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THE UPCOMING AS/NZS 5131 STRUCTURAL STEELWORK FABRICATION AND ERECTION STANDARD

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ABSTRACT

The construction industry requires project cost to be balanced against a basic requirement that steel products are manufactured and installed to meet the performance requirements inherent in national Standards. The community has an expectation around risk, safety and quality that is defined by a combination of the building regulation and the relevant Standards. In a construction product procurement environment that is becoming increasingly globalized, the risk of misalignment between quality of products and community expectations is heightened.

To address increasing community concerns and demonstrable product failures, the Australian Steel Institute (ASI), Steel Construction New Zealand (SCNZ) and Heavy Engineering Research Association (HERA) underwrote the development of a 'Code of Practice' that was used for seeding the proposed new Standard AS/NZS 5131 Steel Structures Fabrication and Erection. This paper outlines the basis for the Code of Practice (and proposed new Standard) and provides guidance to engineers and the supply chain on implementation.

Background

A recent Australian Industry Group (AiG) survey (Ref. 1) reported that 95 percent of respondents surveyed in the steel product sector reported non-conforming product in their supply chain. A recent guide authored by a broad cross-section of industry and published by the Australasian Procurement Construction Council (APCC) entitled 'Procurement of construction products – A guide to achieving compliance' (Ref. 2) addresses these concerns by providing both an informed understanding and a set of guiding principles which all stakeholders should reference.

There is a fundamental question that impacts on all stakeholders in the industry and that is: **"How can you warrant the safety of a structure if you cannot confirm that the safety critical components utilised in that structure are compliant?"** Addressing that question as far as is reasonably practicable goes to the core of efforts to support industry on this journey, in respect of structural steelwork and has driven the initiative to create the first structural steelwork fabrication and erection Standard, AS/NZS 5131 for Australia and New Zealand, which is currently in Standards committee process.

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Context

The new Australian and New Zealand Standard AS/NZS 5131 Structural Steelwork Fabrication and Erection is currently in committee process at Standards Australia. The exact details of that process are committee-in-confidence and can therefore not be discussed. There is an expectation that the draft Standard will come out for public comment later this year or early next year.

The following discussion is therefore based on the ASI Structural Steelwork Fabrication and Erection Code of Practice (CoP) (Ref. 3), a joint initiative between the Australian Steel Institute (ASI), Steel Construction New Zealand (SCNZ) and Heavy Engineering Research Association (HERA) to create a document defining what best practice looks like for fabrication and erection of structural steelwork in Australia and New Zealand. The CoP was the starting document for the new AS/NZS 5131.

The Fabrication and Erection Code of Practice

Development

The ASI Structural Steelwork Fabrication and Erection Code of Practice was developed through a committee managed by ASI, with representatives from a broad cross-section of the steel stakeholder chain, including designers, manufacturers, fabricators and industry organisations. The draft document was also reviewed by a range of other stakeholders before being submitted to Standards Australia as the starting document for the project to develop AS/NZS 5131. In the interim pending publication of AS/NZS 5131, both ASI and SCNZ/HERA are actively raising market awareness and implementing certification schemes to provide industry actionable solutions.

Scope

The CoP sets out minimum requirements for the construction of structural steelwork involving fabrication, preparation of steel surfaces for corrosion protection, corrosion protection comprising painting and galvanizing, erection and modification of steelwork. It applies to complete structures, individual members and components and manufactured components pre-fabricated for inclusion in a steel structure.

The CoP specifies requirements for the construction of structural steelwork produced from:

- Hot rolled structural steel sections, flat bars and plates which were designed using AS 4100 or NZS 3404.1 or AS 5100;
- Cold-formed structural hollow sections, including hollow sections manufactured by welding, which comply with AS/NZS 1163 and which were designed using AS 4100 or NZS 3404.1 or AS 5100;
- Weather-resistant steel members and components complying with AS/NZS 3678;
- Steel beam members in composite steel and concrete structures designed using AS 2327.1 or NZS 3404.1 or AS 5100, including beams, columns, composite slabs and decking;
- Cold-formed purlin and girt members and decking designed using AS/NZS 4600.

