourage the optimisation of input and comment from all potential users. All sectors in each Member State should be provided with the ongoing opportunity to make input to their National Standards Body and hence, via National Delegations, to CEN/TC 250 and its SCs and WGs. CEN/TC 250 has also established liaisons with other CEN Technical Committees (TCs) and with recognised European professional and trade bodies.

(8) It is important to recognise that there is a clear and vital distinction between design codes and national regulations. CEN/TC 250 is fully aware that the harmonisation of National Regulations is not within the scope of the National and European Standards Bodies. CEN/TC 250 is responsible for, and committed to, the formulation of documents, which can be implemented without amendment in all Member States. These Policy Guidelines point the way to resolving this matter by a combination of Eurocodes drafting and action at National level.

# 3. The role of CEN/TC 250

## 3.1. Responsibilities in CEN

3.1.1 The formal hierarchy of responsibilities in CEN is given in CEN-CENELEC Internal Regulations Part 2.

3.1.2 For the purposes of these guidelines for CEN/TC 250, the position may be summarised as follows:

(1) **CEN/TC 250 Chairman.** It is the responsibility of CEN/TC 250 and its Chairman to manage all the work, including establishment of general policies, programmes and strategies for the structural Eurocodes, and to oversee their implementation. Annex A provides the management arrangements, including a Management Group, established to deliver the programme on time. They will support and guide the SCs and WGs in achieving the policy objectives in the drafting work. The status and relationship of the Eurocodes to other TCs is given in BT Decision C36/2014 in Annex B.

(2) **CEN/TC 250 Vice Chairman.** The CEN/TC 250 Vice Chairman supports the CEN/TC 250 Chairman, acting as a champion of the vision and objectives for the next generation of EN Eurocodes. The Vice Chairman serves as a member of the core management team for the work of CEN/TC 250, confirming that it is proceeding in line with agreed objectives and supporting corrective measures if required. The Vice Chairman make take responsibility for specific actions or initiatives agreed with the Chairman, which may include, for example, chairing a 'Chairman's Advisory Panel' on a specific subject. The Vice Chairman may deputise for the Chairman.

(3) **Responsibilities of the CEN/TC 250 Secretary.** The Secretary, appointed by the member holding the Secretariat, shall in consultation with the Chairman ensure that the Technical Committee functions efficiently and, in particular, that agreed timetables are kept to. The Secretary is responsible for ensuring that the CEN/CENELEC Internal Regulations are followed. The Secretary shall maintain strict impartiality and be independent of any national point of view. The Secretary has no voting rights. The Secretary shall deal with requests from the CEN-CENELEC Management Centre for examination of new ISO/IEC publications to see if they are suitable as reference documents. The Secretary shall ensure that CEN/CENELEC publications are periodically reviewed. The Secretary shall keep files on Technical Committee work in hand and shall hand these over in good order if the Secretariat changes. The Secretary shall ensure that documents are in accordance with the CEN-CENELEC Internal Regulations – Part 3 (CEN IR 3) before transmission of the draft to the CEN-CENELEC Management Centre for initiating the CEN/CENELEC enquiry and formal vote.

(4) **Coordination Group**. CEN/TC 250 has established CEN/TC 250/-/1, the Coordination Group (CG), to provide technical and programme coordination, both in relation to maintenance and the development of new EN Eurocode Parts. The CG has established horizontal groups (HGs) for Bridges (HGB) and for Fire (HGF).

(5) **Subcommittees and Working Groups, and their Chairmen and Convenors**. The responsibilities of SCs and WGs, and their Chairmen or Convenors, are to undertake and manage the work delegated to them by CEN/TC 250 within their terms of reference and agreed timescales. They have a vital responsibility for establishing technical policies, strategies and coordination of matters exclusive to their work (without overriding established CEN/TC 250 general policies, etc.) but must refer wider matters to the TC or CG. They also have responsibility for liaison and cooperation with the other CEN/TC 250 SCs, WGs, related TCs in CEN, and other European and International Standards Organisations, as well as with relevant European professional and trade Associations.

## 3.2. Subordinate groups to CEN/TC 250 Subcommittees and Working Groups

(1) CEN/TC 250 passed decision 354 in London, May 2014, deciding the following:

- A CEN/TC 250 Subcommittee (TC-SC) may choose to operate, at any time, a subordinate structure of Working Groups (SC-WGs) and below them Task Groups (SC-WG-TGs). A CEN/TC 250 Working Group (TC-WG) may choose to operate, at any time, a subordinate structure of Task

Groups (TC-WG-TGs). All such subgroups shall have a number, title and clear terms of reference. The title should succinctly explain the purpose of the sub-group. The number, title, Terms of Reference and name of Convenor shall be notified to CEN/TC 250 via the Secretariat of CEN/TC 250.

- Responsibility for the technical work of Project Teams (PTs) created in response to Mandate M/515 resides with the relevant TC-SC or TC-WG. The TC-SC or TC-WG may choose to delegate certain tasks to their sub-groups at any time. Project Teams (PTs) shall report directly to the relevant TC-SC / TC-WG on technical matters.

## 3.3. Appointments and reappointments

### *3.3.1. Reappointment Chairman and Convenors*

(1) CEN/TC 250 passed decision 422 on the 23 May 2016, deciding that the appointment of TC, SC, WG and HG Chairpersons or Convenors shall always be for an initial 3 years, and when the term of appointment of a Chairperson or Convenor is due to expire, and the incumbent is prepared to extend their tenure, the approach for re-appointment shall follow the relevant CEN rules, with the following guidance applied:

I. The relevant Secretary may propose re-appointment after 3 years without seeking alternative candidates;
II. Re-appointment after 6 years should only occur after alternative candidates have been sought by the relevant Secretary and the TC/SC/WG/HG provided an opportunity to consider all potential candidates;
III. Appointments should be undertaken with due consideration to providing continuity during key phases of the delivery of the CEN/TC 250 work programme, and also the importance of effective succession planning.

### *3.3.2. HG Convenors*

(1) CEN/TC 250 passed decision 353 in London, May 2014, deciding that the procedure for the appointment of HG Convenors shall be for nominees for the role of Convenor to be sought within the membership of the HG. A recommendation for the Convenor should be made by the HG for decision by CEN/TC 250.

## 3.4. Responsibilities of CEN/TC 250, and its SCs, WGs, HGs and PTs in response to Mandate M/515

### *3.4.1. General*

(1) M/515 requires at least one additional structural Eurocode and substantial additions to the existing codes to cover:

- assessment, re-use and retrofitting of existing structures,
- strengthening of the requirements for robustness,
- improving the practical use for day-to-day calculations
- new Eurocode on: structural glass.

(2) The response from CEN/TC 250 to fulfil the requirements of M/515 is contained in CEN/TC 250 N 993.

(3) The Commission has accepted the quotation from CEN and provided funds, initially to assist the first phase of the work programme. This quotation, together with the call for experts undertaken to establish Project Teams (see clause 5), establishes the following responsibilities in connection with the execution of the mandate:

### *3.4.2. NEN Staff members*

In accordance with the CEN transfer agreement between BSI (as CEN/TC 250 secretariat) and NEN, NEN will have responsibility for professional management support in the form of administrative, operational, reporting and accounting services for the execution of the grant agreement.

NEN will:

- provide general project management;
- serve as a member of the CEN/TC 250 Management Group;
- undertake a call for tender for experts (by means of a dedicated web site);
- subcontract with the phase 1 experts (approximately 220 contracts);
- monitor and steer the progress of the phase 1 tasks by contract management;
- coordinate financial work between CEN/TC 250 and CEN CENELEC Management Centre; and undertaken interim and final reporting.

These activities will be performed in close collaboration with the CEN/TC 250 Management Group and BSI.

### *3.4.3. CEN/TC 250 Chairman*

The CEN/TC 250 Chairman's responsibilities in connection with the execution of the mandate include:

- setting a clear vision and priorities for the evolution of the Eurocodes, agreed with CEN/TC 250, and communicating this vision effectively with stakeholders across Europe;
- establishing and maintaining the overall leadership and governance framework for the execution of the mandate;
- preparation for and chairing meetings of CEN/TC 250 plenary, the CEN/TC 250 CG and the CEN/TC 250 management group;
- provision of support and leadership to SC and WG Chairmen in their tasks for Mandate M/515;
- liaison with the European Commission and CEN on behalf of CEN/TC 250;
- review of Project Team progress reports, and implementation of any corrective actions if required;
- review of draft deliverables; and,
- participation in meetings as required to support the execution of the mandate and ensure effective communications with stakeholders both within and outside CEN/TC 250 structure.

### *3.4.4. CEN/TC 250 Subcommittee Chairman and Working Group Convenors*

As key leaders in the CEN/TC 250 organisation structure, the role of Subcommittee (SC) and Working Group (WG) Chairmen and Convenors in overseeing and coordinating work done by the Project Teams will be essential to the successful execution of the mandate. Their responsibilities include:

- communicating the clear vision and priorities for the evolution of the Eurocodes, agreed with CEN/TC 250, to their SC/WG;
- supporting the overall leadership and governance framework for the execution of the mandate;
- ensuring that the work of Project Teams aligns with the objectives of the mandate and the requirements of CEN/TC 250 and the relevant SC/WG;
- preparation for and chairing meetings of SC/WGs;
- active participation in CEN/TC 250 plenary and the CEN/TC 250 Coordination Group meetings;
- participation in Project Teams as an ex-officio member, providing technical leadership when required;
- review and approval of Project Team progress reports, and agreement of any corrective actions required with CEN/TC Chairman;
- preparation of SC/WG progress reports, in particular identifying any significant risks to delivery and technical coordination matters requiring resolution;
- review of draft deliverables; and,

- participation in meeting as required to support the execution of the mandate and ensure effective coordination of cross-cutting issues.

### *3.4.5. Project Team Leaders*

The responsibilities of Project Team Leaders are to:

- lead the Project Team and coordinate the input from its members;
- communicate the vision and priorities for the evolution of the Eurocodes, agreed with CEN/TC 250, to their Project Team;
- ensure that the work of the Project Team aligns with the objectives of Mandate M/515 and the requirements of CEN/TC 250 and the relevant Subcommittee (SC), Working Group (WG) or Horizontal Group (HG);
- plan the delivery of the task and drive delivery to programme;
- organize and chair (face-to-face and online) meetings of the Project Team;
- present and discuss the result of the work within the responsible SC/WG or HG, when required;
- evaluate and report on comments received from SC/WG/HG or through the enquiry process;
- review and incorporate proposals from the SC/WG/HG in the drafts, ensuring consistency and coherence with the rest of the draft; and,
- prepare progress and final reports.

The Project Team Leader shall inform NEN of any event or risk liable to substantially affect the contribution of the Project Team to the CEN/TC 250 work programme and/or delay delivery to the required timetable.

### *3.4.6. Project Team Members*

Project Team members will be recognized experts who collectively provide the portfolio of skills and knowledge required to successful deliver each Project Team's task. They will be responsible for working together and with the Project Team Leader to deliver the task requirements and support the Project Team Leader in fulfilling the Project Team Leader's responsibilities.

Project Team Members shall work proactively, collectively and collaboratively to:

- agree individual assignments and responsibilities within the Project Team;
- provide new technical draft texts, or corrections and/or amendments to existing texts for inclusion in the next generation of the Structural Eurocodes;
- provide contributions to background reports providing justification for technical choices made within the draft texts;
- provide suggestions and justification for the reduction of National Determined Parameters (NDPs);
- provide suggestions for the enhancement of the ease of use of the next generation of Eurocodes;
- ensure that the work of Project Team aligns with the objectives of Mandate M/515 and the requirements of CEN/TC 250 and the relevant Subcommittee (SC), Working Group (WG) or Horizontal Group;
- plan the delivery of those parts of the task assigned to them and achieve delivery to programme;
- when agreed, present and discuss the result of the work within the responsible SC/WG/HG;
- evaluate and report on comments received from SC/WG/HG or through the enquiry process;
- review and incorporate proposals from the SC/WG/HG in the drafts, ensuring consistency and coherence with the rest of the draft; and,
- contribute to progress and final reports.

Project Team Members shall inform the Project Team Leader of any event or risk liable to substantially affect or delay the delivery of the task.

(4) The mandate does not include maintenance related to existing clauses in the Eurocode standards; such work is covered by the previous mandates for the development of the Eurocodes. The guidance in N 250 and N 600 still applies to the amendment of existing standards. The preparation and implementation of the standardisation work resulting from M/515 should not be allowed to delay high-priority maintenance tasks related to the existing Eurocodes.

### 3.5. Meetings and communication

(1) When possible, work of the TC, SCs and WGs shall be conducted by correspondence. All SCs and WGs are registered on CEN Docs so as to provide transparency and to assist in rapid work progress and compliance with tight target dates.

Note 1 It is CEN policy that all TCs, SCs and WGs use CEN Docs as the means for document storage and access by members. CEN provides facilities for tele meetings.

(2) Meetings shall be held when necessary to have face-to-face discussion in order to reach decisions and agree the way forward. The dates for meetings should be arranged to meet agreed deadlines in the work-item programmes.

# 4. CEN/TC 250 Programme and prioritization

(1) The CEN/TC 250 work programme (Annex 1 of document CEN/TC 250 N 993) addresses all the requirements of M/515, supplemented by requirements established through extensive consultation with industry and other stakeholders. As such the overall work programme includes elements for which funding is sought from the EU Commission and elements that will be wholly funded from other sources, principally industry.

(2) The work programme is structured to comprise four overlapping phases. In the response a complete overview of all phases is included, with further detail provided for those tasks in Phase 1 that formed the basis for initial contractual discussions with the EU Commission. Details are provided of the organisational structure for the execution of the mandate and the means by which effective coordination will be assured. To maximise the benefit derived from the extensive existing network of active stakeholders, the organisational structure has been based upon the current CEN/TC 250 operating model.

(3) The CEN/TC 250 work programme comprises approximately 77 discrete tasks, all of which will be undertaken under the direction of one of CEN/TC 250's existing SCs, WGs or HGs. A summary of the deliverables for each task is provided in CEN/TC 250 N 993, together with a mapping between the explicit requirements of M/515 and the CEN/TC 250 work programme.

(4) The structure of the suite of Eurocodes is given in Annex C. Guidance on the structure of EN Eurocode Parts is given in 7 and Annex D.

(5) CEN/TC 250 established a CAP (Chairman's Advisory Panel) to prepare guidance on ease of use. Based on the work of the CAP, a position paper was developed and unanimously agreed by CEN/TC 250. This paper is reproduced in Annex G. Additional information on enhancing ease of use is provided in clause 10.

(6) An important part of the programme in response to M/515 is to reduce the number of Nationally Determined Parameters (NDPs) as far as possible. The concept of NDPs, the criteria for deciding to introduce them in an EN Eurocode Part and the manner of doing so are discussed below in clause 6 and in Annex E.

(7) The draft publication schedule and planner for the 2nd Generation Eurocodes is available on the CEN Documents website as a TC250 N-numbered document, and updated from time to time.

# 5. Setting up, briefing and managing project teams

## 5.1. Responsibility

(1) These tasks are being carried out by NEN, in contract to the Commission under the terms of FPA 2014, with technical input from CEN/TC 250 and its SCs, WGs and HGs. The documents for the Call for Tender documents for Phase 1 of the programme are in CEN/TC 250 N 1263.

## 5.2. Tender process

(1) The main milestones in the tender process are: Launch open Call for experts; deadline for submission of queries; deadline for tender submissions; completion of assessment of tenders by pre-selection panels; final assessment panel to make recommendations to EC/EFTA; confirmation of recommendation; award of contracts.

(2) The object of the evaluation process is to select individual experts to form the most capable team for the task. The MCTT (Most Capable team for the Task) will be determined by assessing the following criteria for potential teams as a whole (in order of importance):

i. Expert technical coverage of the scope of the task;
ii. Capabilities of individual candidates;
iii. Sufficient expertise in Standards development;
iv. Balance of professional background and experience (design, research, construction, etc.);
v. Geographic coverage.

(3) The suitability of each Tenderer's nominated expert for membership of a Project Team will be assessed against the criteria set out in the Call. An Evaluation Panel (pre-selection panel) comprising suitably qualified experts without any conflicts of interest will be formed for each task. Each Evaluation Panel will undertake an assessment using their experience and judgment to form an opinion on each Tenderer's submission and, on the basis of this assessment, make recommendations for the composition of each Project Team to achieve the MCTT.

(4) The Final Assessment Panel will review the recommendations from each of the Evaluation Panels holistically to confirm alignment with CEN/TC 250's objectives. The Final Assessment Panel will be responsible for making the final recommendation for the leadership and memberships of all Project Teams.

## 5.3. Background documents

(1) It is a requirement of CEN/TC 250 that all future work, including revisions to existing parts and the preparation of new parts, will be accompanied by background documents. These background documents shall serve as a 'technical audit trail' to decisions taken in the standardisation process and will be made available via the CEN/TC 250 CEN Docs) database of numbered documents, so that they will be accessible by members of CEN/TC 250 family of sub-committees and working groups. They will also be available to national mirror committees via their NSB to assist in the development of new National Annexes to the second generation of Eurocodes.

(2) The Project Teams shall therefore prepare background reports providing a brief technical commentary to any new or revised clauses including clear references to relevant source papers, reports, national standards etc. These documents should serve as working documents during the standardisation process and a record for the future.

(3) Specifically, Background reports shall satisfy the following:

i. Background reports shall explain the technical reasons for all decisions to change the Eurocodes from the current published versions or introduce new material;
ii. The level of detail provided should be commensurate with the complexity of the decision;

iii. Where references are made to further detailed background information, such information shall either be publicly available or be provided as an annex to the background report. Where reference material does not directly explain the decision taken, additional commentary shall be provided.

iv. Where changes are made in response to systematic review comments, the comment reference should be noted;

v. In developing background reports the inclusion of reference to the ‘Ease of Use’ principles being followed is encouraged.

(4) Model templates for background reports have been provided to Project Teams (examples are provided in Annex G).

(5) It is not intended that these reports would be suitable for direct publication, but will provide a valuable source of information for those developing guides, text books, or other materials to support industry.

# 6. How to take account of regulatory and other external provisions

## 6.1. Nationally Determined Parameters (NDP)

### *6.1.1. Use of Nationally Determined Parameters*

(1) The normal way in a European standard to take account of variations in national regulatory requirements that cannot be accommodated by harmonisation is by means of an A-deviation (see CEN-CENELEC Internal Regulations Part 3 Annex ZB). As this route is impractical for Eurocodes, because of the relatively large number of national requirements which are likely to be needed, the concept of Nationally Determined Parameters has been devised.

(2) The value of an NDP for use in a country can be given in a National Annex.

(3) Annex E explains how the concept of NDPs should be used in EN Eurocode Parts, including steps to be taken in drafting to minimise their number.

### *6.1.2. How to refer to NDPs in EN Eurocode Parts and CEN Technical Specifications*

(1) The following drafting principles shall be followed to introduce NDPs in line with CEN IR 3:

(i) All references to National Annexes shall be contained in NOTES

(ii) NOTES shall only contain statements of fact. They shall not contain the verbs shall, should, or may.

(iii) NDPs shall be clearly defined and specific. General references to the National Annex should be avoided, such as 'see National Annex'.

(2) Examples of how NDPs should be referenced are presented in the examples below.

(3) If cases are identified where it is not clear how the reference should be made, advice may be sought from CEN/TC 250 Management Group via the CEN/TC 250 Secretary.

***Example of a case where a default value is given:***

(1) The partial factor $\gamma_{F,fat}$ shall be used for fatigue loads.

NOTE The value of $\gamma_{F,fat}$ is 1.0 unless the National Annex gives a different value.

