Joint Accreditation System of Australia and New Zealand

Australian Technical Infrastructure Committee

ATIC Suite of Schemes

ATIC Scheme 10 -
Structural Steel Products - Conformity Assessment

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Authority to Issue

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Chief Executive
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Contents

(i) Foreword

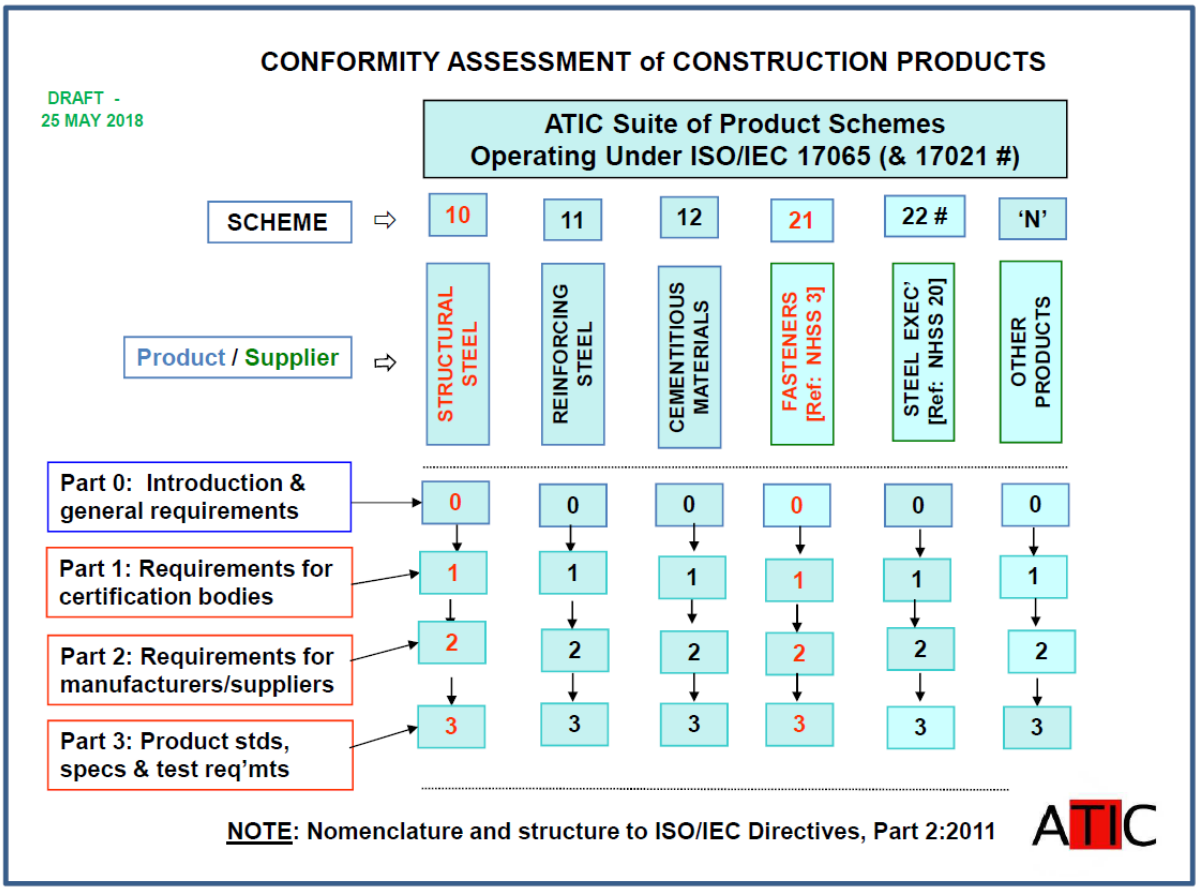
Australian Technical Infrastructure Committee (ATIC) is a national technical group of government agency representatives, which is progressively producing the 'ATIC Suite of Schemes' for conformity assessment of strategic products used in public infrastructure, as shown in Diagram 1. These will complement the standard technical specification included in ATIC-SPEC and also those in the Water Services Specification (WS-SPEC).

JAS-ANZ provides accreditation services to certification and inspection organizations under the direction of the Australian and New Zealand Governments.

Public Works Advisory (PWA), on behalf of the NSW Government, supports local and state agencies to deliver critical infrastructure initiatives, including construction procurement. Hence it is well placed to provide the Secretariat for ATIC.

Governance is achieved through the ATIC Terms of Reference.

Diagram 1 – The Proposed ATIC Suite of Schemes



(ii) Transition Policy

Existing Certificates of Conformity: Certificates current at the implementation of the Scheme shall be transitioned by the CB to the 2nd edition of this scheme prior to 7th July 2019.

Existing Applications for Certification: From implementation of the Scheme, existing applications for certification shall continue to be assessed by the CB in accordance with the requirements of the 1st Edition of this Scheme. However, within 12 months from the date of issue of the Certificate(s) of Conformity, the product(s) shall be assessed to the requirements of the 2nd Edition of this Scheme.

New Applications for Certification: From implementation of the 2nd Edition of this Scheme, accredited CBs shall process new applications for certification in accordance with the prescribed requirements of this Scheme.

Part 0 Introduction and general requirements

1 Scope

1.1 Introduction

'ATIC Scheme 10' (this Scheme), is applicable for the manufacture and supply of structural steel products, for application in buildings, civil works, rail and similar infrastructure, either loose or incorporated in fabrications or other finished products. The 1st Edition covered AS/NZS 1163, AS/NZS 3678 and AS/NZS 3679 Parts 1 & 2, which has been extended in this 2nd Edition to also cover AS/NZS 1594.

Consistent with current trends, the requirement for the manufacturer to have a certified quality system to ISO 9001, has been replaced by the more product specific requirement of having a quality plan to ISO 10005. Also to align with ISO/IEC Directives Part 2:2011, 'Sections' have been replaced with 'Parts'. Part 1 now has the new Appendices A and B, and Part 2 has a new Appendix A for the quality plan.

1.2 Document currency

To ensure that the current version of the document is being used, visit the JAS-ANZ website (*www.jas-anz.org/register*) from where the document can be freely downloaded, and information on relevant CBs can also be obtained.

2 Normative references

The following general references relate to all parts of this document, and other specific technical references are listed in Part 3, Clause 2. Where the issue date is omitted, the latest versions of relevant Standards shall be adopted. Also for clarity in the text, the prefixes 'AS/NZS', 'AS' and issue dates are omitted.

AS/NZS 1163	Cold-formed structural steel hollow sections
AS/NZS 1594	Hot-rolled steel flat products
AS/NZS 3678	Structural steel – Hot-rolled plates, floor-plates and slabs
AS/NZS 3679 AS/NZS 3679.1 AS/NZS 3679.2	Structural steel Part 1: Hot-rolled bars and sections Part 2: Welded I sections
ISO 9000 (AS/NZS)	Quality management systems – Fundamentals and vocabulary
ISO 9001:2015 (AS/NZS)	Quality management systems – Requirements
ISO 10005:2018 (AS/NZS)	Quality management systems – Guidelines for quality plans
ISO 17000 (AS)	Conformity assessment – vocabulary and general principles
ISO/IEC 17020 (AS/NZS)	General criteria for the operation of various types of bodies performing inspection
ISO/IEC 17021-1:2015 (AS/NZS)	Conformity assessment – Requirements for bodies providing audit and certification of management systems - Requirements
ISO/IEC 17025 (AS)	General requirements for the competence of testing and calibration laboratories
ISO/IEC 17043	Conformity assessment – General requirements for proficiency testing

ISO/IEC 17065:2012 (AS/NZS)	Conformity assessment – Requirements for bodies certifying products, processes, and services
ISO/IEC 17067 (AS/NZS)	Conformity assessment – Fundamentals of product certification and guidelines for product certification schemes
ISO 19011 (AS/NZS)	Guidelines for quality and/or environmental management system auditing

3 Terms and definitions

General

For the purposes of this Scheme, the terms and definitions given in ISO/IEC 17000, ISO/IEC 17065 and ISO/IEC 17067 apply.

The term **'should'** is used in this Scheme to indicate recognised means of meeting the requirements. Such requirements can meet these in an equivalent way, provided this can be demonstrated to the certification body (CB) and/or the accreditation body.