The CoP applies to all types of buildings, general structures, crane runway girders, monorails, roadway bridges, railway bridges and pedestrian bridges. Its application includes complete structures, individual members and manufactured components subject to seismic actions or to fatigue.

Basis

The CoP was developed based on the following inputs:

- The fabrication and erection sections from the existing AS 4100, which will be deprecated after AS/NZS 5131 is published.
- A review of the relevant sections of NZS 3404.
- A broad philosophical basis in the Euronorm EN 1090-2 Execution of steel structures and aluminium structures – Part 2 Technical requirements for steel structures (Ref. 4). EN 1090 provides a rational fit-for-purpose risk based approach utilizing the concept of ‘execution classes’, from which the CoP derives the similar ‘construction category’. The construction category is explained further in the following section.
- Review of a range of aligned publications from Europe, North America, Canada and New Zealand.

Relationship to AS 4100 and NZS 3404

The development of the CoP was based on two overarching drivers:

1. Bringing the relevant components of our existing Standards suite together with current best practice to provide a statement of requirements with sufficient technical foundation to support robust product compliance and conformity assessment. In this regard there is a significant component of the document that aligns with existing requirements in current Standards, augmented where necessary to reflect current best practice.
2. To provide a transparent and definitive context for product conformity, which could then act as the foundation for robust conformity assessment and the basis for certification or compliance schemes.

The requirements contained in item 2 above are, in general, additional to or an augmentation of what is found in our existing Standards suite and are addressed in the CoP via a number of sections:

- The 'Construction Category' concept, detailed in Appendix C of the CoP. The assignment of a construction category to a structure or parts of a structure is a risk based fit-for-purpose approach. The differences between construction categories are largely around the extent of traceability and welding quality management. The construction category concept is discussed in greater detail in a subsequent section.
- Section 12 'Inspection and Testing' which provides clear requirements for inspection and testing of materials and components, welding, fasteners including mechanical and chemical anchors, surface treatment including painting and galvanizing and erection. These requirements are, in some cases, related to the Construction Category.
- Section 13 'Non-conformities' which addresses the identification and treatment of non-conformities for fabricated items and erected items.
- Appendix D 'Checklist for the content of a quality plan' provides informative guidance on matters recommended to be included in a project-specific quality plan for the construction of a steel structure.

The CoP (and AS/NZS 5131) is designed to form the basis for improved steelwork procurement outcomes. After publication of AS/NZS 5131 and as a next stage, it is envisaged there will be a need to align the respective design Standards, AS 4100 and NZS 3404, with the philosophical and technical basis of AS/NZS 5131, in particular the construction category concept. The joint development of AS/NZS 5131 may also help facilitate closer alignment of our respective design Standards, or a joint Standard in due course.

The 'Construction Category' concept

Background

The selection of a 'Construction Category' as applicable to a steel structure or components therein is a risk-based approach intended to provide consistency with the reliability-based philosophy and principles on which the fundamental load assessment (AS 1170 series) and structural design (AS 4100 and AS 5100) are based. The approach translates into a fit-for-purpose assessment that ensures the fabrication and erection of steel structures is based on a rational risk assessment, recognising the importance of the structure, what maintenance and inspection measures will be in place, the consequences of failure and the complexity of the fabrication and erection.

AS/NZS 1170 series (Ref. 5) is based on the philosophy and principles set out in ISO 2394 entitled 'General principles on reliability for structures' (Ref. 6), which provides a common basis for defining design rules relevant to the construction and use of a wide variety of buildings, bridges and civil engineering works. It includes methods for establishing and calibrating limit states design standards. The required reliability is related to the expected social and economic consequences from a design failure. Significantly, the required reliability may be achieved through suitable combinations of the following measures:

a) Measures related to design, such as choice of values of action variables, reliability of design calculations, accuracy of mechanical models used and the like.

b) Measures relating to quality assurance, to reduce the risk of hazards from gross human errors, design and execution (fabrication and erection).

The Construction Category classification provides a fit-for-purpose level of quality assurance to reduce risks associated with fabrication and erection. It achieves this through reliability differentiation from inspection and supervision levels.