***Example of a case where no default value is given:***

(1)P Testing of grouted anchors shall comply with EN ISO 22477-5 Test Method 1 or Test Method 3.

NOTE The choice of Method can be given in the National Annex.

***Example of default values given in a table:***

**NOTE The values of $\gamma_F$ are given in Table X.X unless the National Annex gives different values.**

## 6.2. National Annexes

### *6.2.1. Definition*

(1) National Standards implementing Eurocodes will comprise the full text of the Eurocode (including any annexes), as made available by CEN. It may be preceded by a National title page and National foreword and may be followed by a National Annex.

#### *6.2.2. Content of National Annexes*

##### *6.2.2.1. General*

(1) The main purpose of a National Annex to an EN Eurocode Part (and a CEN Technical Specification where relevant) is to give information on those parameters which are left open in the Eurocode for national choice (i.e. the Nationally Determined Parameters, see 6.1) to be used for the design of buildings and civil engineering works to be constructed in the country concerned. The precise terminology to be used for the information remains to be finalised but in broad terms are:

- values and/or classes where alternatives are given in the Eurocode,
- values to be used where a symbol only is given in the Eurocode,
- country specific data (geographical, climatic, etc.), e.g. snow map,
- the procedure to be used where alternative procedures are given in the Eurocode.

(2) The National Annex may also contain non-contradictory complementary information (see 6.3).

##### *6.2.2.2. Decision on the application of Informative Annexes*

(1) In addition, a National Annex may give information on the decision of the Country about the application of an Informative Annex (of an EN Eurocode Part). More information on the content of Informative Annexes is given below in 7.8.3.

NOTE A country can permit the use of an Informative Annex, can prohibit its use or can make use of it as a national requirement.

### 6.3. Non-contradictory complementary information (NCCI)

(1) Existing EN Eurocode Parts contain references to the concept of non-contradictory complementary information (often known as NCCI) to assist implementation.

(2) There shall in any case be no reference to NCCI in the unalterable text of an EN Eurocode Part, i.e. in the text of the Eurocode made available by CEN.

(3) NCCI that is included in a National Annex shall comply with the guidance given in Annex J.

### 6.4. Project-specific criteria

(1) Some aspects of design can be specified either by a relevant authority or, where not specified, on a project-specific basis by relevant parties. Where this is the case, the following phrase should be used within the clause:

"...when/as/if specified by the relevant authority or, where not specified, as agreed for a specific project by the relevant parties."

(2) Project-specific criteria shall not be used in requirements (i.e. "shall" clauses) nor in notes (to avoid confusion with NDPs). They shall be introduced as recommendations or permissions (i.e. in "should" or "may" clauses).

NOTE Examples of different formulations of clauses containing project-specific criteria are:

> "The [parameter/approach] should be as specified by the relevant authority or, where not specified, agreed for a specific project by the relevant parties"
>
> "An alternative [parameter/approach] should be [used/applied etc.] as specified by the relevant authority or, where not specified, may be agreed for a specific project by the relevant parties"

"The [parameter/approach] may be used if allowed by the relevant authority and agreed for a specific project by the relevant parties"

(3) Generally, both "relevant authority" and "relevant parties" should be cited by the drafters and there should be a specific justification in any case this is not done.

(4) Combining project-specific criteria and NDPs leads to ambiguity on their hierarchy. To avoid this:

a) if there is a need to allow national determination, then an NDP shall be provided with no reference to project-specific criteria;

NOTE National Annexes can allow values of NDPs to be agreed on a project-specific basis.

b) alternatively, the NDP shall deal with one aspect (e.g. minimum values to be used) and the project-specific clause with a different aspect (e.g. project-specific values to be used).

NOTE As an example:

(1) The [parameter/approach] should be specified.

NOTE Minimum requirements for [parameter/approach] can be defined in the National Annex

(2) Additional requirements for [parameter/approach] should be as specified by the relevant authority or, where not specified, agreed for a specific project by the relevant parties.

### 6.5. Project specifications

(1) The design aspects to be specified shall be identified without referring to project specifications.

***Example***:

The design service life of temporary bridges shall be specified.

***Not:***

The design service life of temporary bridges shall be given in the project specification.

# 7. Style of EN Eurocode and CEN TS clauses

## 7.1. Titles of Eurocodes

(1) Separate elements of the titles of EN Eurocode Parts shall be separated by a em dash ("—") and not by a colon (":"), as shown in the examples below:

> EN 1990 Eurocode — Basis of structural and geotechnical design
>
> EN 1993-1-4 Eurocode 3 — Design of steel structures — Part 1-4: Stainless steel structures

(2) The titles of the EN Eurocode Parts shall be as given in Annex K.

## 7.2. Common sequence of clauses

(1) The EN Eurocode Parts being developed under M/515 will be edited by CCMC before Formal Vote and before being made available. The software used by CCMC is predicated on a common sequence of clauses, primarily Foreword, Introduction and clauses 1-3, with Annexes at the end. As a result, *"Basis of Design"* becomes clause 4 instead of clause 2 in existing Eurocodes. The resulting structure is given in Annex D, including for Fire Parts, and includes a common form of statement for the European Foreword and the Introduction.

(2) The term 'section', as used in the first generation of Eurocodes, shall no longer be used. All subdivisions are termed 'clause' but it is not usually necessary to precede the number of a clause with the word 'clause'.

## 7.3. European foreword

The European foreword shall conform to the framework given in Annex D3.

## 7.4. Introduction

(1) The Introduction shall conform to the framework given in Annex D4.

(2) Clause 0.5 shall include a list of paragraphs where national choice is allowed (through one or more notes to the paragraph). Where the note refers to a Table that contains the national choices, the paragraphs that introduces the notes should be listed and not the Table. The list shall be preceded by the following text:

> National choice is allowed in EN 19xxx-x-x through notes to the following clauses:

(3) Clause 0.5 shall also include a separate list of Informative Annexes where national choice is allowed regarding the application of the Annex. The list shall be preceded by the following text:

> National choice is allowed in EN 19xxx-x-x on the application of the following informative annexes:

(4) The lists required by (2) and (3) should be presented in a hidden table (i.e. without borders or background shading) comprising four columns. The items in the tables should be listed in a horizontal (row-wise) arrangement (i.e. left-to-right in the top row, then left-to-right in the second row, and so on). See the example in D4.

## 7.5. Clause 1 Scope

(1) Clause 1 Scope shall conform to the framework given in Annex D.

(2) Clause 1.1 Scope of EN 19xxx-x-x shall not list the clauses contained in the Eurocode part under consideration.

(3) Clause 1.2 Assumptions shall refer to the assumptions given in EN 1990 and to specific assumptions of the Eurocode part under consideration.

(4) The Scope should not include an overview of Annexes included in the Eurocode part.

(5) The Scope of bridge Eurocode parts shall indicate any general Eurocode parts that are to be applied (see 8.8.3 for details).

(6) The Scope should not be longer than 4000 characters.

## 7.6. Clause 2 Normative references

(1) Clause 2 Normative references shall start with the introductory wording provided by CEN IR 3, 15.5.1, as follows:

> The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

(2) The wording given in (1) shall be followed by the NOTE given below:

> NOTE See the Bibliography for a list of other documents cited that are not normative references, including those referenced as recommendations (i.e. in ‘should’ clauses), permissions (‘may’ clauses), possibilities ('can' clauses), and in notes.

(3) Clause 2 shall list all references that are given in requirements (i.e. clauses using the verb 'shall').

(4) References that are given as recommendations (i.e. in 'should' clauses), permissions (in 'may' clauses), possibilities (in 'can' clauses), and in notes shall be placed in the Bibliography (see 7.9).

(5) Normative reference shall only be made to documents that are published by CEN, CENELEC, ETSI, ISO, and IEC (i.e. European or International Standards).

> NOTE Further guidance on how to use Normative references is given at

(6) In exceptional circumstances, normative reference may also be made to draft European or International Standards that are publicly available (for example, ENs at Enquiry stage, ISOs at DIS stage, or TS/TRs at FV stage).

## 7.7. Clause 3 Terms, definitions, and symbols

(1) CEN IR 3 requires that all terms and definitions should be given in clause 3.1 Terms and definitions. They should not normally need to be referenced elsewhere in the text.

(2) Terms and definitions shall be numbered and may be grouped under themes.

(3) If terms, definitions, and symbols are grouped under themes, a separate alphabetical list of those terms and definitions should not be included in clause 3.1.

(4) In line with CEN IR 3, all symbols should be given in clause 3.2 Symbols and abbreviations and need not be numbered.

(5) CEN IR3 clause 17.5 states that, unless there is a need to list symbols in a specific order to reflect technical criteria, all symbols should be listed in alphabetical order under clause 3.2.

(6) Clause 3 may include figures if necessary to add clarity.

(7) According to the CEN IR3, terms, definitions and symbols shall only appear once in each document, i.e. in Clause 3.

(8) Terms, definitions and symbols related to an annex shall not be listed in that annex, instead they shall be provided in Clause 3 under appropriate sub-headings.

(9) A reference provided as a [SOURCE] of a terminological entry or symbol listed in Clause 3 should be listed in the Bibliography, unless it otherwise appears in the document as a Normative Reference.

## 7.8. Clause 4 Basis of design

(1) Clause 4 Basis of design shall conform to the framework given in Annex D.

## 7.9. Annexes

### *7.9.1. Sequence of Annexes*

(1) The order in which Annexes are arranged should suit the convenience of users of the standard.

NOTE The former requirement that "Annexes shall appear in the order in which they are cited in the text" has been deleted from IR3.

### *7.9.2. Specific rules on normative annexes*

(1) In accordance with CEN IR3, a normative annex shall be introduced in a clause using ‘shall’ or similar suitable expression to make clear its normative status. Normative annexes shall not be introduced using the other verb forms, 'should', 'may', or 'can'.

| |
|---|
| *Example* [*The status of Annex B is normative*]<br><br>(1) The analysis shall be carried out as specified in Annex B. |

(2) The start of each Normative Annex shall contain two fixed clauses that clarify the use of the Normative Annex (see Annex D7).

### *7.9.3. Specific rules on Informative Annexes*

(1) As set out in CEN IR3, Informative Annexes may be used. In all cases, Informative Annexes shall be useful and useable. They shall not contain textbook material and shall not contradict normative text.

(2) Where necessary to their purpose, Informative Annexes may contain requirements, recommendations and permission (i.e. they may use ‘shall’, ‘should’ and ‘may’). Cases where this can be necessary include Informative Annex that cover optional design or testing methods.

(3) Where possible, annexes that use ‘shall’, ‘should’ and ‘may’ should be normative rather than informative.

(4) The use of Informative Annexes to present alternative methods should be avoided where this can be achieved without unduly impacting users. In alignment with the CEN/TC 250 position paper on reducing the number of NDPs (see N1250 Annex E), this must be done pragmatically and respectfully of national positions.

(5) The use of NDPs in Informative Annexes should be avoided. It can be acceptable in special cases, subject to the agreement of CEN/TC 250.

(6) Reference to Informative Annexes shall be given:

i. in the Introduction to each EN Eurocode Part (see D4 in Annex D);

ii. in the main text only in Notes and shall be introduced in a way that does not imply that the annex has to be used.

(7) The start of each Informative Annex shall contain two fixed clauses that clarify the use of the Informative Annex (see Annex D6).

NOTE The status of an Informative Annex can be given in the National Annex, where it can be made normative, kept as informative, cancelled, or replaced in full or in part. Guidance to NSBs on drafting National Annexes to EN Eurocodes is given in Annex J.

### 7.10. Bibliography

(1) The Bibliography shall include lists of references that are given as recommendations (i.e. in 'should' clauses), permissions (in 'may' clauses), possibilities (in 'can' clauses), and in notes.

(2) The list of references in 'should' clauses shall be preceded by the following heading and text:

> References contained in recommendations (i.e. "should" clauses)
>
> The following documents are referred to in the text in such a way that some or all of their content constitutes highly recommended choices or course of action of this document. Subject to national regulation and/or any relevant contractual provisions, alternative documents could be used/adopted where technically justified. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

(3) The list of references in 'may' clauses shall be preceded by the following heading and text:

> References contained in permissions (i.e. "may" clauses)
> The following documents are referred to in the text in such a way that some or all of their content expresses a course of action permissible within the limits of the Eurocodes. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

(4) The references in 'can' clauses and in notes shall be collected together into one list and preceded by the following heading and text:

> References contained in possibilities (i.e. "can" clauses) and notes
> The following documents are cited informatively in the document, for example in "can" clauses and in notes.

(5) Clauses should be worded to minimize references in 'should', 'may', and 'can' clauses and in notes.

(6) Each reference shall only appear once in the Bibliography under the first applicable heading (i.e. under the list for recommendations 'should' before that for permissions 'may', and both before that for possibilities and notes).

(7) References in the Bibliography may be numbered to simplify cross-referencing, provided the numbering is sequential (starting at 1) and unique. Citations to numbered references should be given as '[1]' etc.

# 8. Style of EN Eurocode and CEN/TS provisions

## 8.1. General

(1) The rules set out in CEN IR 3:2022 shall be followed unless CEN/BT has agreed a derogation, see Annex B.

(2) A consistent approach to drafting shall be achieved using the CEN Simple template available from CCMC https://boss.cen.eu/reference-material/guidancedoc/pages/prepfiles/.

## 8.2. Neutrality

(1) Eurocodes shall be drafted in strictly neutral terms. They should state requirements but not who has to implement them. Responsibility is a matter for legal provisions and commercial contracts. Consequently, the use of expressions like “the designer” shall be avoided.

## 8.3. Verbal forms to be used for the expression of provisions in EN Eurocodes

### *8.3.1. The basic requirement*

(1) This clause explains how verbal forms should be used to take account of the intentions of the drafters and the possible interpretation by users.

(2) The verbal forms set out in clause 7 of CEN IR 3 shall be applied. The meaning of the verbal forms as used in the EN Eurocodes is given in 8.3.3.

### *8.3.2. Choice of verbal forms in drafting*

(1) The choice of verbal form depends basically on whether a provision is a requirement or a recommendation but needs to be tempered by an understanding of the differing regulatory approaches in countries. Clause 7 of CEN IR 3 gives the interpretation of the various forms, but further complementary guidance on their use follows, without in any way constituting derogation from CEN IR 3.

(2) Many countries regard structural design standards as recommendations for meeting performance requirements which are likely then to satisfy the legal responsibilities of the designer. In contrast, some countries make the use of such standards a *de facto* legal requirement while others embody such standards completely in national legislation.

(3) In choosing verbal forms to be used, it is necessary to recognise these differences. In many countries, it would be unacceptable for a structural design standard to give such strong provisions as to imply that they must all be followed. The use of “shall” for all provisions in a design standard therefore cannot be acceptable in such countries.

(4) Recognition of these differences is needed if a single text is to satisfy all the users. Every proposed use of “shall” and “should” shall be examined to ensure that the wording is no more onerous than necessary. The verbal form chosen should not unreasonably inhibit innovation.

(5) While the use of “shall, may and can” is usually very clear, “should” carries with it a sense of permission that an alternative procedure could be used in special cases where technical justified, subject to national regulation and any relevant contractual provisions.

(6) The nature of a Eurocode is different from that of a typical product standard which defines the performance requirements to be met. A product standard also states what is to be done to show that the product complies with the requirements. In contrast, the designer of construction works is given or knows the performance requirements for the works and uses design standards to help determine how the requirements are to be met.

(7) Nevertheless, consistent distinction between a requirement and a recommendation can be the subject of disagreement, even when both verbal forms have a place. Within a recommendation there may be requirements to be met if the outcome of the recommendation is to be achieved.

#### *8.3.3. Meaning of verbal forms*

(1) Although CEN IR 3 explains how verbal forms should be interpreted, the choice of verbal form should be made using the following guidance:

"**shall**" expresses a requirement strictly to be followed and from which no deviation is permitted in order to comply with the Eurocodes.

"**should**" expresses a highly recommended choice or course of action. Subject to national regulation and/or any relevant contractual provisions, alternative approaches could be used/adopted where technically justified.

"**may**" expresses a course of action permissible within the limits of the Eurocodes.

"**can**" expresses possibility and capability; it is used for statements of fact and clarification of concepts.

"**is**" means a statement of certainty, a fact. It should be used sparingly, if at all.

#### *8.3.4. Use of negative verbal forms*

(1) Sentences in negative form should be avoided, typically through writing in positive.

(2) 'May not' should not be used and the expression "may be neglected" should be adopted instead.

#### *8.3.5. Use of "P" to introduce statements of principle*

(1) The first generation of Eurocodes used "(P)" to denote a clause containing a statement of principle with no alternative. This requirement is synonymous with the use of "shall".

(2) The use of "(P)" for requirements shall not be used in the second generation of Eurocodes.

(3) Regardless of (2), it has been decided by CEN/TC 250 that "P" may be used during drafting as an aid to ensure that the correct verbal forms are used.

(4) As an alternative to (3), the following abbreviations may instead be used during:

<REQ> = requirement indicated with "shall"

<RCM> = recommendation indicated with "should"

<PER> = permission indicated with "may"

<POS> = possibility indicated with "can"

### 8.4. Use of two-part description for clauses, tables, and figures

(1) The nature of EN Eurocode Parts means that formulae, tables and figures are used widely. In the interests of ease of use it is very helpful to be able to relate them implicitly to the clause that refers to them. CEN/BT therefore passed Decision C91/2014 (see Annex B) which allows the use of two-part numbering to include the clause number, as a derogation from CEN rules, e.g. Figure 3.2 as the second figure in clause 3.

## 8.5. Tables

### *8.5.1. General*

(1) Vertical text in tables should not be used.

### *8.5.2. Tables in Notes*

(1) When a table is referred to in a Note, it shall be typed in the same font as the main text, not the reduced size use for the text of Notes.

(2) The numbering of tables in Notes shall be included in the sequence of numbering of the tables in the relevant clause.

(3) When the table is a Nationally Determined Parameter (which is typically the case for tables in notes), the title shall be followed by NDP in brackets, as in the following example.

*Example:*

NOTE The values of the partial factors $\gamma_F$ are given in Table 4.5 (NDP) unless the National Annex gives different values.

The title of the table shall then be:

**Table 4.5 (NDP) Values of the partial factors $\gamma_F$**

## *8.6. Symbols*

### *8.6.1. General rules*

(1) In line with CEN IR 3, the same symbol should not be used to represent different quantities within the same document.

(2) Where the same basic symbol is used in a document to represent different quantities, different subscripts should be used for each quantity.

(3) SI units shall be used.

(4) Symbols provided in EN Eurocode parts shall comply with the symbols in EN 1990 where possible.

NOTE The whole suite of EN Eurocode Parts will be reviewed before finalisation to improve consistency of use of symbols.

(5) Indices shall be introduced by using subscript functionality, not by reducing the font size.

### *8.6.2. Referencing or repeating symbols*

(1) When choosing between repeating symbols or referencing them from superior documents (EN 1990 and principal Eurocode parts typically -1 or -1-1 within the same Eurocode), the following approaches may be adopted. The selection of the most appropriate one should be made considering the impact on the user.

- All symbols relevant to a Eurocode part are provided in that Eurocode part.

- Symbols from principal Eurocode parts (typically -1 or -1-1) apply by cross reference in specific Eurocode parts (e.g. EN 1993-1-8 might say: “The symbols in EN 1993-1-1 and the following apply to this document”).

- Symbols from EN 1990 apply by cross reference in other Eurocode parts.

  NOTE It is important to check that there are no duplicated symbols with EN 1990.

(2) Symbols from other Eurocodes other than EN 1990 (e.g. symbols from EN 1993 relevant to EN 1994) should be repeated and not dealt with by reference.

