



*Austroads*

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# AUSTROADS TECHNICAL SPECIFICATION ATS 1120

## Quality Management Requirements



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## 1. Scope

- 1.1 This Austroads Technical Specification ATS 1120 sets out the requirements for the operation of the Contractor's Quality Management System for the work under the Contract.
- 1.2 The Contractor must establish, implement and maintain a Quality Management System in accordance with the requirements of AS/NZS ISO 9001 and this Specification.
- 1.3 The Contractor's Quality Management System may be integrated with other management systems.

## 2. Definitions

- 2.1 In addition to the definitions set out in AS/NZS ISO 9000 (unless amended by this Specification), the definitions listed below apply to this Specification:

**Controlled Document:**

A document which is controlled in accordance with Clause 7.5.3 of AS/NZS ISO 9001.

**Hold Point:** An identified point in a work-related process, beyond which the subsequent activity cannot proceed without release of the Hold Point.

**Inspection and Test Plan (ITP):**

A plan or proforma used to plan the verification process and to record evidence of compliance with specified requirements.

**Lot:** Any part of the Works which:

- a) has been constructed and / or manufactured under uniform conditions;
- b) is substantially homogeneous with respect to material and general appearance;
- c) is of a uniform quality without obvious changes in attribute values; and
- d) has been defined by the Contractor as a Lot.

**Quality Management Representative (QMR):**

A person who is directly responsible to the Contractor's senior management and has responsibility for ensuring that the requirements of this Specification are complied with.

**Technical Procedure:**

Documented information describing a process in accordance with Clause 8.5.1 of AS/NZS ISO 9001, which includes procedures / instructions for the design, construction, commissioning and maintenance of the Works and may reference as Inspection and Test Plans.

**Witness Point:**

An identified point in a work-related process where the Contractor must give prior notice to the Principal and the option of attendance may be exercised by the Principal.

## 3. Referenced Documents

- 3.1 The following documents are referenced in this Specification.

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### Australian / New Zealand / ISO Standards

AS/NZS ISO 9000	<i>Quality management systems - Fundamentals and vocabulary</i>
AS/NZS ISO 9001	<i>Quality management systems - Requirements</i>

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## 4. General

- 4.1 The Contractor will not be relieved from any of its obligations under this Contract by:
- a) the implementation and compliance with any part of the Contractor's Quality Management System;
  - b) the acceptance or approval (or non-acceptance or non-approval) of any part of the Contractor's Quality Management System (including acceptance of the Contractor's disposition for non-conforming product) by any person authorised to approve or accept work under the Contract;
  - c) compliance with any Hold Point processes; or
  - d) the failure by any person to detect any defect or error in the Contractor's work or documentation at a Hold Point or during surveillance or audit.
- 4.2 The Principal is not obliged to make payment for work unless the work which is the subject of the payment claim has been executed in accordance with the requirements of this and other Specifications.

## 5. Quality Management System Requirements

(Refer AS/NZS ISO 9001 Clause 4.4)

- 5.1 The Contractor's Quality Management System must be used throughout the course of the Contract to ensure that the quality of the Contractor's work complies with the requirements of the Contract.
- 5.2 At a minimum, the Contractor's Quality Management System must ensure that:
- a) process inputs (eg purchased product, constituent materials or subcontractor work) are validated as meeting the requirements of the Contract before being incorporated into the Works;
  - b) work processes (including use of suitable equipment and work methods and the availability of adequately trained personnel) will result in conforming product;
  - c) appropriate Technical Procedures are in place which document how processes will be carried out, who is responsible for the activities that constitute the process, how interfacing between different activities/responsibilities is achieved and how conformance will be demonstrated;
  - d) documented information is controlled where required by this Specification;
  - e) work processes are validated as conforming with the Quality Management System and the requirements of the Contract;
  - f) completed work is validated as conforming with the requirements of the Contract;
  - g) non-conforming processes and products are identified and controlled; and
  - h) Records demonstrating compliance with the above are generated and provided to the Principal.
- 5.3 The Contractor must prepare and implement procedures to ensure compliance with the requirements of Clause 5.2.
- 5.4 Notwithstanding AS/NZS ISO 9000, a reference to any procedure in this Contract is a reference to a written procedure.

## 6. Quality Management Representative

(Refer AS/NZS ISO 9001 Clause 5)

- 6.1 The Contractor must appoint a QMR, who must be on Site at all times when required by this Specification.
- 6.2 At all times, the duties of the QMR with regard to ensuring compliance with this Specification must take precedence over any other activity undertaken by the QMR.