The term **'shall'** is used in this Scheme to indicate those provisions which are mandatory.

divisions of certification

See Part 2, Tables 2.1.

renewal

The reissuing of certification after expiry on the basis of a formalised desktop review of compliance with current requirements

Australian distributor ('the Organization')

An entity (corporation or otherwise) based in Australia, including but not limited to an Australian manufacturer, overseas manufacturer's local representative, wholesaler, importer, primary distributor (stockist) or contractor, which has the responsibility for verifying that the properties comply with this Scheme.

facility (factory)

Place or amenity provided for the particular purpose of manufacturing structural steel products. Can be a building or group of buildings where structural steel products are manufactured.

site

A group of facilities that share a common management, located in geographical proximity.

production line

An arrangement in a facility in which structural steel products manufactured are passed through a set linear sequence of mechanical or manual operations.

major nonconformity

A deficiency where the product does not conform to the product Standard, or a situation that raises significant doubt about the ability of the client's management system to consistently produce conforming product.

A major nonconformity may lead to suspension or withdrawal of certification. The CB shall require an agreed corrective action plan that may include a range of responses depending on the nature of the deficiency and the distribution of the nonconforming product.

minor nonconformity

A deficiency in the application of the management system as prescribed by this scheme. Any deficiency that is not adequately addressed may lead to a major nonconformity. The CB shall require an agreed corrective action plan and timetable for resolution.

Part 1 Requirements for certification bodies (CBs)

1 Scope

ISO/IEC 17065 is the International Standard that sets down the requirements for bodies certifying products, processes and services.

The major headings in the ATIC Scheme, excluding the Appendix headings, have been reproduced from ISO/IEC 17065.

The ATIC Scheme supplements, but does not diminish the requirements of ISO/IEC 17065. The requirements of ISO/IEC 1*7065 are not duplicated in this document or its subsequent parts and shall be referred to separately.*

2 Normative references

See Part 0, Clause 2.

3 Terms and definitions

See Part 0, Clause 3.

4 General requirements

4.1 Legal and contractual matters

No additional requirements

4.1.2 Certification agreement

4.1.2.1 *No additional requiremens*

4.1.2.2 The certification agreement shall require the client to ensure that laboratories participate in proficiency testing and provide evidence of satisfactory performance in accordance with this scheme.

Where a major nonconformity is identified, the CB shall require the client to provide, an agreed corrective action plan and timetable for implementation as soon as practicable. This plan shall ensure the client takes all necessary steps to prevent the supply of nonconforming product and, to the extent practicable and commensurate with the risks, immediately notify significantly affected parties.

Where a minor nonconformity is identified, the CB shall require the client to provide within 30 days, an agreed corrective action plan and timetable for implementation.

4.1.3 Use of license, certificates and marks of conformity

No additional requirements

4.2 Management of impartiality

No additional requirements.

4.3 Liability and financing

No additional requirements.

4.4 Non-discriminatory conditions

No additional requirements.

4.5 Confidentiality

No additional requirements.

4.6 Publicly available information

No additional requirements.

5 Structural requirements

5.1 Organizational structure and top management

No additional requirements

5.2 Mechanism for safeguarding impartiality

No additional requirements.

6 Resource requirements

6.1 Certification body personnel

6.1.1 General

No additional requirements

6.1.2 Management of competence for personnel involved in the certification process

6.1.2.1 Persons performing certification functions shall have the knowledge and experience indicated by Part 1, Appendix B.

All auditors shall have:

a) tertiary qualifications in a relevant technical field and

i. at least five years of relevant technical experience in the steel mill environment; or

ii. at least ten years of relevant technical experience in the steel product manufacturing environment;

b) the QMS knowledge and skills detailed in ISO 19011; and

c) the personal attributes detailed in ISO 19011.

At least one person on the audit team shall also be a technical expert having the demonstrated ability to interpret test results directly relevant to the scope of the audit.

The witnessing of laboratory test activities shall only be performed by a technical expert that has:

a) demonstrated knowledge of the application of ISO/IEC 17025 including at least five years active involvement in product evaluation of similar products in a laboratory; and

b) the demonstrated ability to interpret test results directly relevant to the scope of the audit.

The person or persons conducting the review must have sufficient knowledge and experience to understand:

a) the report and findings;

b) the accumulative risk arising from multiple findings;

c) the requirements of the scheme and Standards; and

d) the test methods and test data.

6.1.2.2 *No additional requirements*

6.1.3 Contract with personnel

No additional requirements

6.2 Resources for evaluation

No additional requirements

7 Process requirements

7.1 General

7.1.1 This Scheme requires the CB to:

a) Review the manufacturing process and system documentation used to establish compliance with this Scheme.

b) Conduct a review of system records and test evidence used to demonstrate compliance with this Scheme.

c) Commission independent testing to the extent required by this Scheme.

d) Review internal and external quality audit reports to evaluate the adequacy of internal controls over the process and product.

e) Perform technical reviews of long term quality test data.

f) Evaluate interpretations of test results.

g) Conduct an annual audit of the manufacturing facilities in accordance with this Scheme.

h) Issue the certificate, with a validity of five years, from the date of the initial certification decision.

i) No sooner than three months prior to certificate expiry,

- conduct a desktop review of the then-current manufacturing process and system documentation;
- conduct a desktop review of audit history accumulated during the period of certification to determine whether any nonconformities have not been closed;
- conduct a desktop review of the cumulative reviews of long term quality test data to establish evidence of manufacturing process stability during the period of validity of the certificate; and,
- review the Standards to which the product is certified to establish, where Standards have been amended or revised (see Part 3 of this Scheme), the extent of product testing required to demonstrate conformity with the current requirements.

7.2 Application

7.2.1 The CB shall require the client to:

a) supply information about the production facilities and the products for which certification is sought, in accordance with Part 2, Clause 4.1 and 4.2.

b) supply a copy of its documented policies and procedures, which as a minimum must cover the production process controls and management system associated with production of the product;

c) Supply a copy of its quality plan (refer Part 2, Clause 4.3)

d) state which Standard(s) the product is to be certified to;

e) state whether the product has been tested against the relevant Standard(s) and if so, supply copies of test reports;

f) state whether production or prototype sampling is undertaken. If a prototype, describe the production schedule.

7.3 Application review

No additional requirements

7.4 Evaluation

7.4.1 Evaluation is to be performed by the CB, under its responsibility. Outsourcing of evaluation activities is permitted but shall be managed in accordance with ISO/IEC 17065, Clause 6.2.2.

The scope of the evaluation shall be in accordance with Table 1.1 and Part 2, Appendix A. The CB shall conduct on-site audits of the factories manufacturing product applied for in the divisions of certification. All factories and all production lines producing product to the range of certification applied for are to be included within the scope of the on-site audit.

The evaluation plan shall include:

a) the identification of the products that are to be selected for verification testing, and associated sampling requirements and frequency in accordance with Clause 7.4.4;

b) the specification of the type of tests to be applied to the samples;

c) the requirements for witnessing of sampling and testing;

d) an audit plan based on Table 1.1 as applicable.

The quality plan of Part 2, Appendix A to ISO 10005, is mandatory.

Note: In planning on-site evaluation activity, the CB should take cognizance of ISO 10005, Clause 7.2.

7.4.2 The CB shall inform the client of the names of the members of the audit team, with sufficient notice to appeal against the appointment of any team member.

7.4.3 *No additional requirements*

7.4.4 If the manufacturer holds QMS certification to ISO 9001, issued by a CB accredited by an International Accreditation Forum (IAF) member that is also a signatory to the Multilateral Recognition Arrangement (MRA) with a main scope of ISO/IEC 17021-1, the CB shall review the outcomes for each facility as follows:

- Confirm that the scope of ISO 9001 certification includes the sites and activities relevant to the scope of the product certification, and evaluate the requirements of Table 1.1, Items 1, 8, 10, 11, 14, 15, 17, 19 and 20.
- As the CB may require, review the establishment and implementation of support processes nominated in the quality plan.

If the manufacturer is not certified to ISO 9001, the CB shall audit the implementation of the quality plan and evaluate the requirements of Table 1.1, Items 2 to 20 inclusive.

