

Update on the revision of the ASCE-8 Standard for the Design of Stainless Steel Structural Members

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- ASCE-8 Committee met in May 2010 in conjunction with ASCE Structures Congress
 - Scope of revision discussed, including cold-formed only or both cold-formed and hot-rolled
 - Revision started in June 2010
- 1st draft of revised standard completed in June 2011
 - A rewrite of the Standard required because of poor conversion from Word Perfect to Word
 - Still with the ASCE Secretariat
 - Not yet circulated to Committee
- No completion date set at this point in time
- 2012 version of AISI-S100 Specification for Cold-formed Steel Structural Members to be published shortly. May require further revision of ASCE-8

- Remains a cold-formed standard
- Recalibration to a target reliability index for member of 2.5 to be consistent with the AISI S100 Specification. Generally speaking, this leads to an increase in ϕ of 0.05.
- Section 1 General Provisions:
 - Additional ASTM Standards covering 1.4003 (3CR12) and 1.4462 (S31802)
 - Loads and load combinations: replaced by reference to ASCE-7
 - Analysis: Rules for 2nd order analysis included in Appendix 2, (as per AISI S100-07)
- Section 2 Elements:
 - Multiple changes as per AISI S100-07
 - Rules for unstiffened elements with stress gradient
 - Effective widths rules for Stiffened Elements with Single or Multiple Intermediate Stiffeners or Edge Stiffened Elements with Intermediate Stiffener(s)

■ Section 3 Members:

- Included rules for distortional buckling for both columns and beams
- Revised web crippling rules as per Feng and Zhou (2006,2007,2008)
- Explicit design approach for columns as per AS/NZS4673, expanded to cover flexural, torsional and flexural-torsional buckling

$$F_n = \frac{F_y}{\phi + \sqrt{\phi^2 - \lambda^2}} \leq F_y \qquad \eta = \alpha \left((\lambda - \lambda_1)^\beta - \lambda_0 \right)$$

- Values of α , β , λ_0 and λ_1 provided for 1.4003 (3CR12) and 1.4462 (S31802)
 - Amended rules for tubes, including plastic moment capacity of SHS and RHS
- ### ■ Section 4 Structural Assemblies:
- Unchanged

- Section 5 Connections and Joints:
 - Included rules for welded joints in SHS, RHS and CHS, as per AS/NZS4673 or CIDECT
- Section 6 Testing
 - Essentially unchanged
- Appendix 1: DSM for compression members (new)
- Appendix 2: Second order analysis (new)