#### *8.6.3. Guidance on the ordering of subscripts in symbols*

(1) Indices should not be separated by commas (e.g. $q_{fk}$ to be used instead of $q_{f,k}$), unless they are needed for clarity.

(2) When deciding the order of indices, preference should be for the order of importance.

(3) Annex I provides guidance on the preparation of new symbols for inclusion in Eurocodes, in particular on the ordering of indices.

(4) Symbols that already appear in the 1st Generation Eurocodes should not be revised unless there is a compelling reason to do so. If a 1st generation symbol is being revised, then the guidance in Annex I should be considered when selecting a new format for that symbol.

### 8.7. Formulae

#### *8.7.1. Introducing formulae*

(1) In line with CEN IR 3, formulae shall be referred to as *Formula (X)*, instead of *Expression (X)* or *Equation (X)*.

(2) Display equations shall be numbered, in ascending order starting from 1, with the Clause number included as a prefix. The numbering should restart at 1 at the beginning of each new clause. The number should be right-aligned against the right margin. For example:

$$A = \pi r^2 \tag{1.1}$$

(3) Where an equation comprises several closely-related parts, those parts shall be presented as separate expressions with consecutive numbers. Letters shall not be used as a suffix to indicate this relationship. For example, the following numbering is correct:

$$\sum F_{\mathrm{d}} = \sum_{\mathrm{i}} \gamma_{\mathrm{G,i}} G_{\mathrm{k,i}} + \gamma_{\mathrm{Q,1}} \psi_{0,1} Q_{\mathrm{k,1}} + \sum_{\mathrm{j>1}} \gamma_{\mathrm{Q,j}} \psi_{0,\mathrm{j}} Q_{\mathrm{k,j}} + (\gamma_{\mathrm{P}} P_{\mathrm{k}}) \tag{8.13}$$

$$\sum F_{\mathrm{d}} = \sum_{\mathrm{i}} \xi_{\mathrm{i}} \gamma_{\mathrm{G,i}} G_{\mathrm{k,i}} + \gamma_{\mathrm{Q,1}} Q_{\mathrm{k,1}} + \sum_{\mathrm{j>1}} \gamma_{\mathrm{Q,j}} \psi_{0,\mathrm{j}} Q_{\mathrm{k,j}} + (\gamma_{\mathrm{P}} P_{\mathrm{k}}) \tag{8.14}$$

and this is incorrect:

$$\sum F_{\mathrm{d}} = \sum_{\mathrm{i}} \gamma_{\mathrm{G,i}} G_{\mathrm{k,i}} + \gamma_{\mathrm{Q,1}} \psi_{0,1} Q_{\mathrm{k,1}} + \sum_{\mathrm{j>1}} \gamma_{\mathrm{Q,j}} \psi_{0,\mathrm{j}} Q_{\mathrm{k,j}} + (\gamma_{\mathrm{P}} P_{\mathrm{k}}) \tag{8.13a}$$

$$\sum F_{\mathrm{d}} = \sum_{\mathrm{i}} \xi_{\mathrm{i}} \gamma_{\mathrm{G,i}} G_{\mathrm{k,i}} + \gamma_{\mathrm{Q,1}} Q_{\mathrm{k,1}} + \sum_{\mathrm{j>1}} \gamma_{\mathrm{Q,j}} \psi_{0,\mathrm{j}} Q_{\mathrm{k,j}} + (\gamma_{\mathrm{P}} P_{\mathrm{k}}) \tag{8.13b}$$

(4) As an alternative to (3), where an equation comprises two closely-related parts, it may be presented as a single expression with a single number, for example:

$$\sum F_{\mathrm{d}} = \begin{cases} \sum_{\mathrm{i}} \gamma_{\mathrm{G,i}} G_{\mathrm{k,i}} + \gamma_{\mathrm{Q,1}} \psi_{0,1} Q_{\mathrm{k,1}} + \sum_{\mathrm{j>1}} \gamma_{\mathrm{Q,j}} \psi_{0,\mathrm{j}} Q_{\mathrm{k,j}} + (\gamma_{\mathrm{P}} P_{\mathrm{k}}) \\ \sum_{\mathrm{i}} \xi_{\mathrm{i}} \gamma_{\mathrm{G,i}} G_{\mathrm{k,i}} + \gamma_{\mathrm{Q,1}} Q_{\mathrm{k,1}} + \sum_{\mathrm{j>1}} \gamma_{\mathrm{Q,j}} \psi_{0,\mathrm{j}} Q_{\mathrm{k,j}} + (\gamma_{\mathrm{P}} P_{\mathrm{k}}) \end{cases} \tag{8.13}$$

(5) In line with CEN IR 3, if a formula is numbered, it should be referred to in the text. If necessary, the elements of a single two-part equation may be referenced in the text as, for example, "the upper part of (8.13)" and the "lower part of (8.13)" or "the two expressions in (8.13)".

(6) Formulae should not be inserted as equations in inline text. Instead, they should either be formatted as normal text (when the formula is simple, e.g. when introducing a symbol) or converted to display equations (when the formula is complicated). For example:

> (8) … either the plate slenderness $\overline{\lambda}_p$ [equation – wrong] … with $\sigma_{com,Ed}$ [formatted text – correct] …

(7) Equations in table should not numbered. They shall be presented in a way that makes them easy to identify, for example by labelling column and rows. For example:

| (A) | (B) | (C) | |
|---|---|---|---|
| $\kappa$ | Location for verification | $\beta_s$ | 1 |
| $\kappa \le 0,02$ | | $\beta_s = 1,0$ | 2 |
| $0,02 < \kappa \le 0,70$ | sagging bending | $\beta_s = \beta_{s,1} = \frac{1}{1+6,4\kappa^2}$ | 3 |
| | hogging bending | $\beta_s = \beta_{s,2} = \frac{1}{1+6,0(\kappa - 0,0004/\kappa)+1,6\kappa^2}$ | 4 |
| $\kappa > 0,70$ | sagging bending | $\beta_s = \beta_{s,1} = \frac{1}{5,9\kappa}$ | 5 |
| | hogging bending | $\beta_s = \beta_{s,2} = \frac{1}{8,6\kappa}$ | 6 |
| All $\kappa$ | end support | $\beta_{s,0} = (0,55 + 0,025/\kappa)\beta_{s,1}$ but $\beta_{s,0} \le \beta_{s,1}$ | 7 |
| All $\kappa$ | cantilever | $\beta_s = \beta_{s,2}$ at support and at the end | 8 |

(8) A specific equation in a table should be referenced using the Table number, followed by its column and row labels (e.g. "Formula in Table 4.1, cell C3").

(9) When referencing a formula for the first time, the number of the formula may be omitted in the preceding text. For example:

> (3) For situations where the fastener shaft penetrates the full timber member thickness,the factor $k_{br}$ should be taken from:
>
> $$k_{br} = max\{1; (1 + k_{rp,2})k_{pos}n_0^{0,5}n_{90}^{0,3}d - d^{-0,2}\} \quad (11.38)$$
>
> with
>
> $$k_{pos} = \begin{cases} 0,65 & for\ outer\ members \\ 1,10 & for\ inner\ members \end{cases} \quad (11.39)$$

### *8.7.2. Presentation of minimum or maximum values*

(1) The expression min{…;…;…} or max{…;…;…} should be used to express the minimum or maximum value of a set of alternatives to be taken. Inequalities symbols (i.e. <, >, ≤, ≥) should not be used for this purpose.

#### *8.7.3. Symbols after formulae*

(1) For reasons of ease of use the meaning of the symbol may also be, and usually is, repeated when the symbol appears first in a clause.

(2) Symbols are given under each formula in the order of occurrence in the formula.

#### *8.7.4. Presentation of logarithmic values*

(1) In line with CEN IR 3, the expression 'ln *x*' should be used to denote the natural logarithm of *x*; 'lg *x*' to denote the decimal logarithm; 'lb *x*' to denote the binary logarithm; and '$\log_a x$' to denote a logarithm to the base of *a.*

#### *8.7.5. Drafting formulae*

(1) Formulae should be prepared using the Microsoft Equation Editor included with Microsoft Word 2013 or later.

NOTE: The latest Microsoft Equation Editor stores formulae in Office MathML (OMML) format, which is an XML format proprietary to Microsoft. It can, however, be easily exported to MathML, which is an open XML format developed by the World Wide Web Consortium (WWWC) or converted to MathType (see below).

(2) Formulae that have been prepared using Microsoft Equation Editor 3.0 or MathType 6 should be converted to OMML using the built-in conversion facility in Microsoft Word 2013 or later.

NOTE: Formulae prepared using Microsoft Equation Editor 3.0 or MathType 6 are stored in the binary Object Linking and Embedding (OLE) format. Equation Editor 3.0 is and MathType 6 are no longer supported by Microsoft (owing to security issues).

(3) Formulae that have been inserted as graphics should be converted to OMML using dedicated optical character recognition software (such as Mathpix).

### 8.8. References to Eurocodes, Eurocode parts, clauses, and paragraphs

#### *8.8.1. References to Eurocodes*

(1) References to a specific Eurocode in its entirety shall use the wording “EN 19xxx (all parts)”, for example, "EN 1991 (all parts)".

(2) The wording "EN 19xxx" without the qualification "(all parts)" shall not be used to refer to a specific Eurocode in its entirety since "EN 19xxx" is not itself a European standard (the standards are, for example, EN 1991-2, EN 1991-3, etc).

#### *8.8.2. References to Eurocode parts*

(1) References to a specific part of a Eurocode should use the wording “see EN 19xxx-x”.

(2) Where a reference to another Eurocode part is provided solely for information to assist with navigation, then the reference should be included as a NOTE.

(3) Where a paragraph refers to compliance with another Eurocode part, then a reference should be included within the text of the paragraph using the phrase 'in accordance with'.

### *8.8.3. References in bridge Eurocode parts*

(1) Some Eurocodes contain a bridge part that relies on provisions in a more general part of that Eurocode.

> NOTE: For example, the bridge part of Eurocode 3 (i.e. EN 1993-2) relies on provisions in the general part (i.e. EN 1993-1-1).

(2) Where a bridge part relies on general provisions in another Eurocode part, then it shall include the following paragraph either in in its Scope (clause 1.1) or, where the application is more limited, at the start of a Clause:

> Unless specifically stated, EN 19xx-x applies.

(3) The bridge part should use the same top-level clause numbering (1, 2, 3, etc.) and clause headings as the general part, as defined in Annex D1.

(4) The bridge (or other structure-specific) part may align the numbering and headings of sub-clauses to a greater depth on a clause by clause basis, where this does not result in an excessive number of empty clauses.

(5) A similar approach to that for bridges may be used for other structure-specific parts (for example towers and masts, silos and tanks).

### *8.8.4. References to clauses and paragraphs*

(1) Where a Eurocode requirement modifies or supplements a related requirement in a superior Eurocode part (for example, principal Eurocode parts typically Part 1 or Part 1-1 within the same Eurocode), then standard phrases should be used to clarify the relationship of the paragraph with the superior part.

> NOTE Relationships can include whether the paragraph is an additional requirement, an alternative, a replacement, or that paragraphs should be omitted.

(2) The standard phrases should include a reference to the related Eurocode part and, where relevant, a reference to the relevant clauses, subclauses or paragraphs within the related Eurocode part.

(3) The standard phrases may be used either to cover a single paragraph, or to cover a group of paragraphs.

(4) The standard phrases that should be used at the beginning of a paragraph are given in the table below.

| **Type of cross reference** | **Standard phrase** | **Location** | **Examples** |
|---|---|---|---|
| Cross-reference requiring compliance with another Eurocode part | In accordance with EN 1997-1-1 | As relevant | *(1) Combinations of actions should be identified for verifying limit states involving failure of the ground, in accordance with EN 1997-1-1.* |
| Addition to a Eurocode part | In addition to EN 19xxx-x-x, [clause], … | At the beginning of a sentence | *(1) In addition to EN 1993-1-1, 7.1.2, the type of joint and its modelling should be chosen to ensure that the required fatigue life is attained.* |
| Addition to a whole sub-clause | | | *(1) In addition to EN 1992-1-1, 10, the following paragraphs in K.5 shall be applied.* |

| | | | |
|---|---|---|---|
| Alternative to a clause | As an alternative to EN 19xxx-x-x, [clause], … | At the beginning of a sentence | *(1) As an alternative to EN 1993-1-1, 8.2.4(2), for class 4 sections the design resistance may be taken as follows …* |
| Replacement of a clause | To replace EN 19xxx-x-x, [clause], … | At the beginning of a sentence | *(1) To replace EN 1994-1-1, 5.1.2(3), semi-continuous composite joints should not be used.* |
| Omission applied to a specific rule | EN 19xxx-x-x, [clause], shall apply/not apply | At the beginning of a sentence | *(1) EN 1993-1-8, 6.3.4(4) shall not be applied.* |
| Omission applied to a whole subclause | | | *(1) EN 1992-1-1, 12.9 shall not be applied.* |
| References contained in notes | For <subject>, see <reference> | As relevant | *NOTE For water actions induced by maritime currents and waves, see Annex A.6 and EN 1991-1-8.* |

(5) Where a standard phrase is used to cover a group of paragraphs, the standard phrase should be placed within its own paragraph with no other text and should include a reference to the paragraphs which are to be included.

## 8.9. References to other standards

### *8.9.1. General*

(1) The information obtained from standards referred to in an EN Eurocode Part should be consistent with the requirements specified in that Part. This technical compatibility should be achieved by active liaison between the responsible committees in accordance with BT decision C36/2014 (see Annex B). The CEN/TC 250 Secretary maintains a list of active liaisons which can be made available on request.

(2) References to non-normative documents (e.g. textbooks, published research papers) should generally be avoided. Consequently, bibliographies should not typically be necessary.

(3) Normative text shall not contain reference to an unpublished standard (see 7.5). However, in exceptional circumstances, when a standard is under development but is not yet published, it may be cited in a NOTE, as in the following example, and should then be listed in the Bibliography:

> (1) Pre-stressing steel used for structures in accordance with this Eurocode shall comply with relevant standards for prestressing steel.
>
> NOTE 1: The National Annex can specify relevant standards for prestressing steel.
> NOTE 2: The harmonized product standard prEN 10138 for prestressing steel is currently under development.

### *8.9.2. Product standards*

(1) The best approach to referencing product standards remains under review by CEN/TC 250 and an *ad hoc* group has been established to prepare further recommendations. In the interim the guidance contained in paragraphs 3 to 6 should be followed with the understanding that all technical assumptions relating to material and product properties shall be set out clearly in each EN Eurocode Part and explained in the accompanying background report.

(2) If there is complete consistency between the requirements stated in an EN Eurocode Part and the corresponding requirements in a product standard, the form of reference should be a simple statement following the guidance in CEN IR3 such as repeated in paragraph 4 below.

Note 1 The term “requirements” is used in product standards to include all aspects of performance of a product.

(3) When the consistency between an EN Eurocode Part and a product standard is not clear or complete, the form of referencing will need to be more detailed so that the Eurocode Part, taken together with the product standard, achieves complete consistency. This could involve establishing requirements in an EN Eurocode Part, either in the clause dealing with terms and definitions or as a normative Annex; it could be presented in the form of a table or in text, as found to be most easy to use. Groups of requirements may be described, as a matter of convenience, as "categories". Within the categories, limits of applicability of parameters may be given, if they are not included in the relevant product standard. Any use of categories in EN Eurocode Parts should not be confused with the use of levels, classes and thresholds in product standards in the sense of the Construction Products Regulation, although there may be a correspondence.

Note 2 As product standards will include or refer to relevant test methods for the requirements in the product standard the test methods should not be referred to in an EN Eurocode Part. If, for any reason, a test method for a property is not included or referenced in a product standard, the Eurocode Part may, itself, refer to a suitable test method.

(4) References should be to European standards (EN), firstly to require that the standard is observed in relation to the manufacture of the product:

- product *yyyy* shall be produced in accordance with EN *xxxx*

and secondly by appropriate choice from the following:

(a) when properties required for a design are mirrored by the properties in a product standard use one of the phrases:

- the properties of [product] shall be in accordance with EN *xxxx.*
- the properties of [product] in category *aaaa* shall be in accordance with [the corresponding category *zzzz*] in EN *xxxx*.

NOTE 3 The term category is used to define and represent a group of properties. It is used as a matter of convenience rather than as regulatory requirement.

(b) if the technical correspondence is less clear e.g because of the use of classes in product standards, a more direct link to specific clauses should be used:

- for [property] see a.b of EN *xxxx.*

(5) When suitable EN standards do not exist reference may be made to European Technical Specifications (TS) or European Assessment Documents (EAD). Given the product-specific nature of ETAs it may be possible, in order to avoid barriers to trade, to refer generically to other standards which satisfy the requirements of the European Assessment Document (EAD) on which the ETA is based. In that case it may be appropriate to give a definition of a "European Technical Product Specification" as:

> *"European Standard (EN), European Technical Specification (TS) or a transparent and reproducible assessment that complies with all the requirements of an EAD."*

(6) EADs should be informatively referenced in the text and listed in the Bibliography and not under Clause 2 Normative References. For example:

> NOTE EAD *XXXX* is available for the assessment and determination of properties of *YYYY* required for design to this Eurocode.

### *8.9.3. Execution standards*

(1) Although it is not the role of CEN/TC 250 to prepare standards for execution CEN BT Decision C36/2014, reproduced in Annex B, requires CEN/TC 250 to define clearly the interface between the Eurocodes and Product and Execution Standards. Some existing EN Eurocode Parts contain limited

guidance on execution because no other committee was able to prepare separate execution standards. However most EN Eurocode Parts are supported by separate standards for execution prepared by other committees.

(2) Work under M/515 has identified the need for stronger guidance on execution for timber structures. As an interim measure, initial drafting is being carried out in CEN/TC 250 with the agreement of other potential lead CEN TCs and subject to a clarification to CEN/BT by CEN/TC 250 of the minimum requirements to be included in an execution standard so that assumptions made in design are realised in the constructed works.

## 8.10. Use of conditional expressions

(1) Where possible, conditional expressions (i.e. requirements or advice that require a specific condition to be met in order to be applied) should be presented following the structure indicated below:

If <condition >, <requirement/recommendation/permissible approach>

## 8.11. Figures

(1) Figures shall be prepared in accordance with CEN IR 3, clause 28.5.1.

(2) Figures shall be in TIFF or EPS format, language neutral with a resolution of 600 dpi.

(3) The image boundaries shall not exceed 170 mm by 250 mm or 250 mm × 170 mm, depending on the object orientation. Sufficient space shall be provided within this area to accommodate the figure title, any comment concerning dimensions and a key (if required).

Note 1 The minimum CEN requirements for file formats and file naming conventions can found on CENDrafting of European Standards – Electronic preparationhttps://www.cencenelec.eu/news/videos/Pages/VIDEO-2016-039.aspx BOSS https://boss.cen.eu/reference-material/guidancedoc/pages/prepfiles/

Note 2 Further clauses can be added to this document as the need arises by decision of CEN/TC 250.

(4) CEN TC/250 has a derogation from BT to use two-part numbering in the Eurocodes for Tables and Figures (see 8.4). As an exception from CEN IR 3, file naming of Eurocode figures should follow the scheme illustrated below:

| Figure number or location | Suggested filename* |
|---|---|
| Figure 3,1 | 3_001 |
| Figure 6.2 | 6_002 |
| First and second parts of Figure 10.3 (if provided in separate files) | 10_003a<br>10_003b |
| Figure A.1 | a001 |
| Un-numbered figure in Table 6.10 | t6_6_010u |
| Un-numbered figure in Clause D.5 | d005 |
| Figure in Table G.2 (with table in sub-clause G.4) | g002 |

*The trailing number after the underscore (e.g. _1 or _2, or a, b c etc) differentiates between different parts of the same figures, when those parts are produced in separate files

Note Figure naming shall not contain spaces and/or special symbols (@,%,$,€,...)

