



AUSTRALIAN STEEL INSTITUTE



**ASI**

## **National Structural Steelwork Compliance Scheme**

### **A Guide to the NSSCS and Certification for Fabricators**



**Version 2, 2016**

## USE OF THIS GUIDE

This document is intended to be used by bodies responsible for or involved with, ensuring successful outcomes in the process of fabricating constructions in structural steel. These bodies may include entities such as **fabricators, erectors and suppliers** who are involved in the fabrication, subcontracting and ancillary trades.

The Australian Steel Institute has produced this document as Guidance to the understanding and use of the **National Structural Steelwork Compliance Scheme** (NSSCS). This scheme is based on the principles of the mandated CE Marking scheme in use throughout Europe, where structural steelwork is deemed a safety component and hence the compliance scheme has been legislated i.e. it is EU law

In Australia the NSSCS is a voluntary and open scheme but has links to the WH&S Act through the Safe Design of Structures Code of Practice, where the stakeholder needs to demonstrate duty of care to ensure that their structure is safe, which logically includes ensuring the use of product compliant with the design specification and performance requirements of our national Standards.

The purpose of the NSSCS is to help ensure that the stakeholders for a constructed steel structure obtain the quality that is fit for the purpose for which it has been designed and for which they have paid.

The Australian design Standards are supported by and closely interlinked with material and workmanship Standards that are often poorly understood by many stakeholders in the supply chain. Because these Standards are tightly interrelated, a failure or substitution in one area can significantly compromise another, with serious consequences. It is therefore considered that a holistic approach to product compliance, encompassing the whole supply chain, is required and ASI, who along with its members is represented on many of the relevant Standards committees, has taken on the challenge of implementing the new national compliance scheme in a similar fashion to what has been the case overseas.

The NSSCS has been set up in parallel with New Zealand through HERA and SCNZ, whose organisations are implementing a similar scheme.



# ASI NATIONAL STRUCTURAL STEELWORK COMPLIANCE SCHEME

## A GUIDE TO THE NSSCS AND CERTIFICATION FOR FABRICATORS

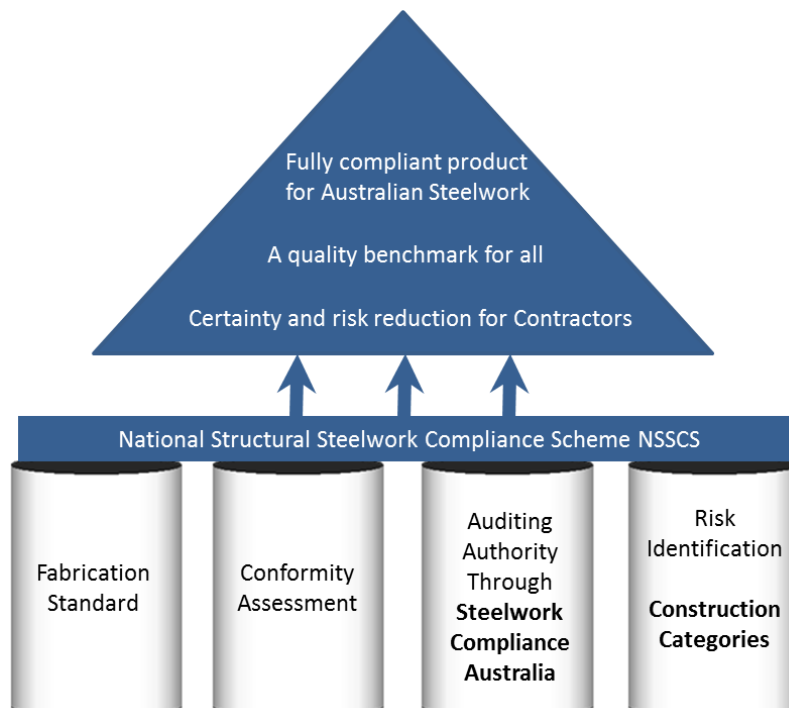
### The ASI National Structural Steelwork Compliance Scheme (NSSCS)

The ASI National Structural Steelwork Compliance Scheme (NSSCS) is an independent third party quality compliance and certification system for supply, fabrication and erection of structural steelwork in Australia. The technical basis for the NSSCS is founded on AS/NZS 5131 'Structural steelwork – Fabrication and erection' and is applicable to structures designed to AS 4100 (structural steelwork), AS 5100.6 (bridges) and supporting Australian Standards including those for welding, bolting and corrosion protection.