The scope of the initial audit shall be in accordance with Table 1.1 and shall include:

a) all factories manufacturing product within the scope of certification, and covering all production lines used to produce product within the scope of certification;

b) evidence of conformity with all the requirements of this Scheme within the scope of the application;

c) links between the requirements of the Standard(s) and the client's policies, performance objectives and targets (consistent with the expectations of the Standard(s)), legal and regulatory requirements, responsibilities, competence of personnel, operations, procedures, performance data and internal audit findings and conclusions.

7.4.4.1 Audits and the reports thereof shall comply with ISO/IEC 17021-1, Clause 9.4. In addition, during the closing meeting the audit team shall:

a) if applicable, provide the client with documented major nonconformities and nonconformities, explanatory comments, and the close out dates;

b) explain the requirements for surveillance audits; and,

c) explain the requirements for long-term quality monitoring.

7.4.4.2 For each test required by the product Standard, a minimum of three samples of the product shall be taken by the CB. The samples shall:

a) be taken in accordance with the Standard;

b) be taken at random and representative of the product production;

c) allow for product traceable information to be permanently marked on each sample;

d) two samples are for testing by the manufacturer and the CB;

e) one sample is retained for possible dispute resolution.

7.4.4.3 Verification Testing: Samples selected for testing by the CB, Clause 7.4.4.2, shall be tested by a laboratory independent of the manufacturer in accordance with Table 1.1, Item 19. The laboratory shall be accredited by an accreditation body that is a signatory to the ILAC MRA with a scope of testing that is included within the scope of accreditation.

7.4.4.4 Validation of the manufacturer's internal testing facilities: Test results obtained for the samples selected for verification testing by the CB shall be compared by the CB to the results of testing performed by the manufacturer's laboratory in accordance with Table 1.1, Item 20. The conclusion shall be used by the CB to judge the level of confidence in the accuracy of testing performed by the manufacturer.

Table 1.1: Scope of the evaluation and quarterly reporting

Items	Initial audit	Surveillance	Quarterly reporting	Variation [Clause 7.10]
(1) Review QMS audit & outcomes	●	●	--	--
(2) Development of a quality plan	●	--	--	--
(3) Content of the quality plan, scope, inputs objectives	●	●	--	--
(4) Quality plan responsibilities	●	●	--	--
(5) Control of documented information	●	●	--	--
(6) Resources	●	●	--	--
(7) Customers & other interested parties communication	●	●	--	--
(8) Changes to: manufacturing process & equipment; monitoring & measurement resources; significant revision to the quality plan & process / product design	--	●	--	●
(9) Externally provided processes, products & services	●	●	--	--
(10) Production and service provision	●	●	--	--
(11) Identification & traceability	●	●	--	--
(12) Property belonging to customers or external providers	●	●	--	--
(13) Preservation of outputs	●	●	--	--
(14) Control of nonconforming outputs, critical quality elements (nonconformities, customer complaints & corrective action)	●	●	--	--
(15) Product inspection & testing	●	●	--	--
(16) Audits - internal	●	●	--	--
(17) Monitoring & measurement ~~of test data~~	●	●	●	--
(18) Implementation & monitoring of the quality plan	●	●	--	--
(19) Verification testing	●	--	--	●
(20) Validation testing of the manufacturer's testing facilities	●	●	--	--

Note: ● = Applicability of each steel product and compliance with Part 2, Appendix A.

7.4.5 to 7.4.8 *No additional requirements*

7.4.9 The CB shall prepare a summary report covering all evaluation activities conducted to assess conformity of the product with the relevant Standards and the manufacturer's management system with the requirements of this Scheme, the adequacy of the manufacturer's testing and inspection regime and the accuracy of the manufacturer's test facilities. The report shall include:

a) a brief description of the client;

b) identification of the product;

c) reference to current issue of the manufacturer's quality plan

d) an executive summary of the overall findings (conclusions) of the on-site audit, including comments on the effectiveness of the client's production process controls and management system associated with production, and a summary of major nonconformities and minor nonconformities identified during the audit, including evidence of close-out;

f) details of the testing carried out and the level of confidence in the accuracy of testing carried out by the manufacturer;

g) details of CB personnel involved and equipment used to provide traceability of the results;

h) results of the evaluation activities in sufficient detail to verify conformity (or nonconformity):

- Information on fulfilment of the specified requirements from the data supplied for the inspection and testing review.
- Copy of the finished product inspection and testing regime used by the manufacturer.
- Identification of any samples selected and tested.
- Result for all inspections and tests, including testing performed by the CB.
- Confirmation of the ILAC (MRA) member accreditation status of test laboratories including applicable scope of accreditation.

i) positive and negative observations as appropriate.

A separate summary report is to be provided for each facility

Where the manufacturer seeks renewal of certification, the CB shall prepare a renewal report for each facility following the desktop review addressing all matters specific in Part 1, Clause 7.1.1

7.5 Review

7.5.1 Renewal reports shall also be subject to review.

7.5.2 No additional requirements

7.6 Certification decision

7.6.1 The CB's procedures shall ensure that any major nonconformity is resolved as per Clause 4.1.2.2 before certification.

Where the decision relates to certification renewal, the certification decision is made on the basis of the renewal report.

7.6.2 to 7.6.6 *No additional requirements*

7.7 Certification documentation

7.7.1 Certificates shall additionally include the information provided in Part 1 Appendix A.

7.7.2 *No additional requirements*

7.7.3 *No additional requirements*

7.8 Directory of certified products

Valid certifications shall be uploaded onto the JAS-ANZ Register.

7.9 Surveillance

7.9.1 The CB shall maintain a surveillance programme that demonstrates how all the requirements of this Scheme are covered at least annually.

The CB shall promptly take appropriate action, which may include an extraordinary surveillance audit, if a written detailed complaint about a certified product is received from ATIC, or another customer, or where an additional surveillance activity is deemed necessary by the CB.

The CB shall require the client to submit quarterly test data for the products manufactured in that period to monitor long term quality conformance with the requirements of the Standard(s).

Annual surveillance audits shall include the items listed in Table 1.1 and:

a) a review of any changes to services, organisational structure or personnel;

b) a review of the effectiveness of process controls and management system;

c) confirmation that the relevant quality plan remains current and appropriate;

d) inspecting and testing a representative sample of certified products;

e) a review of cumulative results based on the inspection and test results submitted by the client to the CB at three monthly intervals;

f) a review of the effectiveness of responses to nonconformities identified during internal and external audits; and

g) use of marks and/or any other reference to certification.

Reports of surveillance or follow-up audits shall include:

a) close-out of each major nonconformity and minor nonconformity revealed previously;

b) any useful comparison with the results of previous audits.

7.9.2 *No additional requirements*

7.9.3 *Not applicable*

7.9.4 *Not applicable*

7.10 Changes affecting certification

7.10.1 ATIC will publish transition timetable for changes to requirements for certification in this Scheme.

7.10.2 *No additional requirements*

7.10.3 A scope extension audit will be required if significant changes occur.

7.11 Termination, reduction, suspension or withdrawal of certification

7.11.1 *No additional requirements*

7.11.2 *No additional requirements*

7.11.3 The CB shall immediately advise ATIC of suspension or withdrawal of certification.

7.11.4 *No additional requirements*

7.11.5 *No additional requirements*

7.12 Records

No additional requirements.

7.13 Complaints and appeals

No additional requirements.

8 Management system requirements

8.1 Options

No additional requirements.

8.2 General management system documentation (Option A)

No additional requirements.

8.3 Control of documents (Option A)

No additional requirements.

8.4 Control of records (Option A)

No additional requirements.

8.5 Management review (Option A)

No additional requirements.

8.5.1 General

No additional requirements.

8.5.2 Review inputs

No additional requirements.

8.5.3 Review outputs

No additional requirements.

8.6 Internal audits (Option A)

No additional requirements.

8.7 Corrective actions (Option A)

No additional requirements.

8.8 Preventive actions (Option A)

No additional requirements.

Appendix A:
Model Certificate Issued by CBs

A.1 General

Figure 1 is a model for the certification showing an example of a possible 'ATIC Scheme 10' certificate. The information provided in the model certificate shall be included in CB certificates within this Scheme.