# 9. Use of CEN/TS to support EN Eurocodes

(1) In the context of the development of EN Eurocode Parts under M/515, the use of CEN Technical Specifications (CEN/TS) arises primarily as Step 2 in the step-by-step procedure being adopted for Assessment, Glass, FRP and Membrane Structures (see 1(5) above).

(2) Technical Specifications may be proposed in other cases, typically for material that has not reached a sufficient level of maturity (including experience of its application) and consensus appropriate for publication as normative content in an EN.

(3) The widespread use of Technical Specifications to augment the Eurocodes is not encouraged as it can lead to confusion amongst users.

(4) The decision to develop a Technical Specification to support the Eurocodes is made by CEN/TC 250. Development of a TS should follow the guidance and procedures given in CEN IR 2.

# 10. Enhancing ease of use

## 10.1. General

(1) All tasks in the work programme include a requirement to work to improve the ease of use of existing Eurocode parts following the CEN/TC 250 position paper, and to ensure that new parts are drafted with an emphasis on ease of use, all to the extent that it can be technically justified whilst safeguarding the core of essential technical requirements.

## 10.2. CEN/TC 250 Position paper

(1) The CEN/TC 250 position paper on enhancing the ease of use of the Eurocodes is reproduced in Annex F.

## 10.3. Six tests for good drafting of Eurocode clauses

(1) The six tests indicated in Figure 1 should be considered in drafting Eurocode clauses.

(2) In applying these tests, the context within which the clause will be read should be taken into account. They should also be applied considering the target audience for the Eurocodes, namely, 'Practitioners – Competent Engineers', defined as 'Competent civil, structural and geotechnical engineers, typically qualified Professionals able to work independently in relevant fields'.

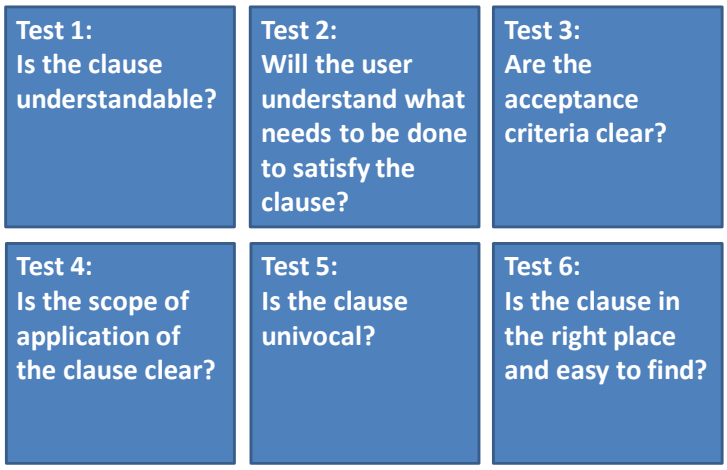


**Figure 1 Six tests for good drafting of Eurocode clauses**

## 10.4. Technical Reviewer

(1) A Technical Reviewer will provide feedback to the Project Team on improving ease of use and consistency throughout the codes.

(2) The Project Teams shall respond to the Technical Reviewer's recommendations.

# Annex A. Management of the work programme

(A1) Figure A.1 shows the current CEN/TC 250 Organizational Structure (from 1 April 2023).

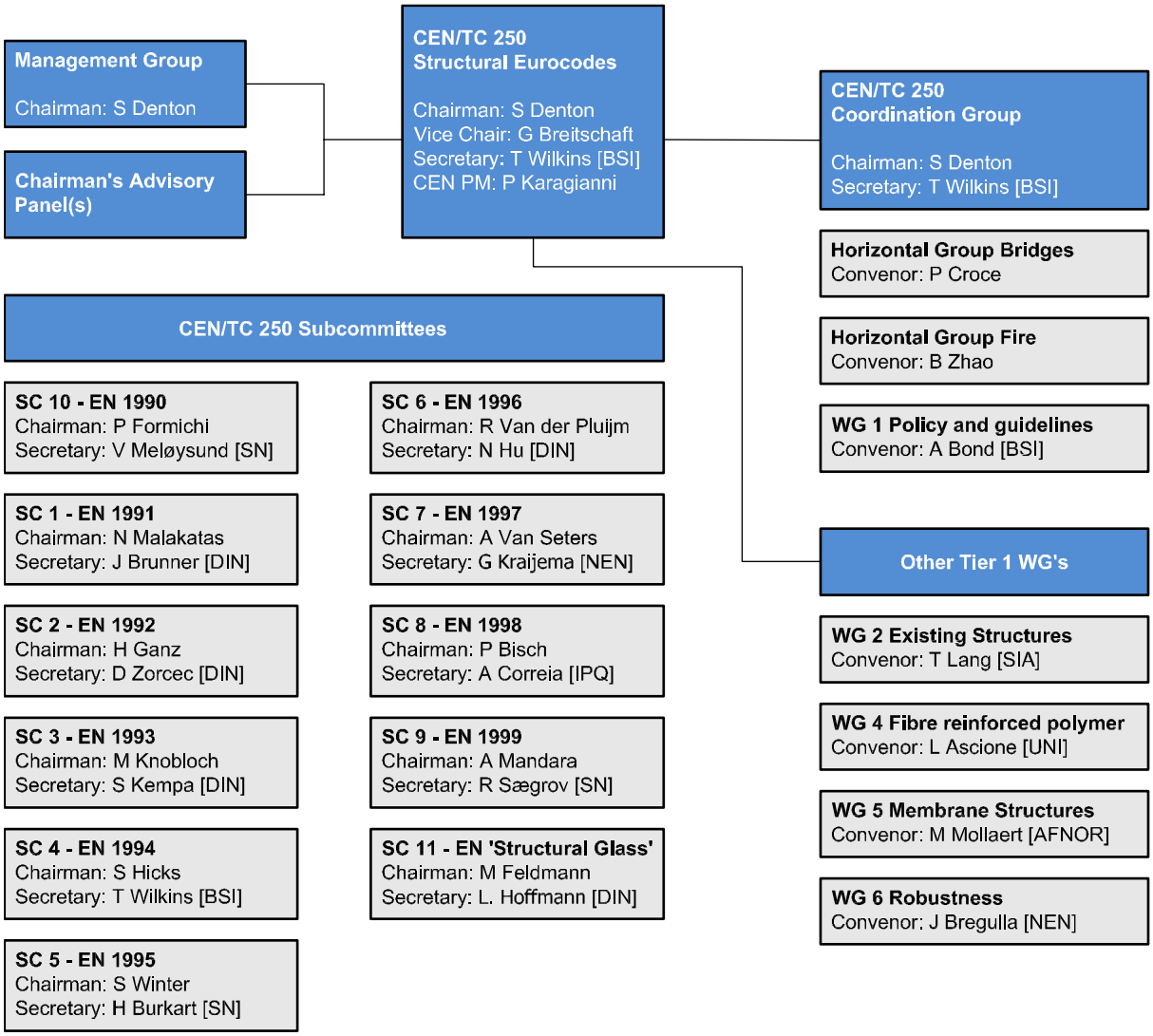


**Figure A.1 – CEN/TC 250 Organizational Structure**

(A2) The CEN/TC 250 Management Group oversees delivery of the CEN/TC 250 work programme. It comprises the Chairman, Vice Chairman, Secretary, CEN PM and Technical Reviewer.

(A3) The overall CEN organizational structure and responsibilities for standardisation work is given in CEN IR 2 (available from https://boss.cen.eu/reference-material/RefDocs/Pages).

# Annex B. CEN/BT Decisions concerning Structural Eurocodes

## B1. Decision BT C36/2014

Subject: Structural and geotechnical design rules: CEN/TC 250 ‘Structural Eurocodes’ and other CEN/TCs

BT

• noting

− Resolution BTS1 11/1992, BT 23/1992 and BT C2/2001 as given in Annex 1 to BT N 9545;
− CEN/TC 250 Decision 329 as given in annex 2 to BT N 9545;
− Mandate M/515 requirements for further development of the existing Eurocodes as well as development of new Eurocode parts;
− the need for coordination and consistency between product TCs and CEN/TC 250 ‘Structural Eurocodes’,

• decides

− to confirm to CEN/TC 250 the overall responsibility for structural and geotechnical design rules for building and civil engineering;
− that CEN/TCs (products, execution) should refer in their standards (when possible) to the relevant Eurocodes parts, when reference to structural and geotechnical design rules are needed;
− that rules relating to structural and geotechnical design should only be included in standards under other CEN/TCs’ responsibility following agreement with CEN/TC 250;
− that, in cases where rules relating to structural and geotechnical design have been included in standards by other CEN/TCs, a mode of cooperation should be established with CEN/TC 250 to transpose design rules to the relevant Eurocode part where agreed or, as a minimum, eliminate any incompatibilities or ambiguities,

• invites

− CEN/TC 250 to contact other CEN/TCs setting out their planned work programme and inviting the reconfirmation and/or establishment of effective liaisons between product TCs and CEN/TC 250 to support the implementation of this decision;
− CEN/TC 250 to report to CEN/BT at least annually on the effectiveness of coordination with other CEN/TCs as well as the existing liaisons;
− CEN/TCs (products, execution) having in their standards rules relating to structural and geotechnical design or developing rules relating to structural and geotechnical design to liaise closely with CEN/TC 250.

This decision is applicable as from: 2014-05-07

## B2. Decision BT C91/2014

Subject: Drafting rules for future work of CEN/TC 250 ‘Structural Eurocodes’

• noting

- resolution BT S1 38/1994 as in Annex 1 to BT N 9670;
- CEN/TC 250 Decision 341 as given in Annex 2 to BT N 9670.

• agrees,

- that, EN Eurocodes developed under mandate M/515 may continue to use a numbering system for equations, figures and tables that adopts a two-part reference including the clause number;

    - stresses that this decision only applies for CEN/TC 250 standards developed under Mandate M/515

This decision is applicable as from 13 August 2014.

## B3. Decision BT 53/2016

Subject: CEN/TC 250 - Ambiguity of scope

BT,

- noting the discussions at the 80th CEN/BT meeting on the AFNOR position paper (BT N 10491) and the CEN/TC 250 ‘Structural Eurocodes’ response (BT N 10491a);

- asks CEN/TC 250 to clarify under which conditions an ‘execution standard’ would need to be prepared and to introduce that proposal at the level of the Sector Forum on Construction.

This decision is applicable as from: 2016-09-30

## B4. Decision BT 27/2017

Subject: CEN/TC 250 ‘Structural Eurocodes’ – Change of scope

BT/TCMG, on behalf of BT,

• noting

− CEN/TC 250 ‘Structural Eurocodes’ proposal for a clarification and change of its scope (draft BT C29/2017);

− the fundamental disagreement and related comments from AFNOR (Addendum to BT N 10655);

− the discussions at the 57th BT/TCMG meeting;

• approves the following modified scope for CEN/TC 250:

‘Standardization of structural and geotechnical design rules for building and civil engineering works taking into account the relationship between design rules and the assumptions to be made for materials, execution and control.’

This decision is applicable as from: 2017-04-06

Add BT 81/2017 CEN/TC 250 Ambiguity of scope (follow on from BT 53/2016)

## B5. Decision BT 20/2019

Subject: CEN/TC 250 – National Annexes to Eurocodes

BT/TCMG, on behalf of BT

- noting

− the background of the EC Guidance Paper L Application and use of Eurocodes';

− Decision BT C105/2013 Eurocodes - Availability of National Annexes for CEN/TC 250 'Eurocodes' Sub-Committees and Working Groups;

− the request from CEN/TC 250, supported by decision BT 37/2018 'Eurocodes – Continued use of National Annexes in CEN/TC 250';

- agrees that deliverables developed by CEN/TC 250 under mandate M/515 shall retain the same capabilities for National Annexes as established in the first generation of EN Eurocodes.

- reminds CEN/TC 250 that the ultimate goal consists in developing standards in line with the global relevance policy, in that they refer to essential differences rather than national differences (geographic, climate, seismic risks, etc.) and therefore expects CEN/TC 250 to reduce the number of national determined parameters and to eliminate them over time, in line with M/515.

## B6. Decision BT 8/2021

Subject: CEN/TC 250 - Common DOP and DOW for second generation Eurocodes

BT,

- noting
  - the CEN/TC 250 'Structural Eurocodes' response to Mandate M/515, CEN/TC 250 N 993 (Annex 1);
  - the challenging publication schedule for the 2nd generation of Eurocodes under Mandate M/515,
  - as illustrated in the draft schedule CEN/TC 250 N 2599 (separate Annex 2);
  - CEN/TC 250 unanimous decision on the 19–20 November 2020 reflected in Decision 31/2020 (602) (Annex 3) agreeing that:
    - All 2nd generation EN Eurocodes will have a DOP of 30 September 2027;
    - All 2nd generation EN Eurocodes will have a DOW of 30 March 2028;
  - agreed to extend the DOP and DOW for all 2nd generation EN Eurocodes by setting:
    - 2027-09-30 for the DOP;
    - 2028-03-30 for the DOW.

This decision is applicable as from: 2021-02-18

## B7. Decision BT 5/2022

Subject: CEN/TC 250 ‘Structural Eurocodes’ - Guidance on drafting National Annexes for NSBs

BT,

- noting
    - the outcome of the discussion at the CEN/BT TCMG meeting of 2022-03-10, includ-ing the comments provided to improve the CEN/TC 250 'Structural Eurocodes' guidance document on drafting national annexes for NSBs and the potential conflict between its Clause 4 and CEN-CENELEC Guide 10;
    - the revised CEN/TC 250 guidance document (see N 12997 Annex 1);
    - the outcome of JCAG consultation by correspondence concluding that there is no con-flict between Clause 4 of the CEN/TC 250 guidance document on drafting na-tional annexes for NSBs and CEN-CENELEC Guide 10 since the latter one is relat-ed to CEN and CENELEC deliverables only and that national annexes are outside its scope;
    - the exceptional need for guidance for this specific sector;
- approves the CEN/TC 250 guidance document on drafting of national annexes for NSBs as presented in Annex 1 and encourages CEN/TC 250 to consider the AFNOR comments for in-clusion in future discussions and documents.

This decision is applicable as from: 2022-05-05

# Annex C. EN Eurocode Parts

(C1) The titles and brief scopes for existing and proposed European Standards (EN) are given CEN – Technical Bodies – CEN/TC 250  Structural Eurocodes – Work Programme and Published Standardson CEN_CENELC as https://standards.cencenelec.eu/dyn/www/f?p=205:105:0:::::
Note: During the development phase the details of title and scope may change.

# Annex D. Common clauses for EN Eurocode Parts

## D1. Common structure of EN Eurocode Parts

(1) The following common structure shall be used for Eurocode material parts, unless it is agreed that this will not be appropriate. Other Eurocodes shall utilise those components of the common structure that are relevant.

**European Foreword**[1]

**Introduction**[2]

**1 Scope**

1.1 Scope of EN 19xxx-x-x

1.2 Assumptions

**2 Normative references**

**3 Terms, definitions and symbols**

3.1 Terms and definitions

3.2 Symbols and abbreviations

**4 Basis of Design**[3]/Classificiation of Actions[4]/Basis of Design and Modelling[5]

**5 Materials**

**6 Durability/Groundwater**[6]

**7 Structural Analysis/Geotechnical Analysis**[3]

**8 Ultimate Limit States**

**9 Serviceability Limit States**

Additional optional clauses may be added as needed. Where they are relevant, the following sequence and naming of clauses should generally be used:

- Fatigue
- Detailing
- Joints and connections
- <other special requirements relevant to Eurocode part given appropriate clause name>
- Design assisted by testing (or Testing[3])
- Reporting
- Annexes (Normative)
- Annexes (Informative)

[1]see D3 for more details; [2]see D4 for more details; [3]see D5 for more details; [4]title used in EN 1991-2; [5]title used in EN 1993-1-14; [6]title used in EN 1997-1

## D2. Common structure for EN Eurocode Fire Parts (EN 19xxx-1-2)

(1) The following common structure shall be used for Eurocode fire parts, unless it is agreed that this will not be appropriate.

**European Foreword**

**Introduction**

**1 Scope**

1.1 Scope of EN 19xxx-x-x

1.2 Assumptions

**2 Normative references**

**3 Terms, definitions and symbols**

3.1 Terms and definitions

3.2 Symbols and abbreviations

**4 Basis of design**[1]

4.1 General[1]

4.2 Nominal fire exposure

4.3 Physically based fire exposure

4.4 Actions

4.5 Design values of material properties

4.6 Verification methods

4.7 Member analysis

4.8 Analysis of parts of the structure

4.9 Global structural analysis

**5 Material properties**[1]

5.1 General[1]

5.2 Thermal properties

5.3 Mechanical properties

**6 Tabulated design data**

6.1 General[1]

**7 Simplified design methods**

7.1 General[1]

**8 Advanced design methods**

8.1 General[1]

8.2 Thermal analysis

8.3 Mechanical analysis

8.4 Validation of advanced design methods

**9 Detailing**

9.1 General[1]

[1]Common text, as agreed by CEN/TC 250 HGF, is available in document CEN/TC 250N 3370

## D3. Common European Foreword for EN Eurocode Parts and CEN/TS

**European Foreword** ***[to be used in EN for enquiry stage and Formal Vote]***

This document (prEN 19xxx:dddd [for enquiry stage]/FprEN 19xxx:dddd [for Formal Vote]) has been prepared by Technical Committee CEN/TC 250 "Structural Eurocodes", the secretariat of which is held by BSI. CEN/TC 250 is responsible for all Structural Eurocodes and has been assigned responsibility for structural and geotechnical design matters by CEN.

This document is currently submitted to the Formal Vote. ***[to be used for Formal Vote only]***

This document will supersede EN 19xx:dddd.

The first generation of EN Eurocodes was published between 2002 and 2007. This document forms part of the second generation of the Eurocodes, which have been prepared under Mandate M/515 issued to CEN by the European Commission and the European Free Trade Association.

The Eurocodes have been drafted to be used in conjunction with relevant execution, material, product and test standards, and to identify requirements for execution, materials, products and testing that are relied upon by the Eurocodes.

The Eurocodes recognise the responsibility of each Member State and have safeguarded their right to determine values related to regulatory safety matters at national level through the use of National Annexes.

**European Foreword** ***[to be used in EN for publication stage]***

This document (EN 19xxx:dddd) has been prepared by Technical Committee CEN/TC 250 "Structural Eurocodes", the secretariat of which is held by BSI. CEN/TC 250 is responsible for all Structural Eurocodes and has been assigned responsibility for structural and geotechnical design matters by CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2027 and conflicting national standards shall be withdrawn at the latest by March 2028.

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

This document supersedes EN 19xx:dddd.

The first generation of EN Eurocodes was published between 2002 and 2007. This document forms part of the second generation of the Eurocodes, which have been prepared under Mandate M/515 issued to CEN by the European Commission and the European Free Trade Association.

The Eurocodes have been drafted to be used in conjunction with relevant execution, material, product and test standards, and to identify requirements for execution, materials, products and testing that are relied upon by the Eurocodes.

The Eurocodes recognise the responsibility of each Member State and have safeguarded their right to determine values related to regulatory safety matters at national level through the use of National Annexes.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cy-

prus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## European Foreword *[to be used in CEN TS for approval]*

This document (FprCEN/TS xxxx:dddd) has been prepared by Technical Committee CEN/TC 250 "Structural Eurocodes", the secretariat of which is held by BSI. CEN/TC 250 is responsible for all Structural Eurocodes and has been assigned responsibility for structural and geotechnical design matters by CEN.

