

AD 413: Shear resistances of M12 bolts

Designers using paper or online versions of the Eurocode Blue Book may have noted that the shear resistance of an M12 bolt has different values quoted, depending on the resource selected.

According to BE EN 1090, the clearance hole for an M12 bolt is 13 mm. If this diameter hole is used, then the shear resistance may be calculated

in the normal way, without any additional factors. This value of shear resistance appears in the online Steel for Life version of the Blue book.

Clause 3.6.1(5) of BS EN 1993-1-8 allows M12 bolts to be used in 14 mm holes (i.e. slightly oversize), but applying a factor of 0.85 to the quoted resistance. This factor was applied in the paper versions of the Blue Book (P363) and the

ArcelorMittal Orange Book resource. It is clearly conservative to apply the 0.85 factor, though the reduction is unnecessary if M12 bolts are used in 13 mm holes.

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AD 414: Slip-resistant connections to BS EN 1993-1-8

Clause 3.4.1 of BS EN 1993-1-8 describes two types of slip-resistance connections:

- Category B: Slip-resistant at SLS.
- Category C: Slip-resistant at ULS.

Designers often ask when the different categories are appropriate.

Category B is appropriate if slip after SLS but before ULS only produces some unsightly deflections (which may be very unwelcome), but crucially, does not reduce the ultimate resistance

of the element or structure. An example might be a splice connection in a roof truss. According to Table 3.2 of the Eurocode, in addition to verifying slip resistance at serviceability the shear and bearing resistance of the bolts must be verified in Category B connections, so that the ultimate resistance of the joint is not reduced even if slippage occurs after SLS.

Category C is appropriate when slip below ULS might reduce the ultimate resistance of

the element or structure. An example of this might be a plan bracing restraint system to a compression member – for example in a heavily loaded transfer truss. Slippage within the restraint system might reduce the buckling resistance, so this must be prevented.

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New and revised codes & standards

From BSI Updates November 2017

BRITISH STANDARDS WITHDRAWN

BS 6779-1:1998

Highway parapets for bridges and other structures. Specification for vehicle containment parapets of metal construction

Partially superseded by BS EN 1317-1:1998

DRAFT BRITISH STANDARDS FOR PUBLIC COMMENT – ADOPTIONS

17/30346735 DC

BS EN 10225-3 Weldable structural steels for fixed offshore structures. Technical delivery conditions. Part 3. Hot finished hollow sections

Comments for the above document are required by 7 November 2017

17/30346738 DC

BS EN 10225-2 Weldable structural steels for fixed offshore structures. Technical delivery conditions. Part 2. Sections

Comments for the above document are required by 7 November 2017

17/30347632 DC

BS EN ISO 11126-8 Preparation of steel substrates before application of paints and related products. Specifications for non-metallic blast-cleaning abrasives. Part 8. Olivine

Comments for the above document are required by 28 November 2017

17/30361154 DC

BS EN ISO 11124-3 Preparation of steel substrates before application of paints and related products. Specifications for metallic blast-cleaning abrasives. Part 3. High-carbon cast-steel shot and grit

Comments for the above document are required by 28 November 2017

17/30361157 DC

BS EN ISO 11124-4 Preparation of steel substrates before application of paints and related products. Specifications for metallic blast-cleaning abrasives. Part 4. Low-carbon cast-steel shot

Comments for the above document are required by 28 November 2017

CEN EUROPEAN STANDARDS

EN 1993-4-1:2007/A1:2017

Eurocode 3. Design of steel structures. Silos

EN ISO 2063-1:2017

(ISO 2063-1:2017)

Thermal spraying. Zinc, aluminium, and their alloys. Design considerations and quality requirements for corrosion protection systems

EN ISO 2063-2:2017

(ISO 2063-2:2017) Thermal spraying. Zinc, aluminium and their alloys. Execution of corrosion protection systems

ISO PUBLICATIONS

ISO 2063-2:2017

Thermal spraying. Zinc, aluminium and their alloys. Execution of corrosion protection systems Will be implemented as an identical British Standard