AS/NZS 1170.0 references the 'importance level' for the building or structure as the primary indicator of the relative risk to life in extreme events (consequences of failure), and is based on the philosophy and principles set out in ISO 2394. For Australia, the importance level is defined in the Building Code of Australia (BCA) (Ref. 7). For New Zealand, Section 3 of AS/NZS1170.0 is utilised.

The 'importance level' is one component of the risk assessment that provides the basis for the evaluation of the Construction Category. Other components reflect the type of loading the structure is subjected to and the complexity of the fabrication. Taken together, these components formalise the reliability differentiation that is included in ISO 2394 and is implicit within AS/NZS 1170.0.

Definition

The determination of the Construction Category is undertaken in the design phase, based on the known loading for the structure, the intended function, the maintenance and inspection measures will be in place, the elements that comprise the structure and the expected complexity of fabrication or erection for the structure. The result is the assignment of one of four possible construction categories, CC1, CC2, CC3 or CC4 to either the complete structure or parts thereof, reflecting the level of risk associated with the fabrication or erection of that structure or part or its ongoing operation.

The concept is illustrated in Fig. 1, which also provides some indication of the type of structures that might fall into each category. The assessment of the appropriate construction category is discussed in the following sections.

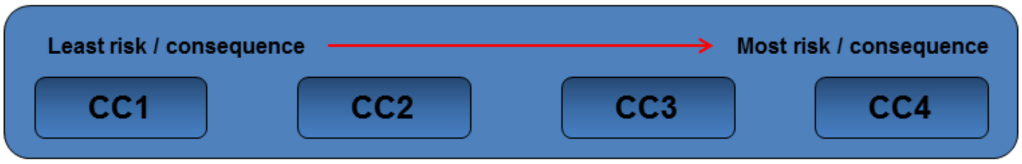

Figure 1 The Construction Category concept

Guidance on Determination of the Construction Category

Introduction

This section provides guidance on the choice of the Construction Category relevant to the building or structure as a whole or to components of the structure where it is appropriate to assign different Construction Categories to different components.

NOTE: The process outlined for defining a Construction Category is consistent with the philosophy and principles on which AS/NZS 1170.0 is based and intended to provide a level of consistency between the basis for the design assumptions and those for the ensuing fabrication and erection for the building or structure.

Input factors determining the choice of Construction Category

The selection of the Construction Category defined in Section 2.4 is based on three input variables:

- The 'Importance Factor' which reflects the risk to life and consequences of failure.
- The 'Service Category', which reflects the actions to which the structure and its parts are likely to be exposed, such as earthquake or fatigue.
- The 'Fabrication Category', which reflects the complexity of the fabrication of the structure and its components.

These three input variables are described in the following sections.

Importance Factor

The Building Code of Australia (BCA) (for Australia) or Section 3 of AS/NZS 1170.0 (for New Zealand) defines the ‘importance levels’ for different structure types. Importance levels are designated from 1 (representing the lowest risk to life) up to 4 (representing the highest risk to life and/or post disaster recover functions). An additional importance level of 5 is designated for New Zealand only, representing special structures outside the scope of the Standard.

The importance factor is the equivalent of the importance level defined in the BCA or AS/NZS 1170.0.

NOTE: There is no provision in the BCA or in AS/NZS 1170.0 for designating parts of a structure with different importance levels.

Service Category

The selected Service Category reflects the uncertainty in the exposure of the structure to actions that may expose flaws in the structure during use. The service category is selected based on Table 1.

Table 1. Suggested criteria for Service Categories

Service Category	**Criteria**
SC1	• Structures or components designed for predominantly quasi-static actions only. Examples include typical multi-level buildings, warehouses and storage facilities; or, • Structures and components designed for seismic actions in areas of low seismic activity; or, • Structures and components designed for fatigue actions from cranes; or,
SC2	• Structures and components with members and connections designated for fatigue assessment according to Section 11 of AS 4100 or NZS 3404. Examples include road and railway bridges, cranes and immediate supporting structure (where supported off the building or structure) and structures susceptible to vibrations produced by wind, crowds or vibrating machinery; or, • Structures and connections designed for seismic actions in regions of medium or high seismic activity.

The structure or part of the structure can contain components or structural details that are categorised under different Service Categories.