This document is currently submitted to the Vote on TS.

This document will supersede CEN/TS xxxx:dddd.

This Technical Specification has been prepared under Mandate M/515 issued to CEN by the European Commission and the European Free Trade Association.

This Technical Specification has been drafted to be used in conjunction with relevant execution, material, product and test standards, and to identify requirements for execution, materials, products and testing that are relied upon by this document.

**European Foreword** ***[to be used in CEN TS for publication stage]***

This document (CEN/TS xxxx:dddd) has been prepared by Technical Committee CEN/TC 250 "Structural Eurocodes", the secretariat of which is held by BSI. CEN/TC 250 is responsible for all Structural Eurocodes and has been assigned responsibility for structural and geotechnical design matters by CEN.

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

This document supersedes CEN/TS xxxx:dddd.

This Technical Specification has been prepared under Mandate M/515 issued to CEN by the European Commission and the European Free Trade Association.

This Technical Specification has been drafted to be used in conjunction with relevant execution, material, product and test standards, and to identify requirements for execution, materials, products and testing that are relied upon by this document.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## D4. Common Introduction for EN Eurocode Parts

# Introduction

### 0.1 Introduction to the Eurocodes

The Structural Eurocodes comprise the following standards generally consisting of a number of Parts:

- EN 1990 Eurocode — Basis of structural and geotechnical design
- EN 1991 Eurocode 1 — Actions on structures
- EN 1992 Eurocode 2 — Design of concrete structures
- EN 1993 Eurocode 3 — Design of steel structures
- EN 1994 Eurocode 4 — Design of composite steel and concrete structures
- EN 1995 Eurocode 5 — Design of timber structures
- EN 1996 Eurocode 6 — Design of masonry structures
- EN 1997 Eurocode 7 — Geotechnical design
- EN 1998 Eurocode 8 — Design of structures for earthquake resistance
- EN 1999 Eurocode 9 — Design of aluminium structures
- New parts are under development, e.g. Eurocode for design of structural glass

The Eurocodes are intended for use by designers, clients, manufacturers, constructors, relevant authorities (in exercising their duties in accordance with national or international regulations), educators, software developers, and committees drafting standards for related product, testing and execution standards.

NOTE Some aspects of design are most appropriately specified by relevant authorities or, where not specified, can be agreed on a project-specific basis between relevant parties such as designers and clients. The Eurocodes identify such aspects making explicit reference to relevant authorities and relevant parties.

### 0.2 Introduction to EN 19xxx Eurocode (all parts)

*[This contains information formerly included in "Scope of EN 19xx"]*

Include a clause:

EN 199x is subdivided in various parts: (to list them)

*[for EN 1990, the heading is "**0.2 Introduction to EN 1990**"]*

### 0.3 Introduction to EN 19xxx-x-x

*[This contains "Additional information specific to EN 19xx" taken from current Eurocode parts and revised as appropriate]*

### 0.4 Verbal forms used in the Eurocodes

The verb "shall" expresses a requirement strictly to be followed and from which no deviation is permitted in order to comply with the Eurocodes.

The verb "should" expresses a highly recommended choice or course of action. Subject to national regulation and/or any relevant contractual provisions, alternative approaches could be used/adopted where technically justified.

The verb "may" expresses a course of action permissible within the limits of the Eurocodes.

The verb “can" expresses possibility and capability; it is used for statements of fact and clarification of concepts.

**For Eurocode parts:**

**0.5 National annex for EN 19xxx-x-x**

National choice is allowed in this document where explicitly stated within notes. National choice includes the selection of values for Nationally Determined Parameters (NDPs).

The national standard implementing EN 19xxx-x-x can have a National Annex containing all national choices to be used for the design of buildings and civil engineering works to be constructed in the relevant country.

When no national choice is given, the default choice given in this document is to be used.

When no national choice is made and no default is given in this document, the choice can be specified by a relevant authority or, where not specified, agreed for a specific project by appropriate parties.

National choice is allowed in EN 19xxx-x-x through notes to the following clauses:

*[list of clauses to follow, presented row-wise in a hidden 4 column table, as illustrated below]*

| | | | |
|---|---|---|---|
| 4.2(3) | 4.3(1) | 6.1.3.2(4) – 4 choices | 6.1.3.2(6) |
| 7.1.5(7) | 8.3.3.1(5) | 8.3.4.2(2) – 2 choices | A.1.2(1) |
| A.1.3(1) | A.1.5.1(1) | A.1.5.1(1) – 2 choices | A.1.5.3(1) |
| A.1.6(1) | B.4(2) | | |

National choice is allowed in EN 19xxx-x-x on the application of the following informative annexes:

*[list of Annexes clauses, presented row-wise in a hidden 4 column table, as illustrated below]*

| | | | |
|---|---|---|---|
| Annex B | Annex C | Annex D | Annex E |
| Annex F | Annex G | Annex H | |

The National Annex can contain, directly or by reference, non-contradictory complementary information for ease of implementation, provided it does not alter any provisions of the Eurocodes.

**For CEN/TS:**

**0.5 National annex for CEN/TS xxxx**

National choice is allowed in this document where explicitly stated within notes. National choice includes the selection of values for Nationally Determined Parameters (NDPs).

The national document implementing CEN/TS xxxx can have a National Annex containing all national choices to be used for the design of buildings and civil engineering works to be constructed in the relevant country.

When no national choice is given, the default choice given in this document is to be used.

When no national choice is made and no default is given in this document, the choice can be specified by a relevant authority or, where not specified, agreed for a specific project by appropriate parties.

National choice is allowed in CEN/TS xxxx through notes to the following clauses:

*[list of clauses to follow, presented as illustrated above]*

National choice is allowed in CEN/TS xxxx on the application of the following informative annexes:

*[list of Annexes clauses to follow]*

The National Annex can contain, directly or by reference, non-contradictory complementary information for ease of implementation, provided it does not alter any provisions of the Eurocodes.

## D5. Contents for 4 Basis of Design

(1) Clause 4 *Basis of design* should be structured with the following sequence of titles for sub-clauses (i.e. two-level number, for example 4.1) when there is appropriate content. Similarly, for further sub-divisions (i.e. three-level number, for example 4.1.1) the items listed below should be selected as appropriate.

| | |
|---|---|
| **4** | **Basis of design** |
| **4.1** | **General rules** |
| | Basic requirements |
| | Structural [Geotechnical] reliability |
| | Consequences of failure |
| | Robustness |
| | Design service life |
| | Durability |
| | Sustainability |
| | Quality management |
| **4.2** | **Principles of limit state design** |
| | General |
| | Design situations |
| **4.3** | **Basic variables** |
| | Actions and environmental influences |
| | Material and product properties |
| | Geometrical properties |
| **4.4** | **Verification by the partial factor method** |
| | Design values of actions |
| | Design values of material properties |
| | Design values of geometrical properties |
| | Design resistances |
| | Combination of actions |

| | |
|---|---|
| **4.5** | **Verification by (…)** |
| **4.6** | **Design assisted by testing** |
| **4.7** | **<As relevant>** |

## D6. Content at the start of an Informative Annex

(1) Each informative annex shall start with the two clauses shown below, which clarify the use of an Informative Annex (A.1) and its scope and field of application (A.2).

**Annex A**

**(informative)**

**Title**

**A.1 Use of this annex**

(1) This Informative Annex provides complementary / supplementary guidance to [*specific clause(s)*] for [*subject*].

NOTE National choice on the application of this Informative Annex is given in the National Annex. If the National Annex contains no information on the application of this informative annex, it can be used.

**A.2 Scope and field of application**

(1) This Informative Annex covers / applies to *****

(2) This Informative Annex does not apply to *****

## D7. Content at the start of a Normative Annex

(1) Each Normative annex shall start with the two clauses shown below, which clarify the use of an Annex (A.1) and its scope and field of application (A.2).

**Annex A**

**(normative)**

**Title**

**A.1 Use of this annex**

(1) This Normative Annex contains additional provisions to [*specific clause(s)*] for [*subject*].

**A.2 Scope and field of application**

(1) This Normative Annex covers / applies to *****

(2) This Normative Annex does not apply to *****

# Annex E. Nationally Determined Parameters (NDPs)

(El) This Annex reproduces document CEN/TC 250 N 1493 'Position paper on reducing the number of Nationally Determined Parameters (NDPs) in the Structural Eurocodes', ratified by CEN/TC 250 in decision 427/2016. The document sets out a three-step process for reducing the number of Nationally Determined Parameters (NDPs) to support decision making of CEN/TC 250, its SCs, WGs and HGs, together with Mandate M/515 project teams (PTs), engaged in drafting the second generation of Structural Eurocodes.

**CEN/TC 250 N 1493 Position paper on reducing the number of Nationally Determined Parameters (NDPs) in the Structural Eurocodes**

## 1. Purpose of this document

This document presents the overall CEN/TC 250 approach and specific aspects of guidance for reducing the number of Nationally Determined Parameters (NDPs) in the Structural Eurocodes. Its purpose is to support decision making of CEN/TC 250 Sub-Committees (SCs), Working Groups (WGs), Horizontal Groups (HGs) and Project Teams (PTs) engaged in drafting the second generation of Structural Eurocodes.

Given the complexity and sensitivity of the objective, balanced and respectful judgements need to be made about the application of the guidelines. The obligation on SCs, WGs, HGs and PTs is that the guidelines should be understood and taken into consideration, informed judgements made, and that decisions taken can be justified.

## 2. Background

Achieving a reduction in the number of NDPs in the Eurocodes is an agreed objective of CEN/TC 250 and a specific requirement of the European Commission Mandate M/515 for the development of the second generation of EN-Eurocodes.

For this reason, in the scope of tasks for Project Teams in the Call for Experts for Phase 1 of the CEN/TC 250 work programme, the following was included concerning the reduction of NDPs:

> "*Nationally Determined Parameters (NDPs) allow Countries to decide on safety levels, and to give national geographic and climatic data, in National Annexes. The inclusion of NDPs in the published Eurocodes has been more extensive than was originally envisaged.*
>
> *All tasks concerned with existing Eurocode parts include a requirement to work to reduce the number of NDPs and enable better consensus on values adopted by Countries. Guidance will be provided by CEN/TC 250 on the approach to be followed. However, it is expected that the work of Project Teams will be focused only on a proportion of the existing NDPs, as identified and agreed with the relevant SC, WG or HG*."

Furthermore, in the relevant task definitions, Sub-task no. 1 in all Tasks of Project Teams engaged in the evolution of first generation Eurocode Parts to second generation ones, states:

> "*Following guidance provided by CEN/TC 250, agree NDPs to consider for detailed review with the relevant SC/WG/HG. Develop proposals to reduce the number of NDPs and/or enable better consensus on values adopted by Countries to be achieved. Incorporate those proposals agreed with the relevant SC/WG/HG into task deliverables*."

This paper is intended to provide the guidance referenced in the Call for Experts.

The issue of NDPs has been the subject of discussions in CEN/TC 250 and its SCs, WGs and HGs for several years. In support of developing the guidelines contained in this position paper, at its meeting in Dublin in May 2015, CEN/TC 250 agreed to the establishment of an ad hoc group to provide guidance on the definition of legitimate NDPs.

CEN/TC 250 has considered the recommendations contained in the final report of this ad hoc group [2], as well as the associated discussions at the CEN/TC 250 meeting in Lisbon in November 2015, and the synthesis of these discussions presented by the CEN/TC 250 Chairman at that meeting [3], and has produced the guidelines presented in this paper.

Further background to the number of NDPs in the current generation of Eurocodes and their legal basis is included in CEN/TC 250 N 1493 Annex A.

## 3. Objectives and governing principles

CEN/TC 250 has three primary objectives associated with the treatment of NDPs during the development of the second generation of the Structural Eurocodes. These are:

1. To reduce the number of National Determined Parameters

2. To develop Standards that can be implemented by CEN members

3. To maintain consensus, evidenced through positive formal votes by CEN members

In support of these objectives, CEN/TC 250 has established the following principles to guide efforts to reduce the number of NDPs in the Eurocodes:

1. The development of the second generation of the Eurocodes is an 'evolution', thus the approach to reviewing NDPs should build from the basis for them set out in Guidance Paper L (see Annex A)

2. Some parameters must be NDPs, even if all countries agree on a specific value or choice

3. Some parameters are subject to variation for geographic or climatic reasons; these must be NDPs although the Eurocodes should be as clear as possible on how they are to be determined

4. Effort should be made to limit the number of other NDPs, but this must be done pragmatically and respectfully of national positions

## 4. Approach

The approach to reducing the number of NDPs comprises three steps. These are to be undertaken by SCs, WGs and HGs, in conjunction with their relevant PTs.

These three steps are directly applicable to the review of current NDPs during the revision of existing
Eurocode parts.

The guidance underpinning each step is also applicable in the development of new Eurocode parts or where the introduction of a new NDP into an existing Eurocode part is being considered as a result of a change in scope or technical provisions.

### 4.1 Step 1: Identification of parameters that must be NDPs

In the first step, all parameters that must be NDPs are to be identified. Such 'essential NDPs' are:

- partial factors for materials and actions,
- the probability of the design seismic action being exceeded in a structure's design reference period,
- the time of fire exposure,
- design accidental actions,
- classification of structures in Consequences Classes corresponding to different Reliability Classes and levels, taking into account quality management requirements

All essential NDPs shall be retained in the Eurocodes, thereby allowing them to be specified in National Annexes. The only exception to this are cases when an NDP was included in the current Eurocodes with a recommended value of 1.0 and there is consensus that it can be removed. This might arise, for example, where all countries have adopted the recommended value of 1.0 and other related NDPs such as general partial factors for materials or actions provide an adequate basis to treat those matters within the competence of European member states.

### 4.2 Step 2: Review of other NDPs

All NDPs that are not classified as essential in Step 1 shall be reviewed in an effort to try to reduce their number. This review should be undertaken pragmatically, respecting the position of different CEN Members and seeking to understand why different opinions are held.

In undertaking this review, NDPs relating to the following are discouraged:

- technical issues, such as the choice of one mechanical model versus another, or one coefficient versus another in a resistance formulation;
- limits on geometric or similar parameters (e.g., size of cross section, upper or lower limits on reinforcement ratio or density) which have to do with limits of applicability of mechanical models;
- choice between advanced and simplified methods.

In addition, consideration should be given to eliminating NDPs that concern issues of performance that could be addressed at a project rather than national level. Consideration may also be given to using classes for some families of related NDPs. If such approaches are proposed, examples should be presented at the CEN/TC 250 Coordination Group to promote consistency.

### 4.3 Step 3: Reporting

Each SC, WG and HG shall report to CEN/TC 250 on the outcome of their efforts to reduce the number of NDPs. This shall be done by preparing a table listing the current NDPs and, as a minimum, identifying those deemed as essential, providing justification for the retention of other NDPs and confirming whether consensus has been reached on NDPs to be removed. This table shall also identify any new NDPs and why they are needed.

### References

[1] CEN/TC 250 Mandate M/515 EN "Mandate for amending existing Eurocodes and extendingThe scope of Structural Eurocodes", December 2012. (CEN/TC 250 document reference N993)

[2] CEN/TC 250 Ad Hoc Group on Reduction of NDPs. "Guidance for the definition of legitimate Nationally Determined Parameters (NDPs) in Structural Eurocodes", October 2015. (CEN/TC 250 document reference N1362)

[3] CEN/TC 250 Chairman's notes on the reduction of NDPs. Presentation given at CEN/TC 250 meeting Lisbon as a synthesis of discussions, November 2015. (CEN/TC 250 document reference N1403)

## CEN/TC 250 N 1493 Annex A Further background to National Determined Parameters

### A.1 Number of NDPs in the current generation of Eurocodes

Table A.1 provides a summary of the number of NDPs in the current EN Eurocodes and their break-down, relative to the number of Parts in each Eurocode and its total number of pages.

| Eurocode | No of Parts | No of Pages | No of NDPs |
|---|---|---|---|
| **EN 1990** | 1 + Annex A2 | 90 + 30 | 54 |
| **EN 1991** | 10 | 770 | 292 |
| **EN 1992** | 4 | 450 | 176 |
| **EN 1993** | 20 | 1250 | 236 |
| **EN 1994** | 3 | 330 | 42 |
| **EN 1995** | 3 | 225 | 21 |
| **EN 1996** | 4 | 300 | 31 |
| **EN 1997** | 2 | 340 | 42 |
| **EN 1998** | 6 | 600 | 103 |
| **EN 1999** | 5 | 500 | 58 |

**Table A.1: Analysis of NDPs in current Eurocodes**

### A.2 Legal basis of NDPs

NDPs replaced the "boxed" values in the ENV-Eurocodes.

It is accepted by all those involved in the conversion of ENVs to the first generation of EN Eurocodes that the NDPs were invaluable in that phase as a means to overcome disagreement between CEN Member States on key issues and avoid impasse situations. In that sense, their use was beyond the original intention.

The original legal basis of the NDPs and their predecessors (the “boxed values” in the ENVs) is not wholly clear. However, their incorporation in the EN Eurocodes followed Guidance Paper L (GPL), which stated:

> "2.1.1. The determination of the levels of safety of buildings and civil engineering works and parts thereof, including aspects of durability and economy, is, and remains, within the competence of the Member States.
>
> 2.1.2 Possible difference in geographical or climatic conditions (e.g. wind or snow), or in ways of life, as well as different levels of protection that may prevail at national, regional or local level … will be taken into account … by providing choices in the EN Eurocodes for identified values, classes, or alternative methods, to be determined at the national level (named Nationally Determined Parameters). Thus allowing the Member States to choose the level of safety, including aspects of durability and economy, applicable to works in their territory.

2.1.3 When Member States lay down their Nationally Determined Parameters, they should:

- choose from the classes included in the EN Eurocodes, or
- use the recommended value, or choose a value within the recommended range of values, for a symbol where the EN Eurocodes make a recommendation, or
- when alternative methods are given, use the recommended method, where the EN Eurocodes make a recommendation,
- take into account the need for coherence of the Nationally Determined Parameters laid down for the different EN Eurocodes and the various Parts thereof.

Member States are encouraged to co-operate to minimize the number of cases where recommendations for a value or method are not adopted for their nationally determined parameters.

2.1.4 The Nationally Determined Parameters laid down in a Member State should be made clearly known to the users of the EN Eurocodes and other parties concerned, including manufacturers.

2.1.5 When EN Eurocodes are used for the design of construction works, or parts thereof, the Nationally Determined Parameters of the Member State on whose territory the works are located shall be applied.

Note: Any reference to a EN Eurocode design should include the information on which set of Nationally Determined Parameters was used, whether or not the Nationally Determined Parameters that were used correspond to the recommendations given in the EN Eurocodes."

GPL was written in relation to the Construction Products Directive (CPD), to which it referred and was issued by the Commission. The CPD has been replaced by the Construction Product Regulation (CPR), and it is the Commission's view that guidance papers are not relevant for a Regulation. However, the Guidance papers remain published documents from the Commission.

The documents applicable today are:

- The Construction Products Regulation (CPR) No. 305/2011
- The European Commission Recommendation on the implementation and use of Eurocodes for construction works and structural construction products, Document No. C(2003)4639 (called hereafter Commission Recommendation)

The introduction to Annex I of the Construction Products Regulation (CPR) states that:

> "Construction works as a whole and in their separate parts must be fit for their intended use, taking into account in particular the health and safety of persons involved throughout the life cycle of the works. Subject to normal maintenance, construction works must satisfy these basic requirements for construction works for an economically reasonable working life."

The Commission Recommendation states:

> "For each Nationally Determined Parameter, the Eurocodes give a recommended value. However, Member States may choose a different specific value as the Nationally Determined Parameter, if they consider it necessary in order to ensure that building and civil engineering works are designed and executed in a way that does not endanger the safety of persons, domestic animals or property."