### Structure of the Scheme

The National Structural Steelwork Compliance Scheme comprises four pillars:

- **Fabrication Standard:** the new Australian Standard AS/NZS 5131 'Structural steelwork – Fabrication and erection' was published in December 2016. It sets the technical basis for the NSSCS and defines 'product conformity'.
- **Conformity Assessment:** the process for checking conformity to the performance intent of AS/NZS 5131. Currently this has been established by Steelwork Compliance Australia (SCA).
- **Steelwork Compliance Australia (SCA):** the separate body established to audit and certify fabricators to one of the risk-based 'Construction Categories' defined in AS/NZS 5131.
- **Risk identification:** the level of risk is defined by the Construction Category selected by the engineer for the particular project or a component of the project.



### Benefits for the fabricator

- A **uniform quality bar** in respect of both imported and domestically produced steelwork, which promotes fair competition with your peers
- **Establishes differentiation** for the fabricator, in particular in respect of competition from imported prefabricated structural steelwork of uncertain provenance and quality
- **Independently verifies fabricator capability**, particularly important when working in new markets or securing new clients
- **Demonstrates commitment to quality**
- **Rationalise your certifications**, with corresponding cost and time savings
- In time, becomes a de facto '**National Technical Prequalification Scheme**', with ensuing benefits in efficiency for you in the tendering process
- Potential to **improve productivity and reduce rework**

### Benefits for Australia

- **Greater certainty** of construction outcomes
- **Reduction of risk** through minimising bogus or fraudulent supply
- **Productivity increases** through minimising the need for rework and repair over the lifecycle of the project
- **Productivity and efficiency increases** through establishment of a de facto 'national technical prequalification scheme' via the construction category based certification
- Meeting the intent of the **Work Health and Safety Act** to demonstrate duty of care
- **Rationalisation of competency certification** across Australia, with the expectation that in time existing certifications will adopt or harmonise with the NSSCS.

### The Construction Category

The designation of the 'Construction Category' by the engineer is the risk-based fit-for-purpose mechanism to ensure our quality compliance outcomes meet community expectations as defined by AS/NZS 5131.

The engineer establishes the Construction Category based on selecting inputs to a simple risk matrix. These inputs include the structure importance level from the National Construction Code and factors reflecting type of loading (in particular, earthquake or fatigue) and the complexity of the fabrication.

As a fabricator, you will need to decide which Construction Category best fits the range of work you expect to undertake and apply for certification to that Category.

ASI strongly encourages a realistic and pragmatic assessment of the appropriate Category and not to overreach with initial expectations. The certification process (see next) is deliberately configured to support a staged approach to certification, with Category CC2 the expected level suitable for the majority of projects in Australia.

Whilst it is the engineer's responsibility to define the Construction Category for each project or component of a project, in most cases for the usual structural and loading conditions, it is possible to categorise types of structures for each category, as shown overpage.



| <b>Construction Category 1 (CC1)</b>   |
|--|
| Simple structure, low consequence  |
| Typical structures might include gates, handrails, agricultural buildings (no people congregating) or greenhouses. |

| <b>Construction Category 2 (CC2)</b>  |
|---|
| Medium structure, moderate consequence  |
| Typical structures might include commercial, residential and educational buildings not exceeding 15 storeys, smaller hospitals, warehouses or industrial buildings. |

| <b>Construction Category 3 (CC3)</b>   |
|--|
| More complex, higher risk  |
| Typical structures might include larger commercial, residential and educational buildings, larger hospitals, bridges or other structures designed for fatigue actions, or as specifically required in authority construction specifications. |

| <b>Construction Category 4 (CC4)</b>  |
|---|
| Most complex, highest risk  |
| Typical structures might include structures with extreme consequences of structural failure, as required by national or project specific provisions or special structures such as long span bridges and power stations. |

