

Introduction

This guide

This guide contains extracts from some of the principal parts of each of the Eurocodes. It is intended to be a suitable teaching tool for lecturers of students of structural design, and to be suitable as guidance material for undergraduate design projects. The extracts chosen are as concise as possible, focussing on the essential principles in the Eurocodes. Commentary is kept to a minimum and only made on parts of the text that require explanation. The commentary in each chapter is shown as boxed text with a grey background, in order to distinguish it from the Eurocode extracts. This guide does not deal with fire design.

Each chapter in this guide corresponds to a particular Eurocode, and has been numbered in accordance with that Eurocode e.g. chapter 1 contains extracts from Eurocode 1: Actions on structures. For consistency with the Eurocodes, EN 1990: Eurocode — Basis of structural design, has been labelled as "Eurocode" (not "Eurocode 0"). In order to facilitate future amendments to this guide, the page numbers in each chapter reflect the chapter that they belong to e.g. the page numbers in chapter 0 are preceded by "0-", whilst the page numbers in chapter 6 are preceded by "6-".

The guide is written for undergraduate students at UK universities and for English-speaking universities worldwide. It is a "stand alone" publication. However, it is expected that the reader has access to the full published versions of the Eurocodes, either in hard copy in the university library, or electronically through, for example, the university's membership of BSI, that provides access to all published British Standards.

Symbols and definitions are covered in each chapter of the guide in the same way they are dealt with in the individual chapter of the Eurocodes. This is because it is recognized that there are differences between each chapter. However, the following note is important:

IMPORTANT NOTE: The distinction between Principles and Application Rules described in Clause 1.4 of the Eurocode for Basis of Design (Chapter 0) applies to all parts of the suite of Eurocodes.

Before publication as a European Standard (EN), each Eurocode is issued as a draft document, a prEN, and is submitted to formal vote by members of CEN.

In the guide the extracts have been taken from the latest version of the Eurocode at the time of writing, with the exception of Chapter 9, which is based on prEN 1999-1-1. Whilst it is unlikely that the principles contained in a prEN will change before being ratified and published as an EN, this guide will be updated where necessary.

The parts of the Eurocodes each have a corresponding National Annex for each Member State, which provides the Nationally Determined Parameters and various allowable choices, such as which Informative Annexes may be used in that Member State. In the case of the United Kingdom, work on a number of the National Annexes was still underway at the time that the updating of this guide was completed. It is important therefore to recognize that the information contained in the guide should not be used for design without checking the final published versions on the relevant National Annex.

National Annex content that is included in this guide is inserted at the corresponding points of the Eurocode to which the National Annex text refers. All National Annex content is labelled "NA.x".

During the co-existence period of the Eurocodes and the national design standards, the BSI education guide PP 7312:2002, Structural design – Extracts from British Standards for students of structural design, will continue to be available. When the respective national design standards are withdrawn and replaced with the Eurocodes, PP 7312:2002 will be withdrawn.

Complete list of parts of the Eurocodes

The following is a complete list of all parts of the Eurocodes. The parts included in this guide are indicated in **bold**.

EN 1990 – Eurocode : Basis of structural design

EN1991 – Eurocode 1: Actions on structures

EN 1991-1-1 Densities, self-weight and imposed loads

EN1991-1-2: Actions on structures exposed to fire

EN1991-1-3: Snow loads

EN1991-1-4: Wind loads

EN1991-1-5: Thermal actions

EN1991-1-6: Actions during execution

EN1991-1-7: Accidental actions due to impact and explosions

EN1991-2: Traffic loads on bridges

EN1991-3: Actions induced by cranes and machinery

EN1991-4: Actions in silos and tanks

EN 1992 – Eurocode 2: Design of concrete structures

EN1992-1-1: Common rules for buildings and civil engineering structures

EN1992-1-2: Structural fire design

EN1992-2-2: Bridges

EN1992-2-3: Liquid retaining and containment structures

EN 1993 – Eurocode 3: Design of steel structures

EN1993-1-1: General rules

EN1993-1-2: Structural fire design

EN1993-1-3: Cold formed thin gauge members and sheeting

EN1993-1-4: Structures in stainless steel

EN1993-1-5: Strength and stability of planar plated structures without transverse loading

EN1993-1-6: Strength and stability of shell structures

EN1993-1-7: Strength of planar plated structures loaded transversally

EN1993-1-8: Design of joints

EN1993-1-9: Fatigue strength

EN1993-1-10: Fracture toughness assessment

EN1993-1-11: Use of high strength cables

EN1993-2: Bridges

EN1993-3: Buildings

EN1993-4-1: Silos, tanks and pipelines – silos

EN1993-4-2: Silos, tanks and pipelines – tanks

EN1993-4-3: Silos, tanks and pipelines – pipelines

EN1993-5: Piling

EN1993-6: Crane supporting structures

EN1993-7-1: Towers, masts and chimneys – towers and masts

EN1993-7-2: Towers, masts and chimneys – chimneys

EN 1994 – Eurocode 4: Design of composite steel and concrete structures

EN1994-1-1: General – common rules

EN1994-1-2: Structural fire design

EN1994-2: Bridges

EN 1995 – Eurocode 5: Design of timber structures

EN1995-1-1: Common rules and rules for buildings

EN1995-1-2: Structural fire design

EN1995-2: Bridges

EN 1996 – Eurocode 6: Design of masonry structure

EN1996-1-1: Rules for reinforced and unreinforced masonry

EN1996-1-2: Structural fire design

EN1996-2: Selection and execution of masonry

EN 1996-3: Simplified calculation methods and simple rules for masonry structures

EN 1997 – Eurocode 7: Geotechnical design

EN1997-1: General rules

EN1997-2: Design assisted by laboratory testing

EN1997-3: Design assisted by field testing

EN 1998 – Eurocode 8: Design of structures for earthquake resistance

EN1998-1: General rules, seismic actions and rules for buildings

EN1998-2: Bridges

EN1998-3: Strengthening and repair of buildings

EN1998-4: Silos, tanks and pipelines

EN1998-5: Foundations, retaining structures and geotechnical aspects

EN1998-6: Towers, masts and chimneys

EN 1999 – Eurocode 9: Design of aluminium structures

EN1999-1-1: Common rules

EN1999-1-2: Structural fire design

EN1999-2: Structures susceptible to fatigue