It states also

> "Member States should use the recommended values provided by the Eurocodes when nationally determined parameters have been identified in the Eurocodes. They should diverge from those recommended values only where geographical, geological or climatic conditions or specific levels of protection make that necessary."

The excerpts from the Commission Recommendation, based themselves on GPL, represent a clear Commission basis for the NDPs.

# Annex F. Enhancing ease of use of the Structural Eurocodes

(F1) This Annex reproduces document CEN/TC 250 N 1239, which is the CEN/TC 250 position paper on enhancing the ease of use of the Structural Eurocodes.

**CEN/TC 250 N 1239 CEN/TC 250 position paper on enhancing the ease of use of the Structural Eurocodes**

## 1. Purpose of this document

This document presents the overall CEN/TC 250 vision, approach and specific aspects of guidance for enhancing the ease of use of the Structural Eurocodes. Its purpose is to support decision making of CEN/TC 250 Sub-Committees (SCs), Working Groups (WGs), Horizontal Groups (HGs) and Project Teams (PTs) engaged in drafting a more user-orientated second generation of Structural Eurocodes.

The guidelines presented in this paper are not intended to provide contractual requirements to SCs, WGs, HGs and PTs. Given the complexity of the objective and the inevitable tensions that can arise between competing demands, balanced judgements need to be made about the application of the guidelines. Thus, the obligation on SCs, WGs, HGs and PTs is that the guidelines should be understood and taken into consideration, informed judgements made and that decisions taken can be justified. This document needs to be read as a whole.

## 2. Background

Improving the ease of use of the Eurocodes is an important issue discussed at some length by CEN/TC 250 and its subcommittees over recent years. It has also been of significant interest and concern in many CEN member countries. Enhancing the ease of use of the Eurocodes is a priority for CEN/TC 250 and a specific requirement of the European Commission Mandate M/515 issued to CEN in December 2012 [1]. CEN/TC 250 committed to improving the ease of use of the Eurocodes through Resolution 280 made in Helsinki in June 2010 and reproduced below.

To assist with this, in November 2013 CEN/TC 250 agreed to create a 'Chairman's Advisory Panel on ease of use' [2] (hereinafter called CAP) to develop recommendations for the approach to be taken to enhance the ease of use of the Eurocodes. The 15 members selected provided a balance between the Eurocodes stakeholders, with an emphasis on practitioners and individuals experienced in the development of the Eurocodes. Detailed information on the thorough and open process followed by the CAP to establish their recommendations on how the ease of use of the Structural Eurocodes can be enhanced is provided in the full CAP report [3].

CEN/TC 250 has considered the CAP recommendations, as well as comments and suggestions from CEN/TC 250 members [4], and has produced the guidelines presented in this paper.

**RESOLUTION 280 (CEN/TC 250, Helsinki, 18th June 2010)**

*Subject: CEN/TC 250 – simplification of Eurocodes*

*CEN/TC 250 acknowledges the challenge established in the Programming Mandate M/466 addressed to CEN in the field of the Structural Eurocodes to examine the potential for simplification of rules in the further development of the Eurocodes. CEN/TC 250 agrees to work towards achieving such simplification in the further development of the Eurocodes to support the ease of their use by designers through:*

*(i) improving the clarity;*

*(ii) simplifying routes through the Eurocodes;*

*(iii) limiting, where possible, the inclusion of alternative application rules; (iv) avoiding or removing rules of little practical use in design;*

*CEN/TC 250 agrees that such simplification should be limited to the extent that it is technically justified and should seek to avoid additional and/or empirical rules for particular structure or structural-element types.*

***The resolution was agreed by unanimity.***

## 3. Vision: delivering long term confidence

At the time of its publication, the first generation of Structural Eurocodes was the most comprehensive and advanced suite of design standards in the world and an outstanding example of harmonisation across countries, structural materials and types of structure.

CEN/TC 250's ambition is to build upon this accomplishment. Whilst respecting the achievements of the past, our vision for the second generation of Structural Eurocodes is to create a more user-orientated suite of design standards that are recognised as the most trusted and preferred in the world.

Attaining this vision is a complex challenge. Nevertheless, long-term confidence in the Eurocodes is based on their ability to evolve. Enhancing the ease of use of the Eurocodes is an essential component of the process of evolution.

More than 500 000 practitioners and thousands of other users across Europe and other countries outside Europe will be affected by the evolution of the Eurocodes. CEN/TC 250 is committed to having their needs at the forefront of our minds throughout our work.

## 4. Approach: five pillars to enhance ease of use

The CEN/TC 250 approach to guide decision making of SCs, WGs, HGs and PTs involved in developing the second generation of Eurocodes is based on the five pillars presented in Fig. 1. They provide the overall framework and a transparent approach for enhancing the ease of use of the Eurocodes.

These pillars are connected. The statements of intent to meet users' needs have been translated into a series of governing principles. The application of these principles will be illustrated through relevant examples. Performance measures can be used, where appropriate, to assure that the intended objectives are being achieved. Finally, central management, governance and support will ensure that a focus on ease of use is sustained, interdependencies are recognised and responded to, and that emergent issues are addressed.

The five pillars have been derived from Recommendation 1 of the CAP [3] and the comments and suggestions from CEN/TC 250 members [4]. Guidelines on each pillar are presented in the next section.

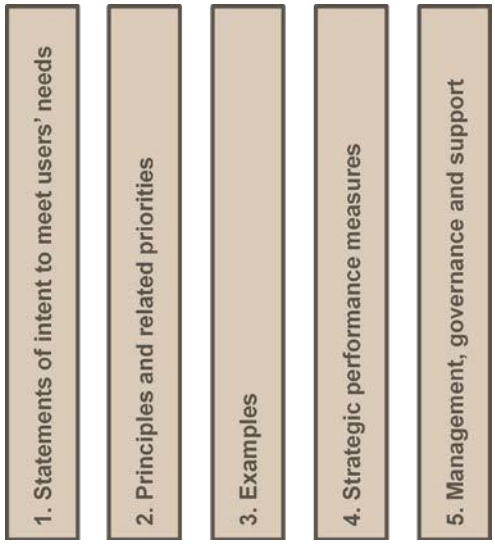


**Figure 1: Five pillars to enhance ease of use of the Eurocodes**

## 5. Guidelines: realising our ambitions

Five guidelines are given below to guide decision making in drafting a more user-orientated second generation of Eurocodes. These guidelines relate to each of the five pillars in Fig 1.

### 5.1 Statements of intent to meet users' needs

The development of the second generation of Structural Eurocodes will be undertaken focussing on users' needs. Ten categories of users have been identified. However, whilst all users of the Eurocodes are important, it is not possible to fulfil all their aspirations simultaneously. Therefore, a primary target audience has been identified to focus drafting efforts. The primary target audience will take precedence if conflicts with needs of other audiences arise.

The primary target audience for the Eurocodes evolution is "Practitioners – Competent engineers" as defined in Fig. 2. For all categories of users statements of intent setting out the aims of CEN/TC 250 are presented in Fig. 3.

| PRIMARY TARGET AUDIENCE | DEFINITION |
|---|---|
| Practitioners – Competent engineers | Competent civil, structural and geotechnical engineers, typically qualified Professionals able to work independently in relevant fields |

**Figure 2: Primary target audience for the Eurocodes evolution**

| CATEGORIES OF EUROCODES' USERS | CEN/TC 250 STATEMENTS OF INTENT |
|---|---|
| Practitioners – Competent engineers [Primary target audience] | We will aim to produce Standards that are suitable and clear for all common design cases without demanding disproportionate levels of effort to apply them |
| Practioners – Graduates | We will aim to produce Eurocodes that can be used by Graduates where necessary supplemented by suitable guidance documents and textbooks and under the supervision of an experienced practitioner when appropriate |
| Expert specialists | We will aim not to restrict innovation by providing freedom to experts to apply their specialist knowledge and expertise |
| Product Manufacturers | Working with other CEN/TCs we will aim to eliminate incompatibilities or ambiguities between the Eurocodes and Product Standards |
| Software developers | We will aim to provide unambiguous and complete design procedures. Accompanying formulae will be provided for charts and tables where possible |
| Educators | We will aim to use consistent underlying technical principles irrespective of the intended use of a structure (e.g. bridge, building, etc.) and that facilitate the linkage between physical behaviour and design rules |
| National regulator | We will endeavour to produce standards that can be referenced or quoted by National Regulations |
| Private sectors businesses | We will continue to promote technical harmonization across European markets in order to reduce barriers to trade |
| Clients | We will produce Eurocodes that enable the design of safe, serviceable, robust and durable structures, aiming to promoting cost effectiveness throughout their whole life cycle, including design, construction and maintenance |
| Other CEN/TCs | We will engage proactively to promote effective collaboration with those other CEN/TCs that have shared interests |

**Figure 3: Statements of intent to meet users' needs**

### 5.2 Principles and related priorities

Governing principles to guide the drafting of a more user-orientated generation of Eurocodes are given in Table 1. These governing principles have been classified into primary general principles and secondary specific principles. If conflicts arise, primary general principles shall take precedence over secondary specific ones. Within the two classifications, the principles are not ordered. Balanced judgements will therefore need to be exercised if conflicts arise between principles within the primary or secondary classifications. These principles reflect best practice in the development of Standards, satisfy CEN/TC 250 Resolution 280, are consistent with CEN's Internal Regulations and focus on those decisions that are under the control of CEN/TC 250.

**Table 1: Principles and related priorities**

**General principles (primary)**

1. Improving clarity and understandability of technical provisions of the Eurocodes
2. Improving accessibility to technical provisions and ease of navigation between them
3. Improving consistency within and between the Eurocodes
4. Including state-of the-art material the use of which is based on commonly accepted results of research and has been validated through sufficient practical experience
5. Considering the second generation of the Eurocodes as an "evolution" avoiding fundamental changes to the approach to design and to the structure of the Eurocodes unless adequately justified

**Specific principles (secondary)**

6. Providing clear guidance for all common design cases encountered by typical competent practitioners in the relevant field
7. Omitting or providing only general and basic technical provisions for special cases that will be very rarely encountered by typical competent practitioners in the relevant field
8. Not inhibiting the freedom of experts to work from first principles and providing adequate freedom for innovation
9. Limiting the inclusion of alternative application rules
10. Including simplified methods only where they are of general application, address commonly encountered situations, are technically justified and give more conservative results than the rigorous methods they are intended to simplify
11. Improving consistency with product standards and standards for execution
12. Providing technical provisions that are not excessive sensitive to execution tolerances beyond what can be practically achieved on site

The CAP has suggested targets and possible actions for each principle: they are illustrated in the final CAP report [3].



**5.3 Examples**

It will be valuable to illustrate the application of the governing principles through relevant examples to promote shared understanding and convergence of approach (e.g. through a better organisation of contents, better harmonisation, etc.).

In support of this effort, early in the evolution work, SCs, WGs and HGs will identify areas in their standards that present opportunities for enhancing ease of use following the principles in Table 1 and present tentative illustrations of how such improvement can be achieved. These examples will be developed through collaboration between SCs, WGs and HGs using the CEN/TC 250 CG as a forum for discussion.

Furthermore, under the coordination of WG1 early action will be taken on improving consistency between different Eurocode parts by using common structure and text.

## 5.4 Strategic performance measures

Understanding and assessing progress in applying the recommendations contained in this paper is important to provide confidence that CEN/TC 250's ambitions for enhancing the ease of use of the Eurocodes are being achieved.

Therefore, strategic performance measures may be used where merited and in collaboration with SCs, WGs and HGs to examine how the governing principles are being applied and to assess CEN/TC 250's progress towards our objective.

Suggestions for possible performance measures are provided in the final CAP report [3].

## 5.5 Management, governance and support

The CEN/TC 250 management group will be responsible for monitoring the overall application of the guidelines in this report. It will establish arrangements to assure that the recommendations of this report are implemented appropriately by SCs, WGs, HGs and PTs.

In support of this, issues of ease of use will be included in the SC/WG/HG report template and agenda for CG meetings to enable good practices and lessons learned to be shared and to promote consistency of implementation of the ease of use recommendations.

**References**

[1] CEN/TC 250 Mandate M/515 EN "Mandate for amending existing Eurocodes and extending the scope of Structural Eurocodes", December 2012

[2] CEN/TC 250 Chairman's briefing note 2013/4. "Chairman's Advisory Panel on Ease of Use", November 2013

[3] CEN/TC 250 Chairman's Advisory Panel. "Final report on enhancing ease of use of the Structural Eurocodes and reducing NDPs", December 2014

[4] CEN/TC 250 "Summary of comments on the CAP short report and actions taken", January 2015

# Annex G. Model Templates for Background Reports

(H1) Examples of model templates for background documents have been circulated as word documents see CEN/TC 250 N 1682. Copies are available from the Secretary on request.

## (H2) CEN/TC 250 Background Report Template 1

| Date: | Document: | Project: |
|---|---|---|

| **Comment reference where applicable** (e.g. 17) | **Clause/ Sub-clause** (e.g. 3.1) | **Paragraph/ Figure/ Table/** (e.g. Table 1) | **Subject** | **Change made** | **Background to change** |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

## (H3) CEN/TC 250 Background Report Template 2

| Clause | Original Eurocode Text | New Eurocode text | Background for change |
|---|---|---|---|
| **1.1 Scope** | | | |
| **1.1 (1)** | | | |
| **1.1 (2)** | | | |
| **1.1 (3)** | | | |

## (H4) CEN/TC 250 Background Report Template 3

| EN | |
|---|---|
| Subject | |
| Clause No./<br>Subclause No.<br>Annex | |
| Reason for change | |
| Original content | |
| Change | |
| Background information | |
| Ease of use justification<br><br>(See N1250 Annex F Table 1) | |

## (H5) CEN/TC 250 Background Report Template 4

Example of conventions adopted for drafting EN 1997:202x

2 Basis of geotechnical design

2.1 Design requirements

2.1.1 Geotechnical Category Hazard Classes

<Geotechnical Categories to be replaced by Geotechnical Hazard Classes – see document SC7.T1.N004>
<GCs are meant to be used to establish minimum requirements for 1) the extent and content of geotechnical investigations, 2) calculations, and 3) construction control checks – can this be done better in a different way?>
(8)P In order to establish minimum requirements for the extent and content of geotechnical investigations, calculations and construction control checks, the complexity of each geotechnical design shall be identified together with the associated risks. In particular, a distinction shall be made between:
— light and simple structures and small earthworks for which it is possible to ensure that the minimum requirements will be satisfied by experience and qualitative geotechnical investigations, with negligible risk;
— other geotechnical structures.
<EN 1997-1 2.1(8)P> <REQ><to be deleted>
(1) The hazard associated with each geotechnical design situation shall be classified as high (Hazard Class 3, 'HC3'), medium (Hazard Class 2, 'HC2'), or low (Hazard Class 1, HC1).
<New><REQ><see document SC7.T1.N004>
(2) Partial material factors used in geotechnical design may be adjusted according to the Hazard Class by applying a hazard factor kH as follows:

$$\gamma_M = k_H \times \gamma_M$$

where kH = 1.15 for HC3; kH = 1.0 for HC2; and kH = 0.85 for HC1; and γM,0 = the value of the partial material factor that is recommended by this standard.
<New><PER><see document SC7.T1.N004>

Key
<drafting note>
<New> = new clause
<EN 1997-1 2.1(8)P> = clause number in existing Eurocode 7
<REQ> = requirement ('shall')
<RCM> = recommendation ('should')
<PER> = permission ('may')
<POS> = possibility ('can')

# Annex H. Model template to report on the reduction of NDPs

## H.1 Introduction

According to CEN/TC 250 N 1493 Position paper on reducing the number of Nationally Determined Parameters (NDPs) in the Structural Eurocodes (see Annex E in N1250), all parameters that must be NDPs (i.e. essential NDPs) are to be identified. All NDPs that are not classified as essential shall be reviewed in an effort to try to reduce their number. This review should be undertaken pragmatically, respecting the position of different CEN Members and seeking to understand why different opinions are held.

## H.2 Essential NDPs

These are:

- partial factors for materials and actions,
- the probability of the design seismic action being exceeded in a structure's design reference period,
- the time of fire exposure,
- design accidental actions,
- classification of structures in Consequences Classes corresponding to different Reliability Classes and levels, taking into account quality management requirements

All essential NDPs shall be retained in the Eurocodes, thereby allowing them to be specified in National Annexes. The only exception to this are cases when an NDP was included in the current Eurocodes with a recommended value of 1.0 and there is consensus that it can be removed. This might arise, for example, where all countries have adopted the recommended value of 1.0 and other related NDPs such as general partial factors for materials or actions provide an adequate basis to treat those matters within the competence of European member states.

## H.3 Other NDPs

Other NDPs relating to the following are discouraged:

- technical issues, such as the choice of one mechanical model versus another, or one coefficient versus another in a resistance formulation;
- limits on geometric or similar parameters (e.g., size of cross section, upper or lower limits on reinforcement ratio or density) which have to do with limits of applicability of mechanical models;
- choice between advanced and simplified methods.

In addition, consideration should be given to eliminating NDPs that concern issues of performance that could be addressed at a project rather than national level. Consideration may also be given to using classes for some families of related NDPs. If such approaches are proposed, examples should be presented at the CEN/TC 250 Coordination Group to promote consistency.

## H.4 Model template to report NPDs

The following tables should be produced to report to CEN/TC 250 on the outcome of the efforts to reduce the number of NDPs.

### Table H.1: List of current NDPs

| No. | Clause in EN XXXX | Corresponding clause in prEN XXXX | Parameter | Recommended value | Category of NDP | Status | Comment |
|---|---|---|---|---|---|---|---|
| | e.g. 2.3(1) | e.g. 4.3(1) | e.g. characteristic values of self-weight | e.g. nominal value | • Essential NDP<br>• Other NDP | Retained<br>Eliminated<br>New | This provides:<br>• justification for the retention of other NDPs;<br>• confirmation as to whether consensus has been reached on NDPs to be removed;<br>• justification for the introduction of new NDPs. |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

### Table H.2: Summary table of NDPs

| | |
|---|---|
| No. of essential NDPs retained | |
| No. of other NDPs retained | |
| No. of NDPs removed | |
| No. of new NDPs (essential) | |
| No. of new NDPs (others) | |

# Annex I. Guidance on the preparation of new symbols

## I1 Basic requirements

(1) Symbols and indices shall be drafted in accordance with CEN/TC250 N1250 and CEN IR 3.

(2) Symbols and indices should be drafted using the keyboard.

(3) Symbols and indices should be drafted in Cambria font.

(4) Symbols should be written in italics and indices should be subscripted and written in upright font.

(5) Symbols shall not be submitted as images.