## Certification

The SCA certification of a fabricator to one of the Construction Categories\*\* demonstrates the fabricator has the processes in place and competency required to satisfy the requirements defined in AS/NZS 5131. The certification is NOT for a specific project but rather requires the fabricator to undertake certification via an initial application and audit, and maintain certification via annual maintenance audits.



*\*\*Note: SCA does not certify against CC4, given the project-specific nature of CC4. Certification would be undertaken on a case-by-case basis.*

## The certification process

The process of SCA certification for structural steelwork fabricators varies according to the Construction Category applied for and has been structured to be responsive to ongoing assessment and the evolving competency of the fabricator.

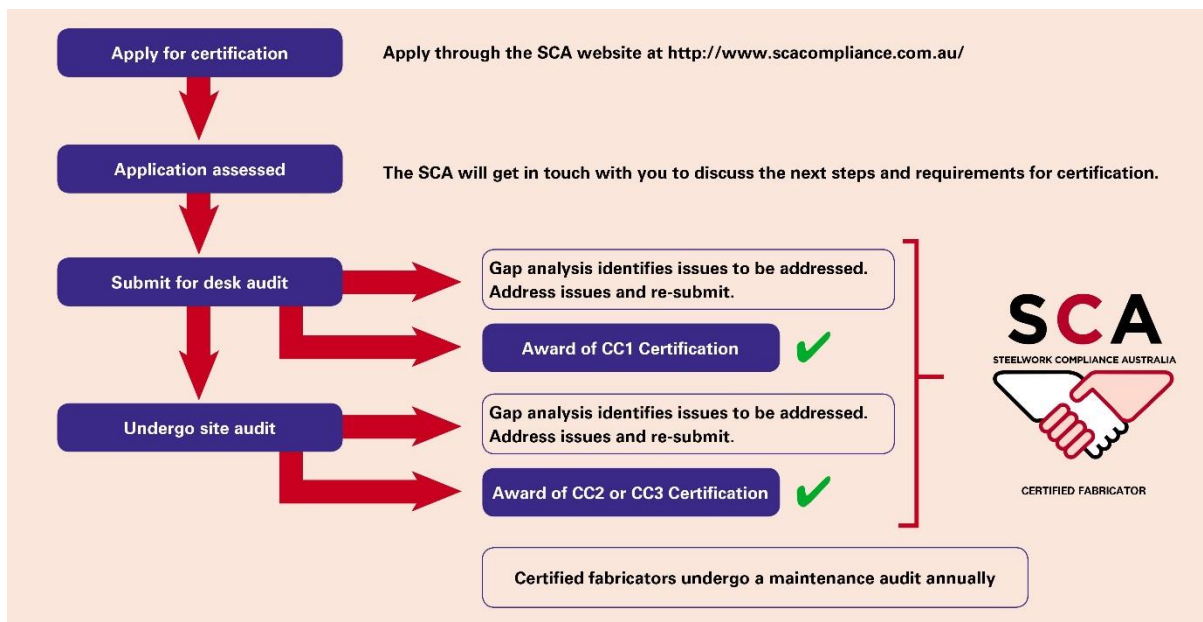
| Step  | Requirements  |
|---|---|
| <b>Initiate:</b>  |   |
| 1   | Fabricator assesses desired Construction Category   |
| 2   | Contact ASI or SCA to discuss selection (if required)   |
| 3   | Contact the SCA and receive the link to the Application Form and make the initial payment (via direct transfer)                                     |
| <b>Stage 1 (Desktop audit):</b>   |   |
| 4   | On receipt of application, the SCA Manager will make contact to discuss any shortfalls, and all being in order, arrange the Stage 1 (desktop) audit |
| 5   | Fabricator undertakes Stage 1 audit (about 2 hours to complete) and uploads required documentation  |
| 6   | SCA manager audits Stage 1 documentation and identifies any shortcomings  |
| 7   | Fabricator addresses shortcomings (if any) to satisfaction of SCA Manager   |
| 8   | At this point fabricators can be certified to CC1. Refer Point 17   |
| 9   | For certification to CC2 or CC3:<br>Continue to Stage 2 (site audit)  |
| <b>Stage 2 (Site audit): (Prerequisite: must have completed up to and including Step 8)</b> |   |
| 10  | Fabricator to formally indicate to SCA manager readiness to commence Stage 2  |
| 11  | SCA Manager discusses audit readiness with fabricator   |



