STEEL CONSTRUCTION NEW ZEALAND

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SCNZ FACT SHEET

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Evaluation of Product Conformity

The globalisation of structural steel supply chains for New Zealand building and infrastructure projects has raised concerns about the quality of materials sourced from low-cost economies. Third-party product certification is a recognised approach for reducing the risk of non-compliant products.

Why are compliant construction materials so important? Design standards such as NZS 3404: Steel Structures Standard are calibrated using test data – including steel production test data – to ensure that structures designed to these standards have an acceptably low probability of failure during their lifetime. Such calibration exercises are predicated on having construction materials with reliable mechanical and chemical properties.

This Fact Sheet provides an overview of conformance assessment and the role of third parties in this process. It also offers guidance for identifying appropriate third-party product certification schemes.

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Conformance assessment

Structural steel supply standards typically include requirements for both product conformity and conformance assessment. Conformity requirements specify the product characteristics – e.g. minimum yield strength – and the inspection and test protocols to check the product complies with the standard. Conformance assessment relates to the series of processes necessary to show a product meets the standard.

The main forms of conformance assessment are inspection and testing (determination), review of the evidence of determination and attestation (statement of conformity). Conformance assessment also overlaps with other disciplines such quality management. So it is essential that a manufacturer operates a quality management system in conjunction with its conformance assessment activities to ensure it consistently meets the requirements of the relevant supply standard. This need is captured in the EN and AS/NZS material supply standards – manufacturers of steel products to these standards must meet conformance requirements for Initial Type Testing and Factory Production Control.

Evaluation of Conformity

Initial Type Testing (ITT)
The complete set of tests described in a standard to determine the characteristics of product samples, representative of the product type. The ITT provides the manufacturer with the product characteristics using its manufacturing, measuring and quality management system.

Factory Production Control (FPC)
FPC covers operational techniques and all measures necessary to maintain and regulate the conformity of the product to the requirements of the relevant standards. This includes personnel, equipment, procedures, and inspection and testing.

Importantly, Standards Australia and Standards New Zealand adopt the principle of neutrality for their standards documents. Under this principle conformance assessment can be first (manufacturer), second (purchaser) or third party (independent). Furthermore, no standard requirements for products shall make conformity assessment contingent upon a quality management system. While not covered in New Zealand building regulations, engineers should carefully consider specifying third-party product certification as part of a risk-based approach to product conformance.

Third-party product certification schemes

The most rigorous approach to product conformance assessment is third-party product certification. Product certification entails a site assessment of the factory to determine if the management and processes are capable of consistently manufacturing product to standard, as well as independent product testing. These activities are undertaken by a suitably qualified conformance assessment body.

These schemes have been originated by standards associations, industry and conformance assessment bodies. Example schemes are listed in the Table 1.

Originator	Third-Party Product Certification Scheme
Industry	• ATIC (Australian Technical Infrastructure Committee) Scheme 10
Standards Association	• JIS Mark (Japanese Industrial Standards) • BSI (Benchmark)
Conformance Assessment Body	• ACRS Scheme (Reinforcing and Structural Steels to AS/NZS standards) • UKCARES (Reinforcing and Structural Steels to EN standards) • BSI (Benchmark)

Table 1: Examples of third-party product certification schemes

The rigor of the scheme is determined by the scheme's owner and reference should be made to the owner for full details. Ideally, the scheme should meet the requirements of ISO 17067: Conformity Assessment — Fundamentals of Product Certification and Guidelines for Product Certification Schemes. Also, the conformance assessment body should be accredited by a signatory to International Accreditation Forum Multilateral Recognition Agreement (e.g. JAS-ANZ). Accreditation is pivotal as it provides independent assessment of the competency and independence of a conformance assessment body.

Third-party product certification does not alleviate the steel producer of its duty as the party primarily responsible for the quality of its product. It must therefore meet the conformance assessment requirements of the relevant steel supply standard and issue a test certificate for its steel. This regular conformance assessment activity is complemented by the periodic conformance activity of a third party. Together first- and third-party product certifications provide greater assurance of product conformity and represents best practice.

For further information related to this Fact Sheet visit **www.scnz.org** or contact SCNZ directly.

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