## I2 Symbols for common quantities

(1) Symbols for some common quantities are suggested below.

a) Actions, capacities, forces, strengths and stresses:

| **Description** | **Suggested symbol** |
|---|---|
| Forces (in general) | $F$ |
| Normal forces | $N$ |
| Shear forces | $V$ |
| Moments | $M$ |
| Strengths | $F$ |
| Resistances | $R, q$ |

b) Stiffnesses and densities:

| **Description** | **Suggested symbol** |
|---|---|
| Modulus of elasticity | $E$ |
| Shear modulus | $G$ |
| Bulk modulus | $K$ |
| Mass density | $\rho$ |
| Weight density | $\gamma$ |

c) Deformations:

| **Description** | **Suggested symbol** |
|---|---|
| Deformation | $u, w, \delta$ |

d) Geometrical data:

| **Description** | **Suggested symbol** |
|---|---|
| Areas/Cross-section | $A$ |
| Section Modulus | $W$ |
| Moment of Inertia | $I$ |
| Height | $h$ |

| | |
|---|---|
| Width | $b$ |
| Depth | $z$ |
| Length/Span | $L$, $l$ |
| Thickness | $t$ |
| Spacing | $s$ |
| Deviations/bows | $a$ |
| Diameter | $d$ |
| Radius | $r$ |
| Angles | $\alpha$, $\delta$, $\varphi$ |

e) Factors and numbers

| **Description** | **Suggested symbol** |
|---|---|
| Factors/Coefficient | $K$, $k$, $\alpha$, $\beta$ |
| Partial safety factor | $\gamma$ |
| Combination factor | $\psi$ |
| Correlation factor | $\xi$ |
| Slenderness ratios | $\lambda$ |
| Numbers | $n$ |

f) Other values

| **Description** | **Suggested symbol** |
|---|---|
| Velocities | $v$ |
| Accelerations | $a$ |
| Frequencies | $f$ |

## I3 Order of indices

(1) Superscripted parts may be named before the indices.

(2) If there is more than one index, indices should be named in the order given below. Indices that are not needed can be omitted.

For actions, capacities, forces, strengths and stresses:

$X_{\text{Type, Direction, Angle, Member, [Additional,] Design/Characteristic}}$

| | |
|---|---|
| Type | Characteristic which defines the property (e.g. compressive, bending, shear) |
| Direction | Direction in which the property is measured (e.g. axial) |
| Angle | Angle at which the property is measured (e.g. parallel/perpendicular to the grain, in x/y-direction) |
| Member | Member to which the property refers (e.g. lamination, web) |
| Additional | Additional information can be added in this place |
| Design/Characteristic | Design or characteristic value |

Example:

| | |
|---|---|
| $R_{\text{ax},\alpha,\text{k}}$ | Characteristic load-carrying capacity at an angle to the grain |
| $F_{\text{v,w,Ed}}$ | Design shear force acting on web |
| $f_{\text{v,ax,90,k}}$ | Characteristic withdrawal strength perpendicular to the grain |

For stiffnesses and densities:

$X_{\text{Type, Angle, Member, [Additional,] Design/Characteristic, Time}}$

| | |
|---|---|
| Type | Characteristic which defines the property (e.g. compressive, shear) |
| Angle | Angle at which the property is measured (e.g. parallel/perpendicular to the grain, in x/y-direction) |
| Member | Member to which the property refers (e.g. lamination) |
| Additional | Additional information can be added in this place |
| Design/Characteristic | Design or characteristic value (e.g. mean, 05) |
| Time | Point in time (e.g. final) |

Example:

| | |
|---|---|
| $E_{0,l,mean}$ | Mean modulus of elasticity parallel to the grain of a lamination |
| $E_{mean,fin}$ | Final mean value of modulus of elasticity |
| $G_{r,mean}$ | Mean rolling shear modulus |

For deformations:

$X$ Calculation, Direction, Type, Action, Combination[, Additional]

| | |
|---|---|
| Calculation | Gross or net value (e.g. net) |
| Direction | Direction of the deformation (e.g. parallel/perpendicular to the grain) |
| Type | Characteristic which defines the property (e.g. creep, final, instantaneous) |
| Action | Action that causes deformation (e.g. permanent action) |
| Combination | Ranking of actions in combination (e.g. 1=leading, 2=accompanying) |
| Additional | Additional information can be added in this place |

Example:

| | |
|---|---|
| $u_{fin,Q,1}$ | Final deformation for the leading variable action $Q_1$ |
| $w_{net,fin}$ | Net final deflection |
| $w_{1kN}$ | Maximum deflection due to a vertical single-load of 1 kN |

For geometrical data:

$X$ Specification, Direction, Type, Member, [Additional,] Extremum

| | |
|---|---|
| Specification | Specialised value that describes the property (e.g. effective, net, reference) |
| Direction | Direction in which the property is measured (e.g. parallel to the x/y-direction, 1, 2) |
| Type | Characteristic which defines the property (e.g. anchorage, contact) |
| Member | Member to which the property refers (e.g. cross laminated timber, flange) |
| Additional | Additional information can be added in this place |
| Extremum | Extremal value of the property (e.g. maximum, minimum, mean) |

Example:

| | |
|---|---|
| $A_{ef,x}$ | Effective cross-section of the layers with grain direction parallel to the x-direction |
| $a_{3,c}$ | Distance between fastener and unloaded end |
| $t_{l,max}$ | Maximum thickness of a lamination |

For factors and numbers:

$X$ Type, Angle, Member, [Additional], Reduction

| | |
|---|---|
| Type | Characteristic which defines the property (e.g. deformation, spacing, shape) |
| Angle | Angle at which the property is measured (e.g. parallel/perpendicular to the grain) |
| Member | Member to which the property refers (e.g. cross laminated timber) |
| Additional | Additional information can be added in this place |
| Reduction | Reduction factor |

Example:

| | |
|---|---|
| $k_{c,90,CL}$ | Factor considering the load configuration and the layup of the cross laminated timber element |
| $k_{s,red}$ | Reduction factor for spacing |
| $\gamma_M$ | Partial factor for material properties, also accounting for model uncertainties and dimensional variations |

For other values:

$X$ Type, Direction, Angle, Member[, Additional]

| | |
|---|---|
| Type | Characteristic which defines the property |
| Direction | Direction in which the property is measured |
| Angle | Angle at which the property is measured |
| Member | Member to which the property refers |
| Additional | Additional information can be added in this place |

Example:

| | |
|---|---|
| $V_{1,peak}$ | Peak velocity response |
| $a_{rms}$ | Root mean square acceleration |
| $f_1$ | Fundamental bending frequency |

# Annex J. CEN/TC 250 ‘Structural Eurocodes’ – Guidance on drafting National Annexes to EN Eurocodes for NSBs

NOTE: This Annex should be read in conjunction with CEN/TC 250 document N 3248, "Clarification note on technical alternatives".

Dated 11 May 2022

CEN BT approved CEN/TC 250 guidance document on drafting National Annexes to EN Eurocodes for NSBs though decision 5/2022 [Ref. 5].

## Introduction

The determination of the levels of safety of buildings and civil engineering works and parts thereof is, and remains, within the competence of CEN Members. The national standard implementing the EN Eurocodes in a country can have a National Annex, which is usually published by the relevant National Standardisation Body (NSB) and contains all national choices to be used for the design of buildings and civil engineering works to be constructed in the relevant country. While the principles underpinning the content of National Annexes have not fundamentally changed in the Eurocodes evolution, there are some areas that deserve clarification.

## Purpose of this paper

The purpose of this paper is to provide guidance to the NSBs on drafting National Annexes. It is based on discussions at meetings of CEN/TC 250 and interest expressed by the NSBs for more clarity.

## Background

Guidance Paper L (GPL) ‘Application and use of Eurocodes’ [Ref. 1] gave guidance on the elaboration, implementation and use of the EN Eurocodes, including content on national provisions for the structural design of works (GPL, 2.1) and National Annexes of the EN Eurocode Parts (GPL, 2.3).

GPL introduced the concept of Nationally Determined Parameters (NDPs), which are represented by values, classes or alternative procedures permitted within the EN Eurocodes where National choice is left open to the relevant country in recognition of the possible differences in geographical or climatic conditions or in ways of life, as well as different levels of protection that can prevail at national, regional or local level.

GPL was written in relation to the Construction Products Directive (CPD), to which it referred and was issued by the Commission. The CPD has been replaced by the Construction Product Regulation (CPR), and it is the Commission’s view that guidance papers are not relevant for a Regulation. However, the Guidance papers remain published documents from the Commission.

Today, a relevant document is the European Commission Recommendation on the implementation and use of Eurocodes for construction works and structural construction products [Ref. 2] (called hereafter Commission Recommendation).

This paper is based on the content of GPL and the Commission Recommendation, which have been reviewed and augmented to help NSBs to draft National Annexes to EN Eurocode parts or CEN Technical Specifications in light of the latest developments in the Eurocodes evolution. When reference is made to EN Eurocode parts, this also applies to relevant CEN Technical Specifications developed in CEN/TC 250.

## 1. Introduction on National Annexes

1.1. Each NSB shall implement the final text of the approved EN Eurocode as a national standard by publication of an equivalent text (i.e. a version translated into another language) or by

endorsement of one of the 3 language versions provided by CEN-CENELEC Management Centre, within the timescale agreed for publication.

1.2 The National Standards Bodies shall assess the need for a National Annex.

NOTE 1: As stated by the CEN Internal Regulations, the National Annex is not a CEN requirement (a NSB can publish an EN Eurocode Part without one). However, the National Annex serves for NSBs to publish the Nationally Determined Parameters, see section 3.

NOTE 2: A National Annex is not necessary in the following cases:

a) if an EN Eurocode Part contains no choice open for Nationally Determined Parameters, or

b) if an EN Eurocode Part is not relevant for a CEN Member (e.g. seismic design for some countries), or

c) if a CEN Member has adopted the default values provided in an EN Eurocode Part as Nationally Determined Parameters applicable in its territory – information, for instance in the foreword of the EN Eurocode part concerned, indicating that the default values are applicable can be sufficient in such a case.

## 2. Content of National Annexes

2.1. A National Annex shall not alter or contradict the content of the EN Eurocode text in any way.

2.2. The National Annex may contain, directly or by reference, the national choice on those aspects in the Eurocodes which are explicitly left open to national determination, i.e. the Nationally Determined Parameters (NDPs), to be used for the design of buildings and civil engineering works to be constructed in the country concerned. In broad terms, NDPs are:

- values and/or classes where alternatives are given in the EN Eurocode;
- values to be used where a symbol only is given in the EN Eurocode;
- country specific data (geographical, geological, climatic, etc.), e.g. snow map, seismic hazard map;
- the procedure to be used where choice is given in the EN Eurocode to adopt alternative procedures.

2.3 The National Annex may also contain the national choice on the application of informative annexes, see 3.8 for the choices available to NSBs.

2.4 The National Annex may contain, directly or by reference, non-contradictory complementary information for ease of implementation, provided it does not alter or contradict any provisions of the Eurocodes.

## 3. National choices

References to national choices contained in the Eurocodes

3.1. A list of sub-clauses containing the Nationally Determined Parameters is provided in clause '0.5 National annex for EN 19xxx-x-x' of each EN Eurocode part for ease of use by NSBs. This clause also provides the list of informative annexes for which national choice may be expressed.

3.2. All references to national choices are contained in NOTES to the relevant EN Eurocode Part. Examples of how NDPs are referenced are presented below.

*Example of a case where a default value is given in the EN Eurocode Part:*

(1) The partial factor $\gamma_{F,fat}$ shall be used for fatigue loads.
NOTE The value of $\gamma_{F,fat}$ is 1.0 unless the National Annex gives a different value.

*Example of a case where no default value is given in the EN Eurocode Part:*

(1) Testing of grouted anchors shall comply with EN ISO 22477-5 Test Method 1 or Test Method 3.
NOTE: The choice of Method can be given in the National Annex.

*Example of default values given in a table contained in the EN Eurocode Part:*

NOTE The values of $\gamma_F$ are given in Table X.X (NDP) unless the National Annex gives different values.

## Expressing the national choice

3.3. CEN Members are encouraged to use the default choice for the Nationally Determined Parameters where provided by the EN Eurocode Parts. They should diverge from the default choice only where geographical, geological or climatic conditions or specific levels of protection make that necessary and if they consider it necessary in order to ensure that building and civil engineering works are designed and executed in a way that does not endanger the safety of persons, domestic animals or property.

3.4. CEN Members may choose to not express a national choice on a particular Nationally Determined Parameter.

NOTE: As stated in clause '0.5 National annex for EN 19xxx-x-x' of each EN Eurocode:

1. When no national choice is given, the default choice given in the standard is to be used;

2. When no national choice is made and no default is given in the standard, the choice can be specified by the relevant authority or, where not specified, agreed for a specific project by appropriate parties.

## Additional clarification on tables containing Nationally Determined Parameters

3.5. When a table is introduced in a EN Eurocode Part with the expression Table x.y (NDP) <Title>, then the NDP is the entire table, which may be changed in full or in part at national level.

3.6. The default structure of tables containing Nationally Determined Parameters, which is provided in the relevant EN Eurocode Part, should be used as far as possible to ensure consistency in approach across the CEN Members.

3.7. In some special cases, only the values within a table are NDPs. In which case, the complete table should be reproduced in the National Annex with the relevant national values inserted to aid ease of use by designers.

### Additional clarification on Informative annexes

3.8. In relation to the national choice on the application of an informative annex, a Country may:

(i) permit its use,

(ii) prohibit its use in full or in part,

(iii) stay silent on whether to use it or not.

NOTE 1 In case (i), National Annexes can make an informative annex a national requirement.

NOTE 2 if the National Annex contains no information on the application of an informative annex, it can be used.

3.9. In case (ii), the National Annex may replace the informative annex either in full (by introducing a different annex) or in part (with modified / alternative provisions), directly or by reference. In such a case, the replacement annex or modified / alternative provisions shall not contradict the normative text contained in the relevant EN Eurocode Part. The replacement annex should have a unique identification, e.g. “Annex NA.C <Title>”.

3.10. In case (ii), if a replacement annex or modified / alternative provisions are introduced, these may contain requirements, recommendations and permissions (i.e. use of ‘shall’, ‘should’ and ‘may’). In all cases, the text should not contain text book material.

## 4. Publication of National Annexes

4.1. The National Annex should be made available separately from the body of the relevant EN Eurocode part so that the National Annex can be obtained without having to purchase the full Eurocode text. The Eurocode and the National Annex can also be made available as a package at the member's discretion. Note: Reference is made to CEN-CENELEC Guide 28 Guidelines for the public access of Eurocodes and their National Annexes and Harmonized European Standards under the Construction Products Regulation [Ref. 3].

4.2. Additionally, NSBs may publish integrated and consolidated document(s) (i.e. EN Eurocode part and relevant National Annex provisions) provided that, in line with BT Decision 2/2012 [Ref. 4], such documents are clearly identified as not being a EN Eurocode part.

## 5. References

[1] Guidance Paper L (concerning the Construction Products Directive - 89/106/EEC) ‘Application and use of Eurocodes’ (Version 27 November 2003).

[2] Commission Recommendation of 11 December 2003 on the implementation and use of Eurocodes for construction works and structural construction products (notified under document number C(2003) 4639), Official Journal of the European Union.

[3] CEN-CENELEC Guide 28 Guidelines for the public access of Eurocodes and their National Annexes and Harmonized European Standards under the Construction Products Regulation

[4] CEN BT decision 2/2012

Subject: Implementation of EN 206-1, EN 13670 and EN 13791 (concrete) at national level

BT,

- considering that EN 206-1, EN 13670 and EN 13791 allow for the addition of some specific national provision;
- noting the AFNOR request for derogation from the rules on national implementation for these ENs (Annex 1 to BT N 8867);
- noting the results of the CCMC survey as presented in Annex 2 to BT N 8867;
- confirms the CEN-CENELEC Internal Regulations Part 2, 11.2.6.2 stating that "An EN shall be implemented identical in technical content and presentation …";
- notes that (an) additional document(s) can be published to make the national provisions in question available in a user-friendly way, e.g. by publishing a separate document at national level including the national provisions, with or without the original text of the EN.

This Resolution is applicable as from: 2012-03-21

[5] CEN BT decision 5/2022

Subject: CEN/TC 250 ‘Structural Eurocodes’ - Guidance on drafting National Annexes for NSBs

BT,

− noting

- the outcome of the discussion at the CEN/BT TCMG meeting of 2022-03-10, including the comments provided to improve the CEN/TC 250 'Structural Eurocodes' guidance
  document on drafting national annexes for NSBs and the potential conflict between its Clause 4 and CEN-CENELEC Guide 10;
- the revised CEN/TC 250 guidance document (see N 12997 Annex 1);

- the outcome of JCAG consultation by correspondence concluding that there is no conflict between Clause 4 of the CEN/TC 250 guidance document on drafting national annexes for NSBs and CEN-CENELEC Guide 10 since the latter one is related to CEN and CENELEC deliverables only and that national annexes are outside its scope;

- the exceptional need for guidance for this specific sector;

− approves the CEN/TC 250 guidance document on drafting of national annexes for NSBs as presented in Annex 1 and encourages CEN/TC 250 to consider the AFNOR comments for inclusion in future discussions and documents.

This decision is applicable as from: 2022-05-05

# Annex K. Titles of EN Eurocode Parts

NOTE: This Annex gives the English titles of the various EN Eurocode parts. The equivalent French and German titles are given in documents CEN/TC 250 N 3443 and N 3444 respectively. Translations are subject to minor editorial changes.

## Eurocode

EN 1990 Eurocode – Basis of structural and geotechnical design

## Eurocode 1

EN 1991-1 Eurocode 1 – Actions on structures – Part 1-1: Specific weight of materials, self-weight of construction works and imposed loads on buildings
EN 1991-2 Eurocode 1 – Actions on structures – Part 1-2: Actions on structures exposed to fire
EN 1991-3 Eurocode 1 – Actions on structures – Part 1-3: Snow loads
EN 1991-4 Eurocode 1 – Actions on structures – Part 1-4: Wind actions
EN 1991-5 Eurocode 1 – Actions on structures – Part 1-5: Thermal actions
EN 1991-6 Eurocode 1 – Actions on structures – Part 1-6: Actions during execution
EN 1991-7 Eurocode 1 – Actions on structures – Part 1-7: Accidental actions
EN 1991-8 Eurocode 1 – Actions on structures – Part 1-8: Actions from waves and currents on coastal structures
EN 1991-9 Eurocode 1 – Actions on structures – Part 1-9: Atmospheric icing
EN 1991-2 Eurocode 1 – Actions on structures – Part 2: Traffic loads on bridges and other civil engineering works
EN 1991-3 Eurocode 1 – Actions on structures – Part 3: Actions induced by cranes and machinery
EN 1991-4 Eurocode 1 – Actions on structures – Part 4: Silos and tanks

## Eurocode 2

EN 1992-1-1 Eurocode 2 – Design of concrete structures – Part 1-1: General rules and rules for buildings, bridges and civil engineering structures
EN 1992-1-2 Eurocode 2 – Design of concrete structures – Part 1-2: Structural fire design
(Parts 2 and 3 not used)
EN 1992-4 Eurocode 2 – Design of concrete structures – Part 4: Design of fastenings for use in concrete

## Eurocode 3

EN 1993-1-1 Eurocode 3 – Design of steel structures – Part 1-1: General rules and rules for buildings
EN 1993-1-2 Eurocode 3 – Design of steel structures – Part 1-2: Structural fire design
EN 1993-1-3 Eurocode 3 – Design of steel structures – Part 1-3: Cold-formed members and sheeting
EN 1993-1-4 Eurocode 3 – Design of steel structures – Part 1-4: Stainless steels structures
EN 1993-1-5 Eurocode 3 – Design of steel structures – Part 1-5: Plated structural elements
EN 1993-1-6 Eurocode 3 – Design of steel structures – Part 1-6: Strength and stability of shell structures
EN 1993-1-7 Eurocode 3 – Design of steel structures – Part 1-7: Plate assemblies with elements under transverse loads
EN 1993-1-8 Eurocode 3 – Design of steel structures – Part 1-8: Joints
EN 1993-1-9 Eurocode 3 – Design of steel structures – Part 1-9: Fatigue
EN 1993-1-10 Eurocode 3 – Design of steel structures – Part 1-10: Material toughness and through thickness properties
EN 1993-1-11 Eurocode 3 – Design of steel structures – Part 1-11: Tension components
EN 1993-1-12 Eurocode 3 – Design of steel structures – Part 1-12: Additional rules for steel grades up to S960
EN 1993-1-13 Eurocode 3 – Design of steel structures – Part 1-13: Rules for beams with large web openings
EN 1993-1-14 Eurocode 3 – Design of steel structures – Part 1-14: Design assisted by finite element analysis
EN 1993-2 Eurocode 3 – Design of steel structures – Part 2: Bridges
EN 1993-3 Eurocode 3 – Design of steel structures – Part 3: Towers, masts and chimneys
EN 1993-4-1 Eurocode 3 – Design of steel structures – Part 4-1: Silos
EN 1993-4-2 Eurocode 3 – Design of steel structures – Part 4-2: Tanks
EN 1993-5 Eurocode 3 – Design of steel structures – Part 5: Piling
EN 1993-6 Eurocode 3 – Design of steel structures – Part 6: Crane supporting structures
EN 1993-7 Eurocode 3 – Design of steel structures – Part 7: Sandwich panels