Note: The format of this model 'Certificate of Conformity' is suggested only. It does not imply any specific layout or format, and is not intended to inhibit the house style of the CB

Figure 1: Model 'Certificate of Conformity'

[CB's Name / Logo]

CERTIFICATE OF CONFORMITY

[Organization's Name & Address]

'ATIC Scheme 10' –
Structural Steel Products - Conformity Assessment

[CB's Name] has evaluated the products listed in the Schedule attached to this certificate manufactured at the locations listed below, in accordance with 'ATIC Scheme 10' in respect of the Standard(s) and products described.

Locations covered by this certificate:

[Site 1- Address]		
[Site 2- Address]		
Certificate Number:	*[CB's Certificate Number]*	
Issue Date:	*[Date]*	
Renewal (expiry) Date:	*[Date]*	
	[Name & Title of Authorised CB Signatory]	
Signature:		

[CB's standard footer: Name / Logo / JAS-ANZ Symbol / ATIC Logo etc.]

Schedule of Structural Steel Products

[Full product description covered by the certificate(s), for example:]

[- Common names & applications (e.g.: Cold-formed structural steel hollow sections, Hot-rolled steel flat products, Structural steel – Hot-rolled plates, floor-plates and slabs, Hot-rolled bars and sections, Welded I sections)

- *Standards (e.g.: AS/NZS 1163, 1594, 3678, 3679.1, 3679.2)*
- *Components & markings*
- *Size & dimensional characteristics*
- *Property classes & mechanical characteristics*
- *Chemical composition*
- *Finish & coating*
- *Product markings for traceability]*

Note: To authenticate certificates refer to: JAS-ANZ Register & *[CB's website]*.

Appendix B:
Required Knowledge and Skills

B.1 General

Table B.1 specifies the knowledge and skills that a CB shall define for specific certification functions. "X" indicates that the CB shall define the criteria and depth of knowledge and skills. The knowledge and skill requirements specified in Table B1 (in brackets), are explained in more detail in ISO/IEC 17021-1:2015, Annex A.

Table B.1: Table of Knowledge and Skills

Knowledge and skills	Sales enquiries and fee proposals	Conducting the application review #	Preparation of evaluation plans	Auditing and leading the audit team	Evaluation of test results	Independent technical review	Making certification decisions
Knowledge of business management practices	--	--	--	X (see A.2.1)	--	--	X (see A.2.1)
Knowledge of audit principles, practices and techniques	--	--	--	X (see A.2.2)	--	X (see A.3.1)	X (see A.3.1)
Knowledge of specific management system Standards/normative documents including ISO 10005 and Part 2 Appendix A of this Scheme	--	X (see A.4.1)	--	X (see A.2.3)	--	X (see A.3.2)	X (see A.3.2)
Knowledge of CB's processes	X (see A.3.3)	X (see A.4.2)	X (see A.4.2)	X (see A.2.4)	X (see A.3.3)	-	X (see A.3.3)
Knowledge of client's business sector	X(see A.3.4)	X (see A.4.3)	X (see A.4.3)	X (see A.2.5)	--	X(see A.3.4)	X(see A.3.4)
Knowledge of client products, processes and organization	--	X (see A.4.4)	X (see A.4.4)	X (see A.2.6)	X (see A.3.4)	-	X (see A.2.6)
Language skills appropriate to all levels within the client organization	--	--	--	X (see A.2.7)	--	--	
Note-taking and report-writing skills	--	--	--	X (see A.2.8)	X (see A.2.8)	--	
Presentation skills	--	--	--	X (see A.2.9)	--	--	
Interviewing skills	--	--	--	X (see A.2.10)	--	--	
Audit-management skills	--	--	--	X (see A.2.11)	--	--	
Knowledge of product Standards	--	--	--	X	X	X	X
Knowledge of testing methodologies	--	--	--	X	X	X	--
Knowledge of steel production practices	--	--		X		X	

To determine audit team competence required, to select the audit team members, and to determine the audit time.

Appendix C:
Guidance for CB Audit Teams (Informative)

This informative appendix is provided to assist CBs for assessment of the quality plan or factory production control. The Tables in this appendix address the management of product, raw materials, manufacturing process and equipment by division of certification.

Also within the tables, the applicability of each steel product is identified with the symbol " ● ".

C.1 Raw material management

The items related to the quality, inspection and storing of raw materials are shown in Tables C.1.1 and C.1.2. If referenced each item to be applied in accordance with the respective provisions of the relevant Standard(s).

Table C.1.1: Raw material management of hot-rolled steels & welded I sections for structural purposes

Raw Material Items	Division of Steel Products				Quality of Raw Materials	Acceptance Inspection Methods	Storage
	Hot-rolled Plates & Floor plates to AS/NZS 3678	Hot-rolled Bars & Sections to AS/NZS 3679.1	Welded I Sections to AS/NZS 3679.2	Hot-rolled steel flat products to AS/NZS 1594			
1. Hot metal (liquid metal)	●	●	--	●	Chemical composition	Review the raw material items. For steel that is re-rolled, the appearance and dimensions of input steel to be visually confirmed by inspection. Other qualities may be checked by any of the following i) Any 'AS' or other standard as marked ii) Suppliers reports & test/inspection certificates iii) Where the long term stability of the supplier is confirmed, check the brand, model or batch and appearance. iv) Identification markings on the plate/coil/strip v) Records	The raw materials to be stored by category with distinct division of lots. Ingots, semi-finished products, plates, sheets & strips to have unique identification markings and measures to prevent damage (eg: handling, moisture, dust, temperature, chemicals, etc.) to the appearance, dimensions and mechanical properties of the product.
2. Ferrous scrap	●	●	--	●	Grade		
3. Ferroalloy	●	●	--	●	Chemical composition		
4. Ingot or semi-finished products	●	●	--	●	Chemical composition, appearance, shape, dimension, cross-sectional flaw of semi-finished steel		
5. Deoxidisers	●	●	--	●	Chemical composition		
6. Slag forming fluxes	●	●	--	●	Chemical composition		
7. Plate, coil & strips	--	--	●	--	Chemical composition, appearance & dimensions		
8. Cutting tips	--	--	●	--	Type, properties		
9. Gases	●	●	●	--			
10. Welding consumables	--	--	●	--			
Notes: - The raw materials to have the requirements specified.							

Table C.1.2: Raw material management of cold-formed steels for structural purposes

Raw Material Items	Division of Steel Products				Quality of Raw Materials	Acceptance Inspection Methods	Storage
	Cold-formed Hollow Sections to AS/NZS 1163						
1. Coils and/or strips: a) Chemistry, appearance, dimensions, mechanical properties b) Production process and attributes	• •				Chemical composition, appearance, and dimensions. Mechanical properties are optional	Review the raw material items. Other qualities may be checked by any of the following: i) Markings on the coil/strip from the supplier. ii) Supplier test certificates/ reports iii) Where the long term stability of the supplier is confirmed, check the brand and appearance, of lubricating agents & acids. iv) Records	The raw materials to be stored by category with distinct division of lots. Also check measures to prevent damage from moisture, dust, and chemicals to the appearance dimensions and mechanical properties of the product.
2. Original steel tubes: a) Chemistry, appearance, dimensions, mechanical properties b) Uniformity of zinc coating	• --				Chemical composition, appearance, dimensions and mechanical properties		
3. Lubrication agent	•				Type, properties		
4. Preventative rust agent	•				Type, properties		
5. Acids	•				Chemical composition and concentration		
6. Induction coil or contact tip	•				Material property, shape and dimensions		
Notes: - The raw materials listed above, to be included in the factory production manual for each product category and manufacturing method as used in each factory.							

C.2 Manufacturing process management

The items related to the management of each process and specific management method, quality characteristics, inspection methods and working methods are shown in Tables C.2.1 and C.2.2. If referenced each item to be applied in accordance with the respective provisions of the relevant Standard(s).