NOTE: The Service Category is also used to assess the recommended extent of non-destructive examination (NDE) of welds (see Section 12.6.10 of the ASI Code of Practice) and therefore should be nominated in the Construction Specification.

Fabrication Category

The selected Fabrication Category reflects the complexity of the fabrication inherent in the structure or parts of the structure. The Fabrication Category is selected based on Table 2.

Table 2. Suggested criteria for Fabrication Categories

Fabrication Category	Criteria
FC1	• Non-welded components manufactured from any steel grade products; or, • Welded components manufactured from steel grade components less than or equal to Grade 450.
FC2	• Welded components manufactured from steel above Grade 450; or, • Site welded components essential for structural integrity; or, • Components receiving thermic treatment during manufacturing; or, • Components of CHS trusses requiring end profile cuts.

The structure or part of the structure can contain components or structural details that are categorised under different Fabrication Categories.

Determination of the Construction Category

The Construction Category may be determined by the following process:

1. Selection of the building or structure importance level, from either the Building Code of Australia (for projects in Australia) or Section 3 of AS/NZS 1170.0 (for projects in New Zealand). For buildings or structures not covered by the BCA, a similar approach should be adopted.
2. Selection of the Service Category (refer Table 1)
3. Selection of the Fabrication Category (refer Table 2)
4. Determination of the Construction Category from Table 3.

Table 3. Risk matrix for determination of the Construction Category

Importance level		**1**		**2**		**3**		**4**	
Service Categories		**SC1**	**SC2**	**SC1**	**SC2**	**SC1**	**SC2**	**SC1**	**SC2**
Fabrication Categories	**FC1**	CC1	CC3	CC2	CC3	CC3	CC3	CC3	CC3
	FC2	CC2	CC3	CC2	CC3	CC3	CC3	CC3	CC4

NOTE: The determination of the Construction Category is the responsibility of the designer, taking national provisions, published guidance from industry associations and the relevant Work, Health and Safety regulations and Codes of Practice into account.

Figure 2 illustrates the derivation of the most common Construction Category (CC = 2) in Australia from the common selections of Importance Level (IL = 2), Service Category (SC = 1) and Fabrication Category (FC = 1) and provides a high level view of the types of structures that might fall into the different Construction Categories. In New Zealand, the requirement for SC2 driven by earthquake considerations would result in CC3 as the common Construction Category.