## Eurocode 4

EN 1994-1-1 Eurocode 4 - Design of composite steel and concrete structures – Part 1-1: General rules and rules for buildings
EN 1994-1-2 Eurocode 4 - Design of composite steel and concrete structures – Part 1-2: Structural fire design
EN 1994-2 Eurocode 4 - Design of composite steel and concrete structures – Part 2: Bridges

## Eurocode 5

EN 1995-1-1 Eurocode 5 - Design of timber structures – Part 1-1: General rules and rules for buildings
EN 1995-1-2 Eurocode 5 - Design of timber structures – Part 1-2: Structural fire design
EN 1995-2 Eurocode 5 - Design of timber structures – Part 2: Bridges
EN 1995-3 Eurocode 5 - Design of timber structures – Part 3: Execution

## Eurocode 6

EN 1996-1-1 Eurocode 6 - Design of masonry structures – Part 1-1: General rules for reinforced and unreinforced masonry structures
EN 1996-1-2 Eurocode 6 - Design of masonry structures – Part 1-2: Structural fire design
EN 1996-2 Eurocode 6 - Design of masonry structures – Part 2: Design considerations, selection of materials and execution
EN 1996-3 Eurocode 6 - Design of masonry structures – Part 3: Simplified calculation methods for unreinforced masonry structures

## Eurocode 7

EN 1997-1 Eurocode 7 – Geotechnical design – Part 1: General rules
EN 1997-2 Eurocode 7 – Geotechnical design – Part 1: Ground properties
EN 1997-3 Eurocode 7 – Geotechnical design – Part 1: Geotechnical structures

## Eurocode 8

EN 1998-1-1 Eurocode 8 – Design of structures for earthquake resistance – Part 1-1: General rules and seismic action
EN 1998-1-2 Eurocode 8 – Design of structures for earthquake resistance – Part 1-2: Buildings
EN 1998-2 Eurocode 8 – Design of structures for earthquake resistance – Part 2: Bridges
EN 1998-3 Eurocode 8 – Design of structures for earthquake resistance – Part 3: Assessment and retrofitting of buildings and bridges
EN 1998-4 Eurocode 8 – Design of structures for earthquake resistance – Part 4: Silos, tanks, pipelines, towers, masts and chimneys
EN 1998-5 Eurocode 8 – Design of structures for earthquake resistance – Part 5: Geotechnical aspects, foundations, retaining and underground structures

## Eurocode 9

EN 1999-1-1 Eurocode 9 – Design of aluminium structures – Part 1-1: General rules
EN 1999-1-2 Eurocode 9 – Design of aluminium structures – Part 1-2: Structural fire design
EN 1999-1-3 Eurocode 9 – Design of aluminium structures – Part 1-3: Structures susceptible to fatigue
EN 1999-1-4 Eurocode 9 – Design of aluminium structures – Part 1-4: Cold-formed structural sheeting
EN 1999-1-5 Eurocode 9 – Design of aluminium structures – Part 1-5: Shell structures

## Eurocode 10

EN 19100-1 Eurocode 10 – Design of glass structures – Part 1: General rules
EN 19100-2 Eurocode 10 – Design of glass structures – Part 2: Out-of-plane loaded glass components
EN 19100-3 Eurocode 10 – Design of glass structures – Part 3: In-plane loaded glass components and their mechanical joints

# Revision history

## Record of changes to N 1250 in version 12 dated 2023/03/27

1. Clause 8.6.1. Added rule for entering subscripts into documents
2. Figure A.1. Changed name of SC7 Secretary
3. Annex D4. Changed the text for 0.5 National annex for CEN/TS xxxx to match that used for ENs
4. Clause 7.7(9). Added rule regarding reference provided in a [SOURCE] comment in Clause 3
5. Annex B. Added BT 8/2021 and BT 5/2022
6. Annex J. Added guidance on drafting National Annexes to EN Eurocodes
7. Clauses 6.6.2 and 7.8.3. Changed to reflect contents of new Annex J
8. Clause 8.1(2). Changed to reflect latest CCMC template
9. Clause 7.5.(6). Added guidance where to list references given in Clause 1
10. Clause 8.9.2(6). Added paragraph regarding how to reference EADs
11. Clause 6.2.2.1(2). Clarification about use of NCCI
12. Annex K. Added list of tiles of the EN Eurocode Parts (updated following 2nd TC250 meeting in 2022)
13. Clause 8.1. Now refers to IR 3:2022. All references to IR 3: 2017 elsewhere in the document replaced by undated reference to IR 3 (undated)
14. Clause 4(7). Added reference to draft publication schedule
15. Annex B. Added BT decisions 8/2021 and 5/2022
16. Clause 3.2(1). Minor changes to bullet 2
17. Clause 2(7). Deleted reference to ECISS
18. Clause 8.7.1. Added further clarification about numbering of equations
19. Annex D2. Changed footnote 1 to refer to TC250 document N3770.
20. Annex J. Added note referencing TC250 document N3248
21. Clause 7.10(6). Added rule regarding avoidance of duplicate references
22. Clause 7.7(9). Minor rewording (as agreed with CCMC)
23. Clause 7.5(6). Deleted (as agreed with CCMC)
24. Clause 8.9.2(6). Minor rewording (as agreed with CCMC)
25. Clause 7.10(7). Added rule regarding sequential numbering of references
26. Annex D1. Added notes regarding alternative titles used in EN 1991-2 and EN 1993-14
27. Clause 7.5(6). Added recommendation regarding length of Scope
28. Clause 8.7.1(9) Added permission to omit formula number when first referencing the formula
29. Various minor grammatical corrections throughout the document

## Record of changes to N 1250 in version 11 dated 2021/10/25

1. Clause 6.4. Simplification of rules governing project-specific provisions
2. Clause 6.4(2). An additional example given
3. Clause 6.4(4). Examples added to text
4. Clause 7.3. Changed arrangement of NDP clause numbers to row-wise
5. Clause 7.5. Reference made to guidance given by BOSS
6. Clause 7.8.2. Clarified that normative annexes shall only be introduced using the verb 'shall'
7. Clause 7.9(2) Corrected typo (changed 'permissions' to 'possibilities' in example wording)
8. Clause 7.9. Shortened paragraphs used in the Bibliography to introduce references
9. Clause 8.7.1. Add guidance on presentation of two-part equations
10. Clause 8.8.4. Recommended including brief description of information provided in cross-references
11. Clause 8.9.1. Added guidance regarding references to unpublished standards
12. Clause 8.11(4) added to address file naming of figures that use two-part numbering
13. Annex D3. Changes to the European Foreword required by CCMC
14. Annex D4. Changed arrangement of NDP clause numbers to row-wise
15. p36, corrected link to CEN IR2
16. p46, changed 'this standard' to 'this document' (three times)

## Record of changes made to N 1250 in version 10 dated 2020/09/21

1. Clause 8.3.1(2) Minor improvements in wording
2. Clause 8.3.5 Clarification that the use of '(P)' to denote Principles is to be discontinued in the second generation of Eurocodes
3. Annex F Use of verbal forms, which was no longer used, has been removed. Subsequent Annexes have been renumbered
4. Clause 7.5 amended following review by CCMC
5. Clause 7.9 added to deal with references in 'should' and 'may' clauses
6. Clause 8.4 amended to include rules for references to structure-specific Eurocode parts
7. Clause 7.3 requirements added for lists of national choices in the Introduction

## Record of changes made to N 1250 in version 9.1 dated 2020.03.17

1. Annex D – correction to wording regarding national choice

## Record of changes made to N 1250 in version 9 dated 2020.03.05

1. Revision history moved to end of document
2. Clause 6.1.2 - Simplified example of cases where a default value is given
3. Clause 6.4 – Improved wording of project specific criteria
4. Clause 6.5 – Added clause on Project specifications
5. Clauses 7.2 Europeans foreword and 7.3 Introduction - added
6. Clause 7.4 Scope – clarified that scope should not include Annexes
7. Clause 7.5 Normative references – major revision
8. Clause 7.6 Terms etc – Added new paras (6) and (7)
9. Clause 7.6.2 Normative annexes – added requirement for two fixed clauses
10. Clause 7.6.3 Informative annexes – statement on status added
11. Clause 8.6.3 Ordering of subscripts – added reference to Annex J
12. Clause 8.7.1 Introducing formulae – more precise rules added
13. Clause 8.7.4 Presentation of logarithmic values – added
14. Clause 8.7.5 Drafting formulae – added
15. Clause 8.8 References to Eurocodes and Eurocode parts – added
16. Clause 8.11 Figures – reference to IR3 added
17. Figure A.1 – updated with the latest CEN/TC 250 Organization structure
18. Annex B5 Decision BT 20/2019 – added
19. Annex D – updated to reflect changes to main clauses
20. Annex D5 - heading 'geometrical data' changed to 'geometrical properties'
21. Annex F Use of verbal forms (deleted, replaced by reference to latest IR3)
22. Annex I Model template to report on the reduction of NDPs – added
23. Annex J Guidance on the preparation of new symbols – added

## Record of changes made to N 1250 in version 8 dated 2019.02.27

1. In 4(5), additional sentence added at the end of the paragraph to introduce new clause 10 covering specific information on enhancing ease of use.

2. The heading of 6.1.2 has been updated to clarify that the rules on how to refer to NDPs apply to CEN Technical Specifications as well as EN Eurocode Parts.

3. 6.2.2 has been split into two parts:

    a. 6.2.2.1 covering general rules on National Annexes. 6.2.2.1(1) clarifies the purpose of a National Annex for CEN Technical Specifications as well as EN Eurocode Parts.

b. 6.2.2.2 covering “Decision on the application of Informative Annexes”.

4. In 6.3(3), the agreed text to introduce NCCI has been included. This is also provided in (D4) “National annex for EN XXXX-X-X”.

5. 6.4 has been mostly redrafted for clarity. 6.4(1) provides clarified text replacing old 6.4(1), and a new note has been introduced containing examples on how to present project-specific criteria. 6.4(2) is a new clause to clarify that project-specific criteria shall not be used in requirement clauses. 6.4(4), 6.4(5) and related note have been introduced to clarify that a same clause cannot cover both a project-specific criterion and NDP.

6. The heading of 7 has been updated to clarify that the rules on style of clauses apply to CEN Technical Specifications as well as EN Eurocode Parts.

7. In 7.4(3), the sentence “A symbol shall have only one meaning in each EN Eurocode part” has been moved to 8.6.1 and tweaked. 7.4(3) and old 7.4(5) (“symbols need not be numbered”) have been consolidated.

8. 7.4(5) has been added to address a request from CG and confirm that the section covering Terms, definitions and symbols may include figures.

9. Old 7.7 covering CEN/TS has been converted into a new, separate clause 9 because it does not belong to 7 covering style of EN Eurocode and CEN/TS clauses.

10. The heading of 8 has been updated to clarify that the rules on style of provisions apply to CEN Technical Specifications as well as EN Eurocode Parts.

11. Old 8.1(2) and 8.1(3) on CEN IR3 rules and approach to drafting have been moved to new 8.1(1) and 8.1(2) because they were provided in the wrong place.

12. Old 8.1 onwards have been renumbered having introduced new 8.1 General.

13. New 8.3.4 has been introduced to cover the use of negative verbal forms.

14. The header of 8.5 has been changed from “Tables in Notes” to “Tables” as this clause covers tables in general.

    a. New 8.5.1 General has been introduced to clarify that vertical text in tables should not be used in order to support XML conversion.

    b. New header 8.5.2 Tables in Notes has been introduced.

15. 8.6 Symbols has been split into 8.6.1 “General rules”, new 8.6.2 “Referencing or repeating symbols” and 8.6.3 “Presentation of indices”.

    a. In 8.6(1), text from 7.4(3) “A symbol shall have only one meaning in each EN Eurocode part” has been moved and made as a recommendation in line with IR3. 8.6.1(2) has been introduced to help overcome the issue of having the same symbol basic used in a document to represent different quantities.

    b. New 8.6.2 has been introduced to address queries on the approach to be taken when choosing between repeating symbols or referencing them from superior documents (EN 1990 and principal Eurocode parts typically -1-1 within the same Eurocode).

    c. New 8.6.3 has been introduced to recommend avoiding the use of commas to separate indices unless needed for clarity.

16. 8.7.1(3) covering how to prepare formulae has been moved here from old 8.7.2 “Symbols after formulae”.

17. New 8.7.2 Presentation of minimum or maximum values has been introduced to address queries received on how to consistently present them.

18. Old 8.7.3(3) moved to new 8.7.1(3).

19. New clause 9 introduced covering the use of CEN Technical Specifications (formerly 7.7).

20. New clause 10 introduced covering rules to be followed to enhance ease of use of the Eurocodes. New content: 10.1 General; 10.2 CEN/TC 250 position paper; 10.3 Six tests for good drafting of Eurocode clauses (covered in CEN/TC 250 N 2128 CBN 2018/6); 10.4 Technical Reviewer.

21. Figure A.1 has been updated with the latest CEN/TC 250 Organization structure.

22. (D1) and (D2) have been updated to move 1.1 “Scope of EN XXXX” to the Introduction as more relevant.

23. (D3) contains the agreed text on the common European Foreword to be used for EN Eurocode Parts and CEN/TS at enquiry stage and publication stage.

24. In (D4):

    a. The new clause covering “Introduction to the Eurocodes” has been introduced.

    b. The new clause “Introduction to EN XXXX” has been introduced.

    c. The clause “National standards implementing the Eurocodes” has been removed as containing some duplications from “National annex for EN XXXX-X-X” and text not relevant to designers.

    d. Text has been provided to cover “National annex for EN XXXX-X-X” for both Eurocode parts and CEN/TS.

## Record of changes made to N 1250 in version (7a) dated 2018.08.01

1. Requirement to present terms and definitions in alphabetical order has been removed, see 7.4(2). Alphabetical order would be lost when translated into French and German.

2. Typos in 8.5.2(3) corrected (the term “formulae” had to be used rather than “math”).

3. In 8.6.2(4)b the sentence “although reference to dated standards should be avoided” has been removed as reference to dated standards may be needed when making reference to specific clauses.

4. Figure A.1 has been updated with the latest CEN/TC 250 Organization structure.

5. The text on Information annexes presented in Annex D4 and Annex D6 has been updated to align with CBN N 1948.

6. Guidance on the interpretation of verb forms provided in 8.2.3 and Annex D4 has been confirmed in CBN N 1949.

## Record of changes made to N 1250 in version 7 dated 2018.03.08

1. 6 restructured into four sub-clauses to cover NDPs (6.1), National Annexes (6.2), NCCI (6.3) and project-specific criteria (6.4). 6.1 has been restructured to include old 6.1 and 6.2.4; 6.3 corresponds to old 6.2.5 Additional Information; 6.4 is a new clause.

2. 7 ““Style of the EN Eurocodes” has been split into two sections, 7 “Style of EN Eurocode clauses” and 8 “Style of EN Eurocode provisions” to clarify (i) the standard text to be provided in the initial clauses of the EN Eurocodes and the style of Annexes, particularly Informative Annexes, and (ii) the style of provisions.

3. The new 7 “Style of EN Eurocode clauses” covers:

   a. European Foreword, Introduction and Common sequence of clauses (7.1): new text provided on European Foreword and Introduction; clarification of the use of the words ‘section’ and ‘clause’ in the EN Eurocodes;

   b. Clause 1 Scope (7.2): new clause which clarifies the text to be provided in the Scope of EN Eurocodes;

   c. Clause 2 Normative references (7.3): new clause which clarifies the introductory text that should be used at the start of this clause;

   d. Clause 3 Terms definitions and symbols (7.4): this includes old 7.7.2 and 7.7.3, clarifies how terms and definitions should be ordered, and the use of SI units;

   e. Clause 4 Basis of Design (7.5): new clause introducing the framework developed to enhance consistency of clauses 4 across EN Eurocode parts;

   f. Annexes (7.6): this includes old 7.8.1 and 7.8.2, provides guidance on sequencing Annexes (7.6.1), clarifies how annexes should be introduced in the main text (7.6.2), and clarifies how reference to Informative Annexes should be made (7.6.3); .

   g. Use of Technical Specifications to support EN Eurocodes (7.7): this corresponds to old 7.9.

4. The new 8 “Style of EN Eurocode provisions” covers:

   a. Neutrality (8.1): this corresponds to old 7.1;

   b. Verbal forms to be used for the expression of provisions in EN Eurocodes (8.2). This is restructured into four clauses. 8.2.1 corresponds to old 7.2; 8.2.2 corresponds to old 7.3; 8.2.3 includes amended wording of the definitions of ‘should’, ‘may’ and ‘can’, following consensus from the CEN/TC 250 informal group set up at the CEN/TC 250 meeting in Berlin 16-17 November 2017; 8.2.4 clarifies the use of “P” to introduce statements of principle and provides an alternative approach to ensure that the correct verbal forms are used by means of abbreviations;

   c. Use of two-part description for clauses, tables and figures (8.3): this corresponds to old 7.6;

   d. Tables in Notes (8.4): new clause providing guidance on use of tables in Notes;

   e. Formulae (8.5): new clause which clarifies the wording to be used to introduce formulae in the main text (8.5.1) and symbols after formulae (8.5.2);

   f. References to other standards (8.6). This is restructured into three clauses. General (8.6.1) contains text taken from old 7.5 on how to refer to other standards and non-normative documents; Product standards (8.6.2) corresponds to old 7.5; Execution standards (8.6.3) corresponds to old 7.10;

5. Use of conditional expressions (8.7): new clause providing guidance on use of conditional expressions;

6. Figures (8.8): new clause clarifying the rules to be followed for figures.

7. D3 Model European Foreword [to be finalised]

8. D4 Model Introduction

9. D5 Update and addition of common contents for clause 4 Basis of Design.

10. D6 Content at the start of an Informative Annex

## Record of changes made to N 1250 in version 6a dated 2017.06.07

1. Reintroduced clause in 5.3 (3) from N 1250 version 5 with pre-existing clause renumbered and split into 5.3 (4) and 5.3 (5).

## Record of changes made to N 1250 in version 6 dated 2017.06.01

1. Reintroduced clause 6.2.3 'Decision on the application of informative annexes' from N 1250 version 4 with pre-existing clauses renumbered.

2. Added an additional paragraph 7.5 (2) 'Reference to other standards' with pre-existing clauses re-numbered.

3. Updated CEN/TC 250 Organization Structure in annex A.

4. Added CEN BT decisions 53/2016 and 27/2017 to annex B.

5. Updated annex F 'Use of verb forms' following the publication of CEN-CENELEC Internal Regulations Part 3:2017.

6. Examples of background documents are provided in annex H.

7. Minor changes to 7.4 (1) 'Meaning of verbal forms' to address potential ambiguities with alignment with CEN-CENELEC Internal Regulations Part 3.