Table C.2.1 – Manufacturing process management of hot-rolled steels & welded I sections for structural purposes

Process Items	Division of Steel Products				Management Items (#)	Quality Character-istics (#)	Manage-ment and Inspection Methods (#)
	Hot-rolled Plates & Floor-plates to AS/NZS 3678	Hot-rolled Bars & Sections to AS/NZS 3679.1	Welded I Sections to AS/NZS 3679.2	Hot-rolled steel flat products to AS/NZS 1594			
1. Melting	●	●	--	●	Raw material composition (including fluxes), steel making time, molten steel temperature, oxygen quality, ferroalloys, deoxidizers, ladle treatment.	Chemical composition	Chemical compositio n
2. Casting a) Ingots b) Continuous casting	●	●	--	●	Casting temperature & casting rate plus a) Top heat retention, rest time, mould type. b) Cooling condition, mould flux, mould level.	Appearance, shape, surface	--
3. Ingot processing a) Mill b) Forging	●	●	--	●	Reheating temperature, residence time, extraction temperature plus a) Rolling temperature, end cut-off quantity. b) Forging temperature, forging direction, forging ratio, cut-off quality.	--	--
4. Repairing of semi-finished product	●	●	●	●	Flaw detection, flaw criteria, flaw removal method	Appearance, shape, dimension, flaw depth	--
5. Semi-finished product cutting	●	●	●	●	Appearance, cutting rule	Appearance, shape, dimension	--
6. Heating	●	●	--	--	Reheating temperature, residence time	Appearance	--
7. Slitting	--	●	--	●	Slit width	Dimension, shape	--
8. Rolling or forging	●	●	--	●	Pass schedule, rolling temperature	Appearance, shape, dimension	Mechanical property
9. Levelling or straightening	●	●	--	●	Method, roll setting, roll wear	Appearance, shape, dimensions	--
11. Heat treatment	--	●	--	--	Pre-set temperature, retention time or line speed, cooling condition	Mechanical property	Mechanical property
12. Cutting	●	●	●	●	Cutting, dimension	Appearance, shape	Geometry

Process Items	Division of Steel Products				Management Items (#)	Quality Character-istics (#)	Manage-ment and Inspection Methods (#)
	Hot-rolled Plates & Floor-plates to AS/NZS 3678	Hot-rolled Bars & Sections to AS/NZS 3679.1	Welded I Sections to AS/NZS 3679.2	Hot-rolled steel flat products to AS/NZS 1594			
13. Conditioning	●	●	--	●	Appearance, shape, dimension, packaging	Appearance, shape, dimension, packaging	--
14. Welding	--	--	●	--	AS 1554, Grade SP	Visual, tensile, non-destructive tests	--
15. Marking	●	●	●	●	Method, position, information	Appearance	--

Common Aspects:

i) Records for the following management items and quality characteristics shall be made.

ii) Inspection methods, treatment of defective goods (rejected lots), etc. to be stipulated and implemented

Notes:

- The processes listed above, to be included in the factory production manual for each product category and manufacturing method as used in each factory.
- The processes listed above may not be in order, and any changes to the order to not reduce product quality.

Table C.2.2 – Manufacturing process management of cold-formed steels for structural purposes

Raw Material Items	Division of Steel Products				Management Items	Quality Characteristics	Management and Inspection Methods
	Cold-formed Hollow Sections to AS/NZS 1163						
1. Electric resistance welding method	●						
2. Tube forming/sizing	●				Electric current/voltage values (electric power value)	Appearance, dimension (outer diameter/thickness) , mechanical property	Mechanical property
3. Conditioning	●					Appearance, dimension	Dimension
4. Marking	●				Marking method, position and item	Appearance	--

Notes: - The raw materials listed above, to be included in the factory production manual for each product category and manufacturing method as used in each factory.

- The processes listed above may not be in order, and any changes to the order to not reduce product quality.
- Each batch to be totally manufactured in the same factory, except that galvanizing may need be done at another site.

C.3 Equipment management

The items related to the management of manufacturing equipment, processing equipment and inspection equipment, are shown in Tables C.3.1 and C.3.2.

Table C.3.1 – Equipment management of hot-rolled steels & welded I sections for structural purposes

Equipment Items	Division of Steel Products				Management Methods
	Hot-rolled Plates & Floor-plates to AS/NZS 3678	Hot-rolled Bars & Sections to AS/NZS 3679.1	Welded I Sections to AS/NZS 3679.2	Hot-rolled steel flat products to AS/NZS 1594	
1. Manufacturing equipment					1) Manufacturing equipment to have a performance necessary to achieve the product qualities specified in the relevant Standard 2) The inspection equipment items to have the capability of testing/inspecting the qualities specified in the relevant Standard 3) A rule of check-and-repair, check-and-calibration, for the equipment items, to be specified to ensure the performance and accuracy necessary to achieve the product qualities specified in the relevant Standard.
a) Steel making	●	●	--	●	
b) Casting equipment	●	●	--	●	
c) Bloom mill or forging equipment	●	●	--	●	
d) Semi- finished products repairing equipment	●	●	--	●	
e) Heating furnace	●	●	--	●	
f) Slitter	--	●	--	--	
g) Forming equipment	●	●	--	●	
h) Rolling equipment or forging equipment	●	●	●	●	
i) Straightening equipment	●	●	--	●	
j) Heat treatment equipment	--	●	--	--	
k) Cutting equipment	●	●	●	●	
l) Conditioning equipment	●	●	--	●	
m) Welding equipment	--	--	●	--	
n) Marking equipment	●	●	●	●	
2. Inspection Equipment					
a) Chemical analysis equipment	●	●	●	●	
b) Dimensional analysis equipment	●	●	●	●	
c) Mass measurement equipment	●	●	●	●	
d) Tensile testing machine	●	●	●	●	
e) Bending test machine	●	●	--	●	
f) Impact testing machine	●	●	●	●	
g) Through-thickness testing equipment	●	--	--	--	
h) Ultrasonic test equipment	●	--	●	--	

Notes: - The manufacturing and inspection equipment listed above, to be included in the factory production manual for each product category and manufacturing method as used in each factory.

- The manufacturing equipment shown above to be used in the manufacturing process

Table C.3.2 – Equipment management of cold-formed steels for structural purposes

Equipment Items	Division of Steel Products				Management Methods
	Cold-formed Hollow Sections to AS/NZS 1163				
1. Manufacturing equipment a) Initial forming/welding equipment b) Tube finishing/sizing equipment c) Conditioning equipment d) Marking equipment	• • • •				1) Manufacturing equipment to have a performance necessary to achieve the product qualities specified in the relevant Standard
2. Inspection Equipment a) Chemical analysis (if present & not from steel supplier) b) Tensile testing machine c) Non-destructive test system (weld & tube) d) Sizer e) Ferrite grain size equipment (if present) f) Mass measurement equipment	• • • • • •				2) The inspection equipment to have the capability of testing/inspecting the attributes specified in the relevant Standard 3) A rule of check-and-repair, check-and-calibration, for the equipment, to be specified to ensure the performance and accuracy necessary to achieve the product attributes specified in the relevant Standard.

Notes: - The manufacturing and inspection equipment listed above, to be included in the factory production manual for each product category and manufacturing method as used in each factory.

- The manufacturing equipment shown above to be used in the manufacturing process

C.4 Product management

The items relating to the quality, inspection and storing of products are shown in Tables C.4.1 and C.4.2, and include all the first party Product Conformity methods and identified 'Product Conformity Evaluation' requirements. Also each item to be applied in accordance with the respective provisions of the relevant Standard(s).

Table C.4.1: Product management of hot-rolled steels and welded I sections for structural purposes

Product Quality Items	Division of Steel Products				Production Inspection Methods	Product Storage
	Hot-rolled Plates & Floor-plates to AS/NZS 3678	Hot-rolled Bars & Sections to AS/NZS 3679.1	Welded I Sections to AS/NZS 3679.2	Hot-rolled steel flat products to AS/NZS 1594		
1. Designation	●	●	●	●	Inspection methods to the requirements of the product Standards	Appropriate product storage conditions to be specified Distinction between conforming and non-conforming product to be identified
2. Manufacturing process:						
a) Steel making	●	●	--	●		
b) Delivery condition	●	--	--	●		
c) Plate supply	--	--	●	--		
d) Plate cutting	--	--	●	--		
e) Plate welding	--	--	●	--		
3. Chemical composition:						
a) Cast analysis	●	●	●	●		
b) Product analysis	●	●	--	●		
c) Residual analysis	●	●	--	●		
4. Manufacturing tolerances:						
a) Dimensions	●	●	●	●		
b) Flatness	●	--	--	●		
c) Mass	--	●	--	--		
d) Pattern depth	●	●	--	●		
e) Straightness	--	●	●	--		
5. Freedom from defects:						
a) Visual inspection	●	●	●	●		
b) Imperfections	●	--	--	●		
c) Defects	●	--	--	●		
d) Repair grinding	●	●	--	--		
e) Repair welding	●	●	●	--		
f) Non destruct testing (# On request)	#	--	#	--		
6. Test procedures:						
a) Sampling position, preparation	●	●	●	●		
b) Weld quality	--	--	●	--		
7. Mechanical properties:						
a) Tensile	●	●	●	●		
b) Impact	●	●	--	●		
c) Through thickness tensile	●	--	--	--		
d) Bend	●	--	--	●		
8. Identification and certification:						
a) Identification	●	●	●	●		
b) Inspection documents, test certification	●	●	●	●		
9. Tests specified by customers	●	●	●	●		
Note: Production inspection may be carried out either as a final inspection or between processes (intermediate inspection).						