## 7. Document Control

(Refer AS/NZS ISO 9001 Clause 7.5.3)

- 7.1 At a minimum, the following documents must be controlled in accordance with Clause 7.5.3 of AS/NZS ISO 9001:
  - a) all procedures and all Inspection and Test Plans,
  - b) all management plans (such as the Contractor's Environmental Management Plan, Quality Plan, Safety Management Plan, Stakeholder Management Plan and Commissioning Plan); and
  - c) any document identified as a Controlled Document
- 7.2 Where a Controlled Document is in draft status, the Contractor must develop the Controlled Document so that the final version is provided to the Principal within the timeframes specified in the Contract. If no timeframe is specified, the Controlled Documents must be provided at least 10 working days prior to the commencement of any activity related to the relevant part of the Controlled Documents.
- 7.3 The Contractor acknowledges that the Controlled Documents may require ongoing development, amendment and updating throughout the Contract.
- 7.4 The Contractor must update a Controlled Document as soon as practicable if it:
  - a) does not adequately address the requirements of the Contract;
  - b) is causing non-conformity; or
  - c) no longer reflects the current practice of the Contractor.
- 7.5 Prior to the implementation a proposed amendment to a Controlled Document, the Contractor must provide a copy of the proposed amendment to the Principal. The Contractor's document control procedure must ensure that only the current version of a Controlled Document is used.
- 7.6 Contract documents issued to the Contractor on behalf of the Principal must be controlled by the Contractor in accordance with Clause 7.5.3 of AS/NZS ISO 9001.

## 8. Quality Plan

(Refer AS/NZS ISO 9001 Clause 8.1)

- 8.1 The Contractor must develop, implement and comply with a Quality Plan which is specific to this Contract.
- 8.2 At a minimum, the Quality Plan must include:
- a) a statement of the Contractor's policy on Quality Management;
  - b) the organisation structure for the management of the Contract with details of the specific responsibilities and authorities of key personnel, including the responsibilities and authorities of the QMR with respect to quality matters;
  - c) a register of Technical and non-Technical Procedures, giving title, identifier and revision status of all procedures necessary for execution of the work under the Contract;
  - d) the method(s) proposed to assure the quality of all subcontractors' products and services in order to comply with the requirements of the Contract;
  - e) the approach to be taken regarding inspection and testing (including a register of Inspection and Test Plans) and the method of notification of all off-site testing and manufacture of items to be included in the permanent works; and
  - f) the audit schedule proposed for the Contractor's Quality Management System and external audits proposed for subcontractors and suppliers.
- 8.3 No later than 5 working days prior to commencing any testing work, the Contractor must submit the Quality Plan of any subcontractor undertaking testing on this Contract.
- 8.4 The Contractor must undertake surveillance, audit and review of its Quality Plan in accordance with the requirements of this Specification.

## 9. Technical Procedures

(Refer AS/NZS ISO 9001 Clause 8.5.1)

### General

- 9.1 The Contractor must prepare Technical Procedures for all design, construction, commissioning and maintenance processes where the absence of a Technical Procedure could adversely affect quality of the work or a requirement for a Technical Procedure is specified under this Contract.
- 9.2 At a minimum, a Technical Procedure must:
- a) identify the purpose and scope of the activity;
  - b) identify responsibility for each activity and be understood and used by personnel;
  - c) specify what materials, processes and equipment are to be used;
  - d) specify all necessary measurement, control and recording;
  - e) identify Hold Points and Witness Points; and
  - f) be reviewed for corrective action in the event of non-conformance.
- 9.3 A copy of all Technical Procedures must be provided to the Principal at least 10 working days before construction of the relevant work commences unless an alternative time is specified elsewhere in the Contract.

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## 10. Product Identification and Traceability

(Refer AS/NZS ISO 9001 Clause 8.5.2)

### Lot Management

- 10.1 The Contractor must implement a Lot Management System which:
- a) enables each Lot to be identified on Site and the identification to be recorded;
  - b) records measurements / quantities (where appropriate) associated with the Lot;
  - c) records the part numbers (and where appropriate, individual serial numbers) of manufactured items incorporated into the Works;
  - d) is compatible with a work breakdown structure which meets the requirements of the Principal's asset management system (if any) and enables the Lot to be identified as a component of the completed asset;
  - e) identifies the item number in the payment schedules which is applicable to the Lot;
  - f) identifies all Records associated with the Lot;
  - g) records the status of the Lot (including any Non-Conformance Reports); and
  - h) notifies the Principal that a Lot is ready to be closed (ie work on the Lot is complete and all Records are available to demonstrate compliance with this Contract).
- 10.2 Before work commences on a Lot on Site, the Contractor must predetermine the bounds of that Lot and if requested, provide written advice of the predetermined bounds and its identification to the Principal.
- 10.3 At any time, the Contractor may redefine the bounds of a Lot. A redefinition of the bounds of the Lot must also identify the changes to the previously predetermined bounds of the Lot.
- 10.4 For each pavement construction Lot placed on Site, the Lot identification must include the Lot Number and, for the start and end of the Lot (on the control line or carriageway centreline), the latitude and longitude in decimal degrees and datum to an accuracy of plus or minus 5 metres. This identification is additional to, and does not replace, any other survey requirements.