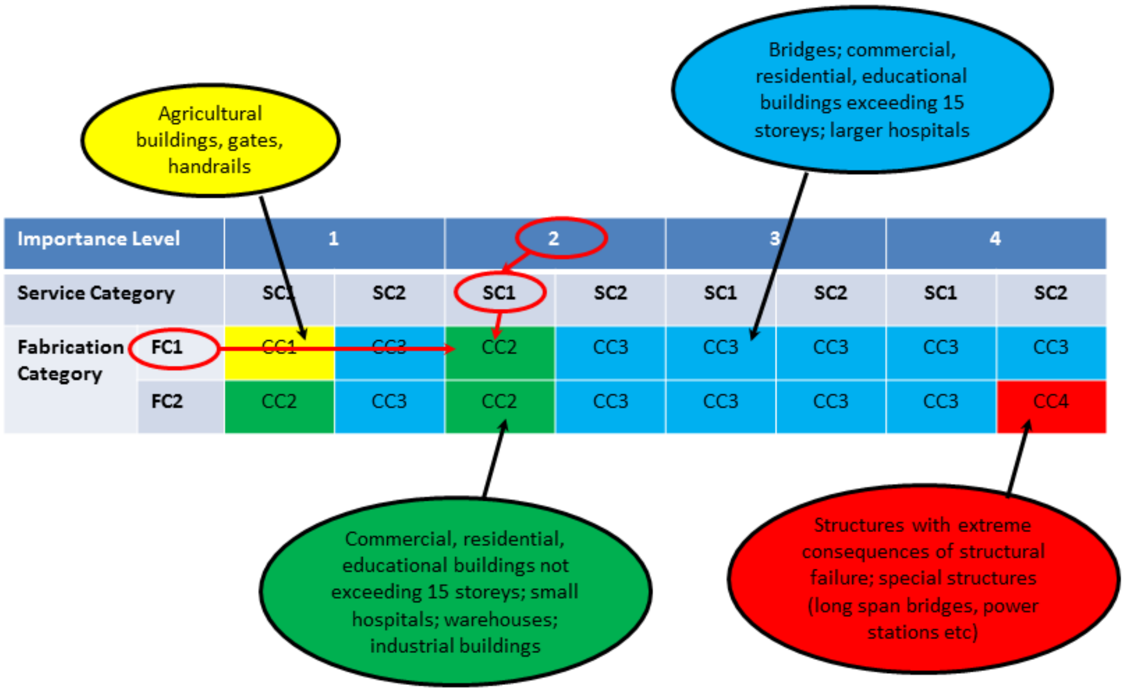

Figure 2 Determination of the Construction Category CC2

Generic classification of structure types

In general, each structure should be classified into a construction category based on the project specific aspects and how they affect the three input factors used to calculate the Construction Category.

However, in practice, the range of variation for the input factors for many structure types is quite limited, which then allows some generalisations to be made and 'typical' structures classified into one of the four Construction Categories. In time, these classifications of typical structures will become 'accepted practice' and it is only unusual or exceptional project-specific circumstances that would result in a structure being classified in a different Construction Category.

A generic classification of typical structures is shown in Table 4, based on Australian conditions.

It is important to note that the guidance on determination of the Construction Category provided in Appendix C of the Code of Practice is informative. Whilst many structures will naturally fall into one or other of the Construction Categories, and hence we can reasonably suggest the classification of typical structures as provided in the table, there will always be a need for the engineer, as the professional involved in design of the structure who best understands the functional aspects and design basis, to assess the input parameters and provide a judgement as to the most appropriate Construction Category.

Not all structures can be classified in a straightforward manner for the ’importance factor’ based on the BCA and guidance. Special purpose and important structures, such as road and rail bridges, would generally be designed for fatigue and the relevant authorities would require these to be fabricated to Construction Category 3 as a minimum. Similarly, road signage and structures over road and rail lines might be classified as Construction Category 3 by the authorities.

This highlights the important point that for certain structure types, the relevant professional authority, or even the client, may require the structure to be fabricated to a specific Construction Category. Provided that category is <u>not less than what the engineer would rationally judge</u>, the mandating of a specific Construction Category by a professional authority or client is possible. However, in the interests of fit-for-purpose, rational, cost-effective solutions, specifying higher Construction Categories than required is not encouraged.

Table 4. Generic classification of structure types

Construction Category	Typical structures
1	• Gates, handrails, agricultural buildings (no people congregating), greenhouses
2	• Commercial, residential, educational buildings, not exceeding 15 storeys • Hospitals and healthcare facilities with a capacity less than 50 residents and not having surgery or emergency treatment facilities • Warehouses • Industrial buildings
3	• Bridges • Structures or sub-structures designed for fatigue actions • Commercial, residential, educational buildings of 15 storeys or greater • Hospitals with surgery or emergency treatment facilities • Healthcare facilities having a capacity of more than 50 residents • As specifically required in authority construction specifications
4	• Structures with extreme consequences of structural failure • As required by national or project-specific provisions • Special structures (long span bridges, power stations etc.)

Implementation Guide for Design Engineers

Engineering context and responsibilities

As the principal technical authority in the project supply chain, the design engineer has certain responsibilities under the CoP/Standard. These responsibilities include:

1. Nominating the ‘Construction Category’ for a particular structure or component therein. In most instances this will be obvious and already established through industry best practice and guidance from the ASI, SCNZ/HERA and/or other professional bodies. Guidance on suggested generic classifications is provided in other sections of this discussion paper.

2. Ensuring that, for the scope of work for which the design engineer is contracted, the construction specification has suitable wording to reference the CoP/Standard and the necessary project-specific detail selections. In most cases, the scope already covered in the CoP/Standard will allow project specifications to be much simpler and more ‘standardised’.

3. Checking the submittals for materials and fabrication to confirm conformity. If the fabricator is certified, much of this is already pre-checked and should be readily available.

4. Providing project-specific certification as is currently required.

Required and optional additional information

Context

On a specific project, there is a range of additional information, both required and optional, that will need to be defined, whether on the drawing notes or in the specifications for the project. The scope of information required is tabulated in Appendix B of the CoP. Examples are provided in the following sections.