Table A.4.2: Product management of cold-formed steels for structural purposes

Product Quality Items	Division of Steel Products				Production Inspection Methods	Product Storage
	Cold-formed Hollow Sections to AS/NZS 1163					
1. Classification and designation	●				Inspection methods to the requirements of the product Standards	Appropriate product storage and conditions to be specified Distinction between conforming and non-conforming product to be identified
2. Steel feed a) Manufacturing process b) Welding	 ● ●					
3. Chemical composition	●					
4. Manufacturing tolerances a) External dimensions b) Thickness c) CHS out-of-roundness d) RHS/SHS concavity/convexity e) RHS/SHS squareness of sides f) RHS/SHS external corner profile g) RHS/SHS twist h) Straightness i) Mass per metre	 ● ● ● ● ● ● ● ● ●					
5. Freedom from defects a) Free of laminations, surface flaws and other detrimental defects b) Weld seam position c) Weld seam defects	 ● ● ●					
6. Mechanical properties a) Tensile strength b) Yield strength c) Elongation d) Cold flattening test (CHS only) e) Bendability f) Impact test g) Ferrite grain size [Item 6(f) optional]	 ● ● ● ● ● ● ●					
7. Appearance	●					
8. Marking (individual member or bundle)	●					
9. Special quality requirements	●					
Note: Production inspection may be carried out either as a final inspection or between processes (intermediate inspection).						

Part 2 Requirements for manufacturers

1 Introduction

The JAS-ANZ / ATIC Technical Committee produced this Part for the certification of the manufacture of structural steel.

2 Normative references

Refer to the normative references for the appendix in Part 3.

3 Terms and definitions

Divisions of certification include -

Hot-rolled structural steel, welded structural steel and cold-formed structural steel.

4 Application for certification

4.1 General

A client shall supply the following information with an application for certification:

(i) For facilities:

- List all facilities from which the client organisation produces product to the Standard(s) for which certification is sought. Clearly identify each facility for which certification is sought as well as each facility for which certification is not sought.
- Provide evidence of any QMS certification obtained for each facility to be included within the scope of certification (see Part 1, Clause 7.4.3).
- Production facilities at each factory and production lines in each facility.
- Identify the laboratories used by each facility and provide details of their accreditation status (Clause 5.2) and provide evidence of the following.
  - Copies of proficiency testing program reports issued to any such testing facilities demonstrating that the facilities have achieved satisfactory results during the past 2 years, for all the key test methods included in the product Standard(s)
  - That the bodies issuing such proficiency testing program reports are accredited to ISO/IEC 17043 by an ILAC member body with a scope of Proficiency Testing.
- Any previous applications for product certification under this Scheme.

(ii) For each division of certification requested:

- Product identification, labelling and marking
- Raw materials for each facility from Part 1, Appendix C.
- Details of any previous product certification applications including those refused or withdrawn.

(iii) Range: For each range of certification requested:

- Test reports
- Details of each grade
- Estimated production quantities for each grade
- Section ranges to be certified for each grade
- Any current product certifications for each grade
- Examples of product test and inspection documents.

4.2 Scope of application for product certification

4.2.1 An application for certification shall identify the Division of Certification, Scope of Certification (and referenced Standard(s)) and the location of all Facilities as illustrated in Table 2.1.

Table 2.1: Division and range of certification and manufacturing facilities

Division of Certification	Scope of Certification			Facilities
	Division of Steel Products	Standard	Steel Grade	
Hot-rolled structural steel	Plates & floor-plates	AS/NZS 3678	Refer to the Standard	Melting & casting. Hot-rolling. Processing. Heat treatment.
	Sections & bars	AS/NZS 3679.1	Refer to the Standard	
Hot-rolled structural steel	Hot-rolled steel flat products	AS/NZS 1594	Refer to the Standard	Melting & casting. Hot-rolling. Processing. Heat treatment.
Welded structural steel	Welded I sections	AS/NZS 3679.2	Refer to the Standard	Plate cutting. Beam welding.
Cold-formed structural steel	Hollow sections black	AS/NZS 1163	Refer to the Standard	Forming, welding & sizing.

4.2.2 The client for certification shall provide the following information with the application:

(i) For each facility for which certification is required:

- All facilities manufacturing product to the Standard(s) for which certification is required
- Quality plan to ISO 10005 at each factory to be considered for certification
- Production facilities at each factory and production lines in each facility.
- Testing facilities used by each factory and details of the testing facilities accreditation to ISO/IEC 17025
- Any previous applications for product certification under this Scheme.

(ii) Division: For each division of certification requested:

- Product identification, labelling and marking
- Raw materials for each factory from Part 1, Appendix C.
- Section ranges to be certified for each grade
- Any current product certifications for each grade
- Examples of product test and inspection documents.

4.3 Quality management systems (QMS)

4.3.1 The manufacturer shall provide a quality plan in accordance with Appendix A, for each factory and production facility and if relevant for Part 1, Clause 7.4, documentary evidence of having a valid ISO 9001 certification.

5 Initial audit

5.1 The client shall demonstrate full compliance with this scheme and the relevant normative requirements for the full scope of the application prior to certification being granted. This shall include:

- Verification that the reported mill test and inspection reports are valid and comply with the requirements of this Scheme and the relevant product Standards.
- For routine production steel grades, verification of the client's capability to meet the specified characteristics by a review of the inspection and test results for the steel grade.
- For a newly implemented grade, a review of the initial test programme for the steel grade.
- If required by the CB, the results of any additional programme of testing of product samples.

5.2 Test evidence shall be in the form of a compliant test report issued by a laboratory that is accredited for the scope of the test by an ILAC member signatory accreditation body. The client shall provide:

- Documents demonstrating the accreditation status of the laboratory in the field and class for each test referenced in this Scheme and the relevant product Standard(s);
- Method of verification of the results of tests, with regard to fulfilment of specified requirements of the product Standard(s);
- Documented procedure for determining and retesting invalid tests;
- Documented procedure to be followed when inspection and test results do not meet product specification.

5.3 The client shall maintain evidence to demonstrate that test samples are traceable to production and taken in accordance with a method that ensures they are representative of production. This can be achieved either by all samples being taken by a Testing Laboratory accredited for such sampling, or that the sampling is carried out in accordance with an applicable International Standard(s).

5.4 The client shall provide data covering the inspection and test performance history for each grade and shape within the scope of the application to demonstrate production capability for the range, time and volume of production.

- For each product and steel grade in the range of certification applied for the client shall provide a tabulated summary of the inspection and test results for all valid inspections and valid tests of products as defined in the product Standard or product conformance requirements.
- The tabulation of product and steel grade results shall be further subdivided on changes in manufacturing method in each of the facilities applied for in the certification (eg: changes in chemistry and/or rolling practice at each factory).
- For numeric data the tabulation shall include the number of results in the test population plus minimum, maximum, mean and standard deviation for each test in each subdivision.
- For each steel grade group, include a statistical presentation method showing performance stability.
- Additional statistical data may be supplied such as of distributions, tests of normality and probability plots.
- Non-numeric data shall be reported in an agreed format.

5.5 Results for several steel grades that are produced from the same aim chemistry and utilising the same manufacturing method, may be grouped together in the tabulation. The manufacturer shall provide a validation for each product in the group establishing the common aim chemistry and manufacturing processes.

6 Additions or alterations

6.1 The client's certified production activities shall not deviate from those specified for the scope of certification. A scope extension audit will be required if a significant change is planned to occur.

