

# AD 453:

## Accumulated deviations in erected steelwork

Questions about tolerances continue to arrive at SCI's Advisory Desk – often concerning the potential to sum all the possible deviations to reach a (usually large) tolerance on the final position of a component.

The suggestion is that, (for example) the base of a column can be out of position, and the column can be out-of-plumb, and the connections for a façade beam can be out of position, and the beam itself can have a lack of

straightness. Combine that situation with some fabricated bracket (with its own set of tolerances) connected to the beam and the potential for a large deviation at measured locations is obvious.

The National Structural Steelwork Specification (NSSS), which is now in its 7th Edition, deals with this by adopting a “root sum of the squares” approach. The accumulated sum of several independent sources of deviation ( $\Delta_1$ ,  $\Delta_2$ ,  $\Delta_3$  etc) is given by:

$$\Delta_{\text{sum}} = \sqrt{\Delta_1^2 + \Delta_2^2 + \Delta_3^2 \text{ etc}}$$

SCI advice is that when certain locations are critical (usually at interfaces with other components), it is much better to build in provision for adjustment than to argue about tolerances later.

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## New and revised codes & standards

From BSI Updates October 2020

### BS EN PUBLICATIONS

#### BS 8579:2020

Guide to the design of balconies and terraces  
*no current standard is superseded*

### BS EN PUBLICATIONS

#### BS EN ISO 2560:2020

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

#### BS EN ISO 11463:2020

Corrosion of metals and alloys. Guidelines for the evaluation of pitting corrosion  
*supersedes BS EN ISO 11463:2008*

#### BS EN ISO 14341:2020

Welding consumables. Wire electrodes and weld deposits for gas shielded metal arc welding of non alloy and fine grain steels. Classification  
*supersedes BS EN ISO 14341:2011*

### BS IMPLEMENTATIONS

#### BS ISO 6707-1:2020

Buildings and civil engineering works. Vocabulary. General terms  
*supersedes BS ISO 6707-1:2017*

### BS ISO 16573-1:2020

Steel. Measurement method for the evaluation of hydrogen embrittlement resistance of high strength steels. Constant load test  
*supersedes BS ISO 16573:2015*

### BS ISO 22858:2020

Corrosion of metals and alloys. Electrochemical measurements. Test method for monitoring atmospheric corrosion  
*no current standard is superseded*

### NEW WORK STARTED

#### EN XXX

Execution of steel structures and aluminium structures. Environmental Product Declarations. Product category rules complementary to EN 15804 for Steel, Iron and Aluminium structural products for use in construction works.  
*will supersede None*

#### ISO/TR 3834-6

Quality requirements for fusion welding of metallic materials. Guidelines on implementing ISO 3834  
*will supersede PD CEN ISO/TR 3834-6:2007*

### DRAFTS FOR PUBLIC COMMENT

#### 20/30392670 DC

BS EN 1990 Eurocode. Basis of structural and geotechnical design  
*Comments for the above document were required by 26 October, 2020*

#### 20/30414381 DC

BS EN 1993-1-1 Eurocode 3. Design of steel structures. General rules and rules for buildings  
*Comments for the above document were required by 26 October, 2020*

#### 20/30422209 DC

PD 7974-7 AMD1 Application of fire safety engineering principles to the design of buildings. Probabilistic risk assessment  
*Comments for the above document were required by 23 October, 2020*

### CEN EUROPEAN STANDARDS

#### EN 10210-3:2020

Hot finished steel structural hollow sections. Technical delivery conditions for high strength and weather resistant steels

#### EN 10219-3:2020

Cold formed welded steel structural hollow sections. Technical delivery conditions for high strength and weather resistant steels