

Steel Structures Standard Revision - Construction

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Introduction

The current format of the Steel Structures Standard (SNZ 2007) is to be reconfigured. The standard will be broken into seven parts. The construction part will incorporate material selection, fabrication, corrosion protection and erection aspects of the Standard (SNZ 2007).

Issues Warranting Inclusion/ Revision

An initial review of current international steel construction practice (AISC 2000, BSCA/SCI 2007, CISC 2007), and local experience with the current provisions have indicated the following areas need some attention.

1. Tolerances Steel/ Concrete Interfaces

This includes precast flooring seated on steel beams and concrete walls supporting steel beams. The difficulty with these interfaces is that the manufacturing tolerances are quite different for fabricated steel and cast concrete elements. Designers are looking for clear guidance on the total tolerance that needs to be accommodated in the connection details for these situations.

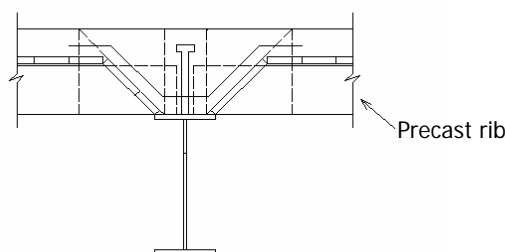


Figure 1 Precast flooring on a steel beam support

A similar issue is the connection of free on board items, such as cladding systems, to the main structure where allowance must be made in the fixing details to ensure the final positioning of such items is within acceptable tolerance limits.

2. Non Destructive Weld Testing

The non destructive testing requirements for welded connections is a function, among other things, of the type of weld (fillet/ butt weld), the nature of the loading (predominantly static, seismic, fatigue) and the importance of the connection to the performance of the structure. The intention is to clarify the sampling requirements, particularly for connections to moment resisting and eccentrically braced frames subject to seismic design actions.

3. Architecturally Exposed Structural Steelwork

There are instances where a higher quality of fabrication is required for architecturally exposed structural steel (AESS) that can be viewed from close proximity. In these instances closer tolerances and smoother surface finishes are required than for ordinary steelwork. Provisions for architecturally exposed structural steel (AESS) have already been developed for use in North America (AISC 2000). The Canadians are currently preparing AESS provisions which, when published, will likely represent the latest thinking in this area and will be a useful reference document for the development of local provisions.

4. Tolerances for Fabricated Components

The current Steel Structures Standard (SNZ 2007) contains no tolerance limitations for elements of fabricated components such as welded stiffeners and the precamber of trusses. Relevant provisions for these are found in the British publication, National Structural Steelwork Specification for Building Construction (BCSA/SCI 2007) and the AISC Code Standard Practice for Steel Buildings and Bridges (AISC 2000).

This list is not exhaustive, it is just a foretaste of some of the issues that will be reviewed as part of the revision process. Feed back from all steel construction industry stake holders is very welcome. Please contact SCNZ Manager Clark Hyland if you have any comments to make in this regard.

References

AISC, Code of Standard Practice for Steel Buildings and Bridges, American Institute of Steel Construction, Illinois, March 2005

BCSA/SCI, National Structural Steelwork Specification for Building Construction, Publication No. 203/07, The British Steelwork Construction Association/ Steel Construction Institute, London/Berkshire, January 2007

CISC, Handbook of Steel Construction, 9th Edition, Canadian Institute of Steel Construction, Ontario, June 2007

SNZ, Steel Structures Standard, NZS3404 Parts 1 and 2: 1997 (incorporating Amendment 1 and 2), Standards New Zealand, Wellington, October 2007