6.2 The client shall have a procedure for identifying and immediately reporting to the CB any proposed additions or alterations to the range of certified products.

Table 2.2: Significant Changes to Variables

Variables	Change
Steel & Welded I Sections	
Steelmaking process (eg: electric, BOF)	Site or method
Ladle refining	Site or method
Casting (continuous)	Site or facility
Processing (ie: normalize or roll)	Site or method
Cutting equipment & welding consumables	Site method or materials
Cold-formed Steel	
Coil and or strip feed	Site or method
Tube forming	Site or method
Marking	Site or method

6.3 Table 2.2 lists the minimum variables that comprise a process change. Once a facility, steel grade, and processing have been certified, modifications to important steelmaking and/or processing that may affect the ability of the manufacturer to meet the requirements of the specification shall be immediately reported to the CB as an addition or alteration.

6.4 New editions of a product Standard shall also constitute a change.

7 Long term quality monitoring by CB

7.1 Every 3 months the factory shall report test and inspection results specified in Part 1, Table 1.1 and Part 2, Clause 5.4.

Appendix A:
Quality management – Guidelines for quality plans

A.1 Scope

The major headings in this Appendix, have been reproduced from ISO 10005:2018, and where ever possible, the clause and sub-clause numbers (excluding the prefix 'A'), have been adopted. Examples of formats for quality plans are given in ISO 10005, Annex A.

The requirements in this Appendix specifically concern the Organization's *quality objective* to manufacture product that conforms with the applicable requirements of this Scheme and the product Standard(s). This is therefore a set of criteria that facilitate the *planning* requirement of the ISO 9001 model of quality assurance, with a strong focus on product conformity relative to ATIC requirements and the product Standard(s).

This Appendix utilizes the guidance provided in ISO 10005 to build a set of requirements for quality plans to be utilized by manufacturers of products. It does not specify how an organization configures its QMS but it does specify criteria that the CB will include within the scope of its audit.

The clauses below give mandatory effect to the corresponding clauses of ISO 10005, identified by each clause title. Although reference is made to ISO 9001, it is not a prerequisite that Organizations operate a QMS that is certified to ISO 9001.

A.2 Normative references

No additional requirements.

A.3 Terms and definitions

No additional requirements.

A.4 Using a quality plan

A.4.1 Introduction

This Appendix provides manufacturers and CBs with information on the elements of a quality plan that are required to demonstrate a systematic approach to the maintenance of production conformity with the product Standard(s) specified under this Scheme.

Organizations seeking to manufacture under this Scheme are required to demonstrate a planned approach to production.

The success of process implementation is determined by the extent to which the outputs are able to be used as inputs to other related processes, and ultimately the effectiveness of the quality plan is demonstrated by the results of product testing.

A.4.2 Requesting external provider quality plans

Not applicable.

A.4.3 Managing external provider quality plans

Not applicable.

A.5 Development of a quality plan

A.5.1 Context of the quality plan

The Organization shall ensure that the quality plan minimizes the risk of not meeting quality objectives. This is used as the basis for assessing and monitoring compliance with the requirements of the applicable product Standard(s).

A.5.2 Inputs to the quality plan

The Organization shall ensure that the requirements of this Scheme and the applicable product Standard(s) are included as inputs for the preparation of the quality plan as well as requirements specified by the customer.

A.5.3 Defining the scope of the quality plan

The Organization shall determine the processes that need to be included in the quality plan, based upon the Scheme's requirements, the product Standard(s) and the risk of processes failing to achieve expected outcomes.

A.5.4 Preparation of the quality plan

No additional requirements.

A.6 Content of the quality plan

A.6.1 General

No additional requirements.

A.6.2 Scope of the quality plan

The Organization shall ensure that the scope of the quality plan identifies its purpose and output in terms of the Scheme's requirements and the applicable product Standard(s).

The quality plan shall specify the relevant product Standard(s), the grades and size ranges that are covered, as well as any exemptions / additions that relate to the customers' requirements.

A.6.3 Quality plan inputs

Inputs to the quality plan shall be described. Also, the Organization shall review the quality plan in the light of any revisions or amendments to the product Standard(s) specified in Part 3, and any additional requirements specified by customers.

A.6.4 Quality objectives

The Organization shall ensure that the quality plan includes (or makes reference to) the applicable product Standard(s), the applicable requirements of Part 3, and any other requirements of the customer.

Any conflicts between the customer's requirements relating to product characteristics or performance and the product Standard(s), shall be immediately brought to the attention of the CB.

A.6.5 Quality plan responsibilities

The quality plan shall include an organization chart that describes responsibilities and accountabilities of those involved in developing and implementing the quality plan.

A.6.6 Control of documented information

Records of product traceability shall be retained for a minimum of 10 years after hand over.

A.6.7 Resources

No additional requirements.

A.6.8 Customer and other interested parties communication

No additional requirements.

A.6.9 Design and development

A.6.9.1 *Not applicable.*

A.6.9.2 The Organisation shall formally notify design changes to the CB who will evaluate and accept prior to release to the market.

A.6.10 Externally provided processes, products and services

No additional requirements.

A.6.11 Production and service provision

The Organization shall develop a process map or flow chart that defines the processes involved in production, their interrelationships and dependencies, including inspection and testing requirements.

A.6.12 Identification and traceability

The certified product shall be identified:

- by markings applied directly to the product or to tags or labels attached to the product.
- with batch reference or similar that enables the product to be traced back to tests that provide evidence of conformity.

A.6.13 Property belonging to customers or external providers

No additional requirements.

A.6.14 Preservation of outputs

No additional requirements.

A.6.15 Control of nonconforming outputs

The Organization shall maintain a system for recording customer complaints relating to certified product and shall ensure that the actions taken to address customer complaints are, where applicable, utilized as inputs to the Organization's corrective action process.

A.6.16 Monitoring and measurement

For those measurements that are related to the requirements of the product Standard(s), the Organization shall ensure instruments are calibrated in a manner that ensures an unbroken chain of calibration to the national measurement Standard(s). This shall be achieved through calibration of instruments by accredited calibration laboratories.

A.6.17 Audits

The Organization shall have performed an internal audit of the implementation and effectiveness of the quality plan prior to the initial evaluation conducted by the CB. Thereafter internal audits of the quality plan covered under this Appendix, shall be completed at intervals determined by the Organization but no less than once per annum.

A.7 Operation and control of the quality plan

A.7.1 Review and acceptance of the quality plan

The Organization shall provide the CB with a controlled copy of the quality plan that relates to the scope of product certification.

A.7.2 Implementation and monitoring of the quality plan

No additional requirements.

A.7.3 Revision of the quality plan

The Organization shall ensure that any revisions to the quality plan are notified in writing to the CB.

A.7.4 Feedback and improvement

No additional requirements.

Part 3 Requirements for certified structural steel products

1 Introduction

Part 3 sets out the technical requirements for the manufacture and supply of structural steel products, for application in buildings, civil works, rail and similar infrastructure, either loose or incorporated in fabrications or other finished products.

2 Normative references

See Part 0, Clause 2 and below, including repeats of the main Standards:

AS/NZS 1163	Cold-formed structural steel hollow sections
AS/NZS 1594	Hot-rolled steel flat products
AS/NZS 3678	Structural steel – Hot-rolled plates, floor-plates and slabs
AS/NZS 3679	Structural steel
AS/NZS 3679.1	Part 1: Hot-rolled bars and sections
AS/NZS 3679.2	Part 2: Welded I sections

3 Additional terms and definitions

3.1 See Part 0, Clause 3.

4 Product Conformity Evaluation

4.1 Product Conformity shall be demonstrated by:

- Initial Type testing; and
- Factory production control that includes a minimum sampling and testing frequency plan.

4.2 AS/NZS 1163, AS/NZS 3678, AS/NZS 3679.1 and AS/NZS 3679.2 all contain Product Conformity requirements, and those for AS/NZS 1594 are specified in Appendix 3.A. If the Product Conformity Evaluation is not completed, or the product does not conform to the criteria specified therein, the manufacturer cannot claim that products meet the requirements of this Scheme. All claims shall be supported with documented information.

