

Adoption of High-Strength Structural Bolt Assembly Standard AS/NZS 1252: 2016

The high-strength structural bolt assembly standard AS/NZS 1252.1 (SA/NZS, 2016a) was revised and republished in December 2016. A companion document, AS/NZS 1252:2 (SA/SNZ 2016b), *Verification testing for bolt assemblies*, was also published at the time.

This Fact Sheet discusses the key elements of the new standard and the timeframe to full supply of product manufactured to AS/NZS 1252.1: 2016. It also recommends alternative verification inspection and test requirements to those prescribed in AS/NZS 1252.2.

Adoption of new product standards

SCNZ has taken an active role in managing the transition of supply to the revised high-strength structural bolt assembly standard as there is no process in New Zealand for regulating the adoption of new steel product standards. Changes to manufacturing standards may take several years to implement depending on the nature of the changes. Time is required for bolt assembly manufacturers to change their production processes to comply with the new requirements and for bolt importers to de-stock product to the old revision of the standard.

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Key changes

The key changes to AS/NZS 1252.1 and the development of AS/NZS 1252.2 were intended to address the higher compliance risk posed by the global sourcing of high-strength bolt assemblies used in constructional steelwork. In particular, the manufacturer quality system, and mandatory inspection and test requirements, were introduced into AS/NZS 1252.1 to regulate and establish the quality of their product. The other significant technical changes were the recognition of property class 8.8 bolt assemblies to EN 14399 HR as a 'deemed to satisfy' alternative assembly type, and the inclusion of property class 10.9 bolt assemblies as an additional assembly type.

The verification testing requirements in AS/NZS 1252.2: 2016 are a limited form of third-party conformity assessment undertaken by the importer (Key, 2019). These test requirements are in addition to the manufacturer testing specified in AS/NZS 1252.1: 2016. The intention is that a specifier, typically an engineer or procuring agency, who requires greater assurance of product quality, could specify that the product is supplied to the requirements of AS/NZS 1252.1: 2016 and that its quality is independently verified in accordance with AS/NZS 1252.2: 2016.

Unfortunately, the verification testing requirements of AS/NZS 1252.2: 2016 have never been fully implemented, either in New Zealand or Australia. This is because the requirements are considered excessive when applied to routine batch testing of product from regular suppliers, and also because there has been a lack of test equipment in New Zealand to undertake all the tests prescribed in the standard.

Verification testing

To address the concerns noted with respect to the test requirements in AS/NZS 1252.2, SCNZ has developed alternative verification test requirements. These are presented in the Steel Advisor article Mat 1010 (Cowie et. al., 2020), which is available from the SCNZ website.

It is recommended that, when additional confidence of the quality of property class 8.8 assemblies is required, verification testing to the requirements of Steel Advisor Mat 1010 is specified in the contract documents. This approach is adopted in the *New Zealand Steelwork Specification in Compliance with AS/NZS 5131* (SCNZ, 2018), which was developed by SCNZ and is available from the SCNZ website.

Timeframe

A number of the high-strength bolt assembly producers supplying the New Zealand market are now manufacturing to the new standard and bolt importers have been destocking AS/NZS 1252:1996 (SA/SNZ, 1996) product for most of this year. Consequently, there has been an increased supply of AS/NZS 1252: 2016 product in 2020, with full supply to the market anticipated by early 2021.

About AS/NZS 1252 High Strength Structural Bolt Assembly Standard

The standard specifies requirements for the manufacture (mechanical and geometric properties) of high-strength fastener assemblies (property class 8.8) in diameters from 12mm to 36mm. It also includes requirements for managing and verifying the quality of product manufactured to this standard. These bolt assemblies may be installed in the snug tight and fully tensioned condition.



For further information about the high-strength structural bolt assembly standard, AS/NZS 1252: 2016, and its adoption for use in New Zealand construction steelwork projects, contact SCNZ.

References

Cowie K. & Fussell A. (2020). *Practice note on the sourcing of compliant high strength structural bolts* (Steel Advisor Mat 1010 v1). Steel Construction New Zealand (SCNZ).

Key P. (2019). *High strength structural bolt assemblies to AS/NZS 1252: 2016* (Technical Note TN001 v5). Australian Steel Institute (ASI).

SA/SNZ (2016a). *High strength steel fastener assemblies for structural engineering – Bolts, washers and nuts: Part 1 – Technical requirements* (AS/NZS 1252.1: 2016). Standards Australia/ Standards New Zealand.

SA/SNZ (2016b). *High strength steel fastener assemblies for structural engineering – Bolts, washers and nuts: Part 2 – Verification testing for bolt assemblies* (AS/NZS 1252.2: 2016). Standards Australia/ Standards New Zealand.

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