

# AD 460:

## Amendment A2 to EN 1993-1-4

In February 2021, the second amendment to the 2006 version of the stainless steel Eurocode was published, EN 1993-1-4:2006+A2:2020.

The amendment consists of one revision – Table 5.3, which lists the imperfection coefficient ( $\alpha$ ) and the plateau length ( $\bar{\lambda}_0$ ) that are used in the buckling curves for flexural, torsional and torsional-flexural buckling.

The revised table in this new amendment is presented below as Table 1.

Buckling mode	Type of member	Axis of buckling	Austenitic & austenitic-ferritic (Duplex)		Ferritic		
			$\alpha$	$\bar{\lambda}_0$	$\alpha$	$\bar{\lambda}_0$	
Flexural	Cold formed angles and channels	Any	0.76	0.2	0.76	0.2	
	Cold formed lipped channels	Any	0.49	0.2	0.49	0.2	
	Cold formed rectangular hollow sections	Any	0.49	0.3	0.49	0.2	
	Cold formed circular hollow sections	Any	0.49	0.2	0.49	0.2	
	Hot finished rectangular hollow sections	Any	0.49	0.2	0.34	0.2	
	Hot finished circular hollow sections	Any	0.49	0.2	0.34	0.2	
	Hot rolled sections & welded open or box sections	Major	0.49	0.2	0.49	0.2	
	Minor	0.76	0.2	0.76	0.2		
Torsional and torsional-flexural	All members	The values of $\alpha$ and $\bar{\lambda}_0$ for minor axis flexural buckling apply.					

Table 1 Values of  $\alpha$  and  $\bar{\lambda}_0$  for flexural, torsional and torsional-flexural buckling (Table 5.3 of EN 1993-1-4:2006+A2:2020)

The reason for the amendment is that since the original buckling curves were developed (more than 25 years ago), a considerable amount of additional experimental data on stainless steel compression members has been generated. The test data, supplemented by extensive numerical analyses and reliability assessments, indicate that for cold formed hollow and open sections, the existing buckling curves were too optimistic. Assessment of the data also showed that in some cases, a different buckling curve was justified for ferritic stainless steel due to its less non-linear stress-strain characteristics. Additionally, it was possible to make a distinction between rectangular and circular hollow sections, as well as lipped channels and plain channels. New data on hot finished hollow sections also enabled the addition of buckling curves for this product form. Welded box sections were conservatively assigned the same buckling curve as hot rolled and welded open sections.

Further information on the new flexural buckling curves is given in the Commentary to the *Design Manual for Structural Stainless Steel*, available from [www.steel-stainless.org/designmanual](http://www.steel-stainless.org/designmanual)

For torsional and torsional-flexural buckling, new test data has also suggested that the original buckling curve is too optimistic for channel section columns. In the absence of data for other open cross-sections susceptible to torsional or torsional-flexural buckling, the minor axis flexural buckling curve is recommended as a safe approximation. The same approach is used in prEN 1993-1-1:2020.

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## New and revised codes and standards

From BSI Updates March 2021

### BS EN PUBLICATIONS

#### BS EN ISO 8407:2021

Corrosion of metals and alloys. Removal of corrosion products from corrosion test specimens  
*supersedes BS EN ISO 8407:2014*

### BS IMPLEMENTATIONS

#### BS ISO 23864:2021

Non-destructive testing of welds. Ultrasonic testing. Use of automated total focusing technique (TFM) and related technologies  
*no current standard is superseded*

### UPDATED BRITISH STANDARDS

#### PD 7974-7:2019+A1:2021

Application of fire safety engineering principles to the design of buildings. Probabilistic risk assessment

### NEW WORK STARTED

#### EN 14717

Welding and allied processes. Environmental check list  
*will supersede None*

#### EN ISO 16925

Paints and varnishes. Determination of the resistance of coatings to pressure water-jetting  
*will supersede BS EN ISO 16925:2014*

#### BS 8135

Fire performance of external thermal insulation for walls of multi-storey buildings  
*will supersede None*

### DRAFT BRITISH STANDARDS FOR PUBLIC COMMENT – ADOPTIONS

#### 21/30412482 DC

BS EN ISO 3382-3 Acoustics. Measurement of room acoustic parameters. Open plan offices  
*Comments for the above document were required by 24 March, 2021*

#### 21/30423487 DC

BS ISO 22058 Construction procurement. Guidance on strategy and tactics  
*Comments for the above document were required by 29 March, 2021*

### DRAFTS FOR PUBLIC COMMENT

#### BS EN 1993-1-8

Eurocode 3, Design of steel structures, Design of joints.  
Visit <https://standardsdevelopment.bsigroup.com/projects/2020-02626> to view the draft details  
*Comments for the above document are required by 25 May, 2021.*  
*Anyone wishing to submit comments will need to register/login to access the Standards Development Site.*