New and revised codes & standards

From BSI Updates July and August 2019

NEW WORK STARTED

EN 1993-1-2
Eurocode 3. Design of steel structures. General rules. Structural fire design
Will supersede BS EN 1993-1-2:2005

EN 1993-1-3
Eurocode 3. Design of steel structures. General rules. Supplementary rules for cold-formed members and sheeting
Will supersede BS EN 1993-1-3:2006

EN 1993-1-4
Eurocode. Design of steel structures. General rules. Supplementary rules for stainless steels
Will supersede BS EN 1993-1-4:2006+A1:2015

EN 1993-1-5
Eurocode 3. Design of steel structures. Plated structural elements
Will supersede BS EN 1993-1-5:2006+A1:2017

EN 1993-1-9
Eurocode 3. Design of steel structures. Fatigue
Will supersede BS EN 1993-1-9:2005

EN 1993-1-10
Eurocode 3. Design of steel structures. Material toughness and through-thickness properties
Will supersede BS EN 1993-1-10:2005

EN 1993-1-11:2006
Eurocode 3. Design of steel structures. Design of structures with tension components
Will supersede BS EN 1993-1-11:2006

EN 1993-2
Eurocode 3. Design of steel structures. Steel Bridges
Will supersede BS EN 1993-2:2006

BRITISH STANDARDS

BS 5975:2019
Code of practice for temporary works procedures and the permissible stress design of falsework
Supersedes BS 5975:2008+A1:2011

BS EN PUBLICATIONS

BS EN 10210-2:2019 – TC
Tracked Changes. Hot finished steel structural hollow sections. Tolerances, dimensions and sectional properties
No current standard is superseded

BS EN 10219-2:2019 – TC
Tracked Changes. Cold formed welded steel structural hollow sections. Tolerances, dimensions and sectional properties
No current standard is superseded

BS EN ISO 14174:2019
Welding consumables. Fluxes for submerged arc welding and electroslag welding. Classification
Supersedes BS EN ISO 14174:2012

BRITISH STANDARDS REVIEWED AND CONFIRMED

BS EN ISO 2560:2009
Welding consumables. Covered electrodes for manual metal arc welding of non-alloy and fine grain steels. Classification

BS EN 10111:2008
Continuously hot rolled low carbon steel sheet and strip for cold forming. Technical delivery conditions

BRITISH STANDARDS WITHDRAWN

BS 5975:2008+A1:2011
Code of practice for temporary works procedures and the permissible stress design of falsework
Superseded by BS 5975:2019

BS EN ISO 14174:2012
Welding consumables. Fluxes for submerged arc welding and electroslag welding. Classification
Superseded by BS EN ISO 14174:2019

DRAFT BRITISH STANDARDS FOR PUBLIC COMMENT - ADOPTIONS

19/30396713 DC
BS EN 10340-2 Steel castings for structural uses. Technical delivery conditions
Comments for the above document were required by 9 July, 2019

19/30382759 DC
BS EN 17412 Building Information Modelling. Level of Information Need. Concepts and principles
Comments on the above document were required by 19 August, 2019

AD 433: Dynamic modulus of concrete for floor vibration analysis

The purpose of this AD note is to provide advice on the choice of elastic modulus of concrete when undertaking the vibration analysis of a composite floor.

The elastic modulus of concrete depends on the constituent materials of the concrete mix and on the age of the concrete. It also depends on the duration of loading and whether the concrete is assumed to be cracked or un-cracked. Table 3.1 in BS EN 1992-1-1 gives strength and deformation characteristics for concrete by strength class. The values are tabulated for normal weight concrete with quartzite aggregates and are based on the cylinder strength f_{ck} at 28 days. The formula for the secant modulus E_{cm} is: $E_{cm} = 22[(f_{ck}+8)/10]^{0.3}$.

The value is in GPa when the cylinder strength is in MPa. Adjustments to the values for quartzite aggregates are given for limestone, sandstone and basalt aggregates. Practice in continental Europe is to use a dynamic modulus based on E_{cm} enhanced by 10%[1].

In UK practice, values for elastic modulus determined from the code are not considered suitable for the calculation of beam deflections from which the natural frequency of the beam is to be determined. The dynamic behaviour generally involves small amplitude vibrations to which the secant modulus at 28 days E_{cm} is not relevant. Instead, given the uncertainty regarding the parameters which affect the actual properties of concrete (type of aggregate, age of concrete, compressive strength etc.), an approximate dynamic modulus should be used which (from practice) gives reasonable results.

SCI publication P354 *Design of floors for vibration: a new approach*[2] and Concrete Centre publication: *A design guide for footfall induced vibration of structures*[3], both recommend the same values for the dynamic modulus of concrete which is appropriate for the estimation of the dynamic response of composite or concrete structures. Values are given for normal weight and light weight concrete as follows:

Uncracked concrete	Dynamic modulus (GPa)
Light weight	22.0
Normal weight	38.0

When using references 2 and 3, the stated values for dynamic modulus should not be enhanced by 10%.

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References

1. European Commission – Technical Steel Research: *Generalisation of criteria for floor vibrations for industrial, office, residential and public building and gymnastic halls*, RFCS; Report EUR 21972 EN, ISBN 92-79-01705-5, 2006.
2. Smith, A L, Hicks, S J, Devine P J, *Design of floors for vibration: a new approach,* Revised edition, February 2009, SCI publication P354
3. Willford, M R, Young, P, *A design guide for footfall induced vibration of structures*, Concrete Centre, November 2006