Required additional information

Appendix B.1 of the CoP lists a range of information that is required to be specified in order to support the intent of the CoP. Appendix B.1 is designed as a form of checklist to help project stakeholders ensure sufficient project-specific information has been defined.

A sample of the type of information in Appendix B.1 is shown in Table 5. The complete range of information is provided in ASI Tech Note TN-011 (Ref. 8).

Table 5. Sample of required additional information

Clause	Additional information required
4 Specification and documentation	
4.1 Construction specification	
4.1.1	Any special requirements for the fabrication or erection of the works
4.1.2	Construction Category for the structure or parts thereof Service Category for the structure or parts thereof
4.4 Constructors' documentation	
4.4.1	Various matters to be addressed in the quality documentation
4.4.3	Work method statements for safety of the works during erection
5 Materials	
5.3 Structural steels	
5.3.1	Grades, qualities and, if appropriate, coating weights and finishes for steel products
5.3.3	Additional requirements for surface finish, restrictions on surface imperfections or repair of surface defects by grinding
5.3.4	Special or additional requirements for seismic or fracture critical applications Any special requirements for processing before delivery Method of test where ultrasonic testing is required
5 .5 Mechanical fasteners	
5.5.1	Surface finish required
5.5.3	Property classes of bolts and nuts for other than tensioned applications
5.5.7	Grade or property class for foundation bolts
5.5.10	Grade and type of fasteners for thin gauge components
5.5.11	Grade, type and any tests required for special fasteners
5.6	Grade and type of mechanical or chemical anchors, together with any tests required
5.7	Grade and type for studs and shear connectors, together with any tests required
5.8	Grade and type for explosive fasteners
5.9	Grade and type for grouting materials

Notes:

1. *The clause numbers reference the ASI/SCNZ Code of Practice.*
2. *This table represents an illustrative selection of the full set of relevant requirements from the body of the Code of Practice. Users should reference the Code of Practice for the current up-to-date implementation.*

Optional additional information

Appendix B.2 of the CoP lists a range of information that is optionally to be specified in order to support the intent of the CoP. Appendix B.2 is designed as a form of checklist to help project stakeholders ensure sufficient project-specific information has been defined.

A sample of the type of information in Appendix B.2 is shown in Table 6. The complete range of information is provided in ASI Tech Note TN-011 (Ref. 8).

Table 6. Sample of optional information to be selected

Clause	Option(s) to be selected
4 Specification and documentation	
4.4 Constructors' documentation	
4.4.2	If a quality plan for execution of the works is required
5 Materials	
5.2	If traceability for each product separately is required
5.3 Structural steels	
5.3.3	If imperfections are to be repaired
5.3.4	If through thickness tensile testing is required If ultrasonic testing in the vicinity of critical welded details is required If any special processing is required prior to delivery
5 .5 Mechanical fasteners	
5.5.5	If direct tension indicators are to be used
5.5.8	If locking devices are to be used
5.5.11	If any tests are required for special fasteners
5.6	If any tests are required for mechanical or chemical anchors
5.7	If any tests are required for studs and shear connectors
6 Preparation, fabrication and assembly	
6.9	If a method for the assembly check is specified
7 Welding	
7.1	If additional requirements for welding are specified
7.2 Welding plan	
7.2.1	If additional items are included in the welding plan
7.4	If impact tests are required If welding production testing is required
7.5 Qualification of welding personnel	
7.5.1	If an alternative welder qualification is required
7.7 Weld types	
7.7.2	If run-on/run-off tabs are to be used If a flush surface is specified for butt welds
7.9 Execution of welding	
7.9.6	If temporary attachments are permitted If temporary attachments can remain in place
7.9.7	Areas where arc strikes are not required to be treated
7.9.11	If additional dressing of butt welds is required

Notes:

1. *The clause numbers reference the ASI Code of Practice*
2. *This table represents an illustrative selection of the full set of relevant requirements from the body of the Code of Practice. Users should reference the Code of Practice for the current up-to-date implementation.*

Responsibilities to be assigned

Appendix B.3 of the Code of Practice outlines requirements where the responsibility for actioning these on a project basis is not defined and will depend on the contractual arrangements. Table 7 lists an illustrative sample of these.

Table 7. Sample list of responsibilities to be assigned

Clause	Responsibility to be assigned
4 Specifications and documentation	
4.1 Construction specification	
	Preparation of the Construction Specification
4.2 Use of Building Information Modelling	
4.2.1	Where required, preparation of the ‘Project BIM Brief’ or ‘BIM Management Plan’
4.3 Shop detailing documentation	
4.3.1	Preparation of the shop detailing documentation
4.3.5	Approval of shop detailer documentation
4.4 Constructors’ documentation	
4.4.1	Preparation of quality documentation
4.4.2	Preparation of quality plan
4.4.3	Preparation of safety documentation
4.4.4	Preparation of as-build documentation
8 Mechanical fastening	
8.1 General	
8.1.2	Preparation of quality documentation
8.1.3	Preparation of safety plan
8.1.4	Preparation of work method statements
8.8 Installation of mechanical and chemical anchors	
8.8.1	Selection of appropriate anchor type(s)
9 Surface treatment and corrosion protection	
9.2 Planning	
9.2.1	Preparation of quality documentation
9.2.2	Preparation of safety plan
9.2.3	Preparation of work method statements
9.9 Fabrication and welding considerations	
9.9.1	Finish of the steelwork to meet the requirements for coating life

Notes:

1. *The clause numbers reference the ASI Code of Practice*
2. *This table represents an illustrative selection of the full set of relevant requirements from the body of the Code of Practice. Users should reference the Code of Practice for the current up-to-date implementation.*

Third-party Fabricator Certification Schemes

The Code of Practice and upcoming AS/NZS 5131 provide a rigorous foundation for ‘best practice’ quality and safety outcomes aligned with community expectations. They in effect define what product conformity looks like, in this case the product being fabricated structural steelwork. However, the assessment of that conformity does not usually fall under the scope of application of our Standards suite. Stakeholders are therefore required to undertake conformity assessment, which may take either first-party, second-party or third-party forms.

Both ASI and SCNZ/HERA support third-party certification schemes as an appropriate and necessary approach in the current internationalized procurement environment. This approach supports the guidance provided by the APCC (Ref. 2).

ASI has put in place the National Structural Steelwork Compliance Scheme (NSSCS) (http://steel.org.au/key-issues/compliance/asi-in-compliance/), which has as its technical foundation the CoP (and AS/NZS 5131 when published) and is supported by certification of fabricators for competency to one of the Construction Categories in the CoP. Fabricator certification is undertaken by the independent certification organization Steelwork Compliance Australia (SCA) (http://www.scacompliance.com.au/).

In a similar fashion SCNZ/HERA have in place the Steel Fabrication Certification (SFC) Scheme (http://steelfabcert.co.nz/). Fabricators are certified to a Construction Category by HERA Certifications Ltd.

Whilst both the ASI and SCNZ/HERA Schemes are based on similar technical foundations, they are not identical. This is due to the different (building) regulatory environment in Australia and New Zealand and also some difference due to the influence of the environmental loading regime, in particular earthquake loading. The principle difference between the two schemes is the mandating of the weld quality management standard ISO 3834 in the SCNZ/HERA SFC scheme.

There are also differences in scope between the two schemes. The ASI NSSCS encompasses fabrication, coatings and erection whilst the SCNZ/HERA SFC scheme is limited to fabrication activities at this stage.

Conclusions

The construction product procurement environment is rapidly internationalizing and invariably the regulatory environment is playing catch-up. The Construction Category concept offers the industry a common approach to selecting the right level of quality and assurance controls needed to ensure the structure meets the engineer's design assumptions and the level of risk mitigation our community expects and that is inherent in our Standards suite and building regulation.

The need for robust certification and compliance schemes to ensure quality outcomes commensurate with our community expectations is more important than ever. Both ASI and SCNZ/HERA have addressed this need with third party schemes utilizing our Standards suite and specifically the upcoming AS/NZS 5131 as the technical foundation. It is now the turn of the steel stakeholders to understand and embrace these solutions as an industry, to demonstrate to the community that rational fit-for-purpose outcomes are being actioned.

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