

The Second Generation of Eurocode 4

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Abstract

Work on the second generation of Eurocode 4 is nearing completion. Following the systematic review in 2014, the development of this standard has been undertaken by several project teams under the direction of the European Committee for Standardization subcommittee CEN/TC 250/SC 4, which is currently chaired by the present author. After a brief overview of the work programme that led to the second generation of Eurocode 4, this paper presents a selection of the changes that will be included.

Keywords: Include a list of not more than 10 keywords, for example: post-tensioning; anchors; slabs; walls; high-rise buildings.

1 Introduction

Eurocode 4 (EN 1994) is the European design standard for composite steel and concrete structures. The first version of Eurocode 4 was published by the Commission of European Communities (CEC) in 1985 [1] before the European Committee for Standardization (CEN) was given the responsibility to prepare and publish the Eurocodes 4-years later. Under the direction of Technical Committee CEN/TC 250, the Eurocodes were initially published by CEN in 1992 as European pre-standards (ENV), before they were converted and published as European Standards (ENs) in 2007. Subcommittee 4 (CEN/TC 250/SC 4) was responsible for preparing the ENV and EN versions of Eurocode 4, which was published in three parts, as follows:

- (i) EN 1994-1-1, Part 1-1: General rules and rules for buildings [2].
- (ii) EN 1994-1-2, Part 1-2: General rules – Structural fire design [3].
- (iii) EN 1994-2, Part 2: General rules and rules for bridges [4]

A more comprehensive review of the development of Eurocode 4 from 1970 to 2010 is presented by Johnson [5]. In 2010 the Eurocodes replaced the former national standards within the 34 countries that are members of CEN. More recently, they have been adopted by Singapore [6], and it is anticipated that other countries may soon be implementing them, including Hong Kong, Macau, and Malaysia.

In response to the publication of Mandate M/515 by the European Commission [7] in 2012, an ambitious and detailed work programme was prepared by CEN/TC 250 [8], where specific tasks were undertaken by existing subcommittees, working groups or horizontal groups. The current structure of CEN/TC 250 is presented in Figure 1.

The revision can be broadly divided into two activities:

- General revisions and maintenance of the Eurocodes following the receipt of comments from the industry through a “systematic review” undertaken by national standards bodies (NSBs).
- Technical enhancements of the Eurocodes within the scope of Mandate M/515.