|    |  |
|----|--|
| 12 | SCA Manager schedules time to visit fabricator shop for site audit. Site audit typically involves a full day and will require access to a number of the fabricator's key operational personnel. (Note that the audit and certification is site specific and multiple sites will require separate audits) |
| 13 | SCA Manager assesses Stage 2 audit results and identifies any shortcomings. An Audit Report will be provided   |
| 14 | Fabricator addresses major non-conformances (if any) to satisfaction of SCA Manager  |
| 15 | SCA Manager discusses minor non-conformances (if any) with fabricator and agrees action plan with fabricator to address these prior to first annual surveillance audit   |
| 16 | SCA Manager approves certification to Stage 2 for either CC2 or CC3, as appropriate  |
| 17 | Fabricator executes Certification Agreement (including action plan for minor non-conformances)<br>SCA includes fabricator on SCA website 'Register of Certificate Holders' as CC1, CC2 or CC3, as appropriate  |

Certification gives the fabricator the right to utilise the SCA Certification Mark on documentation.

A simplified flow chart is shown below:



### Are you audit ready?

Fabricators who wish to be certified to the Scheme are encouraged to apply and obtain the evaluation from the SCA Manager relating to Audit readiness.

The front end application and related discussions assist with determining audit-readiness.

The result may be to progress to the Stage 1 Audit (Desktop) or alternatively to undertake some further preparatory work before proceeding to the next phase.

Those who have been working on their business management and/or their quality management system will be well on their way to being audit-ready.

Most fabricators who have been successfully through an ISO 9001 certification audit will have an effective management system and so will be well on the way, or if they have AS/NZS 3834



certification, or a government agency pre-qualification e.g. AusRoads, DPTI, VicRoads, RMS or TMR for major or minor works, they are likely to be audit-ready for one or more categories.

Audit-ready does not mean that certification to a preferred Construction Category is guaranteed, but it will mean that the audit process will provide the fabricator a defined pathway to certification to the preferred level.

### **Audit considerations**

The audit scope is driven largely by the requirements in AS/NZS 5131, which covers the following key areas:

- Specifications, Standards and documentation
  - Quality documentation
  - Quality plans
  - Safety
  - Systems and processes
  - Purchasing (components and subcontracted services)
- Materials
- Preparation, assembly and fabrication
- Welding
- Mechanical fastening
- Surface treatment and corrosion protection
- Erection
- Geometrical tolerances
- Inspection and testing
- Non-conformities
- Site modifications during erection

**Key considerations** of the Audit include:

- Control of material
- Traceability
- Welding
  - Qualified weld procedures
  - Qualified welders
  - Control of welding consumables
  - Control of welding, supervision and inspection
- Resources
  - People
  - Plant and equipment

Purchasing and subcontracting to manage bought in materials and outsourced work and activities.

Extent of development of the fabricator's QMS and related documentation increases with the Construction Category.

**Be part of the solution and make a difference!**

Visit: <http://www.scacompliance.com.au/>



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