### Traceability

- 10.5 Unless specified otherwise, traceability is required for all manufactured or produced items incorporated into the Works, including structural concrete, steel, pavement materials, asphalt, bituminous products, ITS components and pavement marking materials.
- 10.6 The trace must start at the source of materials used in manufacture or production, and finish at the location where the product is incorporated into the Works. Quarry products must be traceable to the bench face in the quarry.
- 10.7 Records must be kept from the time of manufacture and include complete details of all testing, storage (where appropriate) and location of placement so that the Lot can be identified at all times.

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## 11. Hold Points and Witness Points

(refer AS/NZS ISO 9001 Clause 8.6)

### General

- 11.1 The Contractor's Quality Management System must include a procedure for managing the Hold Point and Witness Point process, including recording the release of the Hold Point.
- 11.2 A summary of the Hold Points and Witness Points in each Austroads Technical Specification is included in the Annexure to that Specification.

### Hold Points

- 11.3 Hold Points are specified in the Contract for the purpose of verifying that the Contractor's work conforms to the specified requirements before subsequent work commences. The Contractor may proceed with the subsequent work once the Hold Point is released.
- 11.4 Release of a Hold Point entitles the Contractor to proceed to the next stage of a process, but does not relieve the Contractor of any of its obligations under this Contract.
- 11.5 The Quality Management Representative must be satisfied that the Contractor's work fully complies with the requirements of the Contract before seeking release of the Hold Point.
- 11.6 The Principal will authorise a person to release a Hold Point.
- 11.7 Where the Contractor's work reaches a Hold Point, the Contractor must:
  - a) notify the Principal's authorised person accordingly;
  - b) provide all Records necessary to verify that the work conforms with the Contract (including identification of the applicable clause in the Contract); and
  - c) where appropriate, permit an inspection of the Contractor's work.
- 11.8 The timeframe for the Contractor to notify the Principal that a Hold Point will be reached is specified in each Austroads Technical Specification. This timeframe commences when all information demonstrating compliance with the Hold Point release requirements has been provided in an appropriate format to the Principal's authorised person. Within that timeframe, the Principal's authorised person must either:
  - a) release the Hold Point; or
  - b) provide reasons why the Hold Point will not be released, including details of any non-conformance.
- 11.9 The Contractor is deemed to have allowed time to assess and release each Hold Point in the Contractor's program.
- 11.10 If a time to assess and release a Hold Point has not been specified in the Contract, the time is deemed to be 10 working days.

### No Waiver

- 11.11 If the Contractor continues the work prior to the release of an applicable Hold Point:
  - a) any such work is entirely at the Contractor's risk and does not constitute a waiver of the right not to release the Hold Point; and
  - b) at the Contractor's expense (irrespective of whether the work is subsequently found to be conforming or non-conforming), the Principal may require the removal of any part of the Works for the purpose of testing, inspection or measurement.

## Witness Points

- 11.12 A Witness Point may be included in a Specification for the purpose of notifying the authorised person that a critical activity is scheduled to commence.
- 11.13 The Contractor may proceed with the activity when the period of notice has expired, regardless of whether or not the authorised person elects to witness the activity.
- 11.14 If no time period is specified, the Contractor must notify the authorised person at least one working day prior to the approaching Witness Point.

## 12. Non-Conformance

(Refer AS/NZS ISO 9001 Clause 8.7)

- 12.1 Further to Clause 8.7 “Control of Nonconforming Outputs” of AS 9001, where the Contractor’s work does not comply with a requirement specified in this Contract, the Contractor must issue a Nonconformance Report.
- 12.2 The Contractor’s Quality Management system must include:
- a) a procedure for the management of Nonconformities with a standard form Nonconformance Report; and
  - b) a register which identifies the status of all Nonconformities.
- 12.3 Where a Nonconformity has been identified, the Contractor must:
- a) include the