4.3 The requirement for using a ‘minimum sampling and testing frequency plan’ does not exclude the use of statistical testing. But it is beyond the scope of this document to attempt to address the huge array of possible methods that could be adopted. Hence it must remain the responsibility of the manufacturer to demonstrate that alternative methods and procedures are in place, and achieve the specified requirements.

Appendix A:
Product conformity evaluation for AS/NZS 1594
Hot-rolled steel flat products

A.1 Introduction

This Appendix sets out the means by which Product Conformity Evaluation with this Technical Specification can be demonstrated by the manufacturer by:

- Initial type testing; and
- Factory production control including a minimum sampling and testing frequency plan.

NOTE: Testing and inspection of one or two samples does not provide an acceptable representation of actual variability in a batch of unidentified steel. The result of testing and inspecting such a sample could fall within or outside the standard range by chance and does not present a valid picture of the characteristics being evaluated.

A.2 Normative references

AS/NZS 1050	Methods for the analysis of iron and steel – Sampling iron and steel for chemical analysis
AS/NZS 1050.1	Part 1: Sampling iron and steel for chemical analysis
AS/NZS 1594	Hot-rolled steel flat products
ISO 404	Steel and steel products - General technical delivery requirements
ISO 10474:2013	Steel and steel products – Inspection documents

A.3 Additional terms and definitions

The terms and definitions from ISO 404, ISO 10474 and the following, apply:

Cast (heat) analysis

Chemical analysis determined from test samples taken from the ladle, tundish or mould during casting

Type testing

One of the methods of determination of the product type [see CPR, Annex V]

Factory production control (FPC)

Factory production control comprises operational techniques and all measures necessary to regulate and maintain the conformity of the product to the requirements of the relevant product standard. [Ref: ISO 9229]

Coil plate

Coil plate is plate flattened and cut to length from a coil of steel.

A.4 Initial Type Testing

A.4.1 General

An initial type testing program shall be carried out in accordance with Clause A.4.2 under the sole responsibility of the manufacturer of the products before they are first placed onto the market.

Such a program shall be carried out for each grade designation with the highest strength which a manufacturer places on the market. The testing program shall include the thickest product in each of the thickness ranges specified in AS/NZS 1594, Clause 1.3.12.

Initial type testing shall be performed on first application of this Specification. Tests previously performed in accordance with the provisions of AS/NZS 1594 (same product, same characteristic(s) test method, sampling procedure, system of attestation of conformity, etc.) may be taken into account. In addition, the initial type testing shall be performed at the beginning of a new method of production, using a new facility or equipment.

A.4.2 Minimum type test sampling and testing plan

The initial type testing and inspection program comprises of routine testing and inspection at a higher frequency to establish the capabilities of the manufacturing process to produce the steel product. Table A.1 provides the minimum sampling and testing frequency plan for type testing. The results of all type tests shall conform to the requirements of AS/NZS 1594.

Table A.1 - Type Tests to AS/NZS1594

Characteristic	Clause	Requirement	Test Method	Frequency
Minimum sampling and testing frequency plan				
Designation	1.4	Steel grade designation correct	Visual inspection	Once
Manufacturing process	2.2	Determine steel making process	Records inspection	Each heat, minimum of 5
Chemical composition	2.3	Cast & product analysis	AS/NZS 1050 & analysis methods	Each heat, minimum of 5
	2.3.4	Carbon equivalent		
Manufacturing tolerances	2.5	Gauge	AS/NZS 1365	Each coil rolled
		Width & length		Each coil rolled or first plate after set-up then each 8 hours *
		Flatness, edge camber & out of square		First plate after set-up then each 120 hours *
Freedom from defects	2.4	Surface defects	Visual inspection	Each coil rolled
Mechanical properties	3.4	Tensile strength, yield stress & elongation	In accordance with Clauses 1.5, 3.2, 3.3 and Appendix D	As Rolled: test 2 coils for each heat for a minimum of first 5 heats after set-up
	3.5	Bond test		
	3.6	Strain ageing for strain age tested grades		
Identification & certification	1.6	Identification	Visual inspection	Each coil
	ISO 10474 Clause 5.1	Inspection certificate Type 3.1	Records inspection	Each document

* Time in operating hours

A.5 Production testing and inspection

A.5.1 Minimum batch sampling and testing

The manufacturer shall ensure that all products conform to the minimum frequency requirements of production testing as defined in Table A.2.

A.5.2 Test batch

A test batch is a group of rolled coils consisting of finished steel of the same yield stress gradation (see AS/NZS 1594, Table 3.1 or 3.2) and product form, treated in the same manner and from the same heat.

NOTE: In ISO 404, a test batch is called a 'test unit'.

A sample product representative of the batch shall be selected and samples taken as follows:

(a) One sample for a batch not exceeding 100 tonnes.

(b) One additional sample for the balance of the batch.

If either batch includes steel of more than one thickness, a further sample shall be taken for each variation in thickness, above or below the thickness of the first test piece selected within each thickness range as set out in AS/NZS 1594, Clause 1.3.12.

(c) If specified at the time of order, take a sample for each rolled parent coil.

A.5.3 Conformity

Each test batch conforms to AS/NZS 1594 if all of the samples tested give results that are within the specified limits. If any of the properties of the tested samples give results outside the specified limits, the requirements of Clause A7.2 shall apply.

A.5.4 Invalidation of test results

Test results that are affected by improper sampling and/or preparation of test pieces and/or tests being carried out improperly, shall be invalid. The test shall be repeated with a new test piece.

Table A.2 – Production Tests & Inspections to AS/NZS1594

Characteristic	Clause	Requirement	Test Method	Frequency
Minimum sampling and testing frequency plan				
Designation	1.4	Steel grade designation correct	Visual inspection	Once
Manufacturing process	2.2	Determine steel making process	Records inspection	Each heat
Chemical composition	2.3	Cast & product analysis	AS/NZS 1050 & analysis methods	Each heat
	2.3.4	Carbon equivalent		
Manufacturing tolerances	2.5	Gauge	AS/NZS 1365	Each coil rolled
		Width & length		First coiled rolled or first plate after set-up then each 8 hours *
		Flatness, edge camber & out of square		Each coil rolled or first plate after set-up then each 120 hours *
Freedom from defects	2.4	Surface defects	Visual inspection	One coil each hour
Mechanical properties	3.4	Tensile strength, yield stress & elongation	In accordance with Clauses 1.5, 3.2, 3.3 & Appendix D	In accordance with Clause A.5.2
	3.5	Bend test		
	3.6	Reduction of area for through-thickness tested grades		
Identification & certification	1.6	Identification	Visual inspection	Each coil
	ISO 10474 Clause 5.1	Inspection certificate Type 3.1	Records inspection	Each document

* Time in operating hours

A.6 Factory production control

A.6.1 General

The manufacturer shall establish, document and maintain a factory production control (FPC) system to ensure that the products placed on the market conform to the stated performance characteristics. The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming material or components, equipment, the production process and the product.

A.6.2 Equipment

Testing **-** All weighing, measuring and testing equipment shall be calibrated and regularly inspected according to documented procedures, frequencies and criteria.

Manufacturing **-** All equipment used in the manufacturing process shall be regularly inspected and maintained to ensure use; wear or failure does not cause inconsistency in the manufacturing

process. Inspections and maintenance shall be carried out and recorded in accordance with the manufacturer's written procedures.

A.6.3 Raw materials

The specification of all incoming raw materials shall be documented, as shall the inspection scheme for ensuring their conformity.

A.6.4 Product testing and evaluation

The manufacturer shall establish procedures to ensure that the stated values of all the characteristics are maintained. The characteristics and the means of control shall be in accordance with the minimum requirements listed in Table A.2.

A.7 Non-conforming products

A.7.1 General

The manufacturer shall have written procedures, specifying the processing of non-conforming product.

A.7.2 Retests

The requirements of ISO 404, Clause 8.3.4 shall apply.

A.7.3 Repair

All repaired product shall be inspected for compliance to the requirements of AS/NZS 1594.

A.8 Documentation

A.8.1 General

The results of all testing programs shall be recorded and such records shall be maintained and be made available for inspection for a period of at least 5 years after the date when that last product to which the test program refers to was delivered. Documentation shall include information to be supplied to the purchaser, plus manufacturing process, physical and mechanical properties, inspection and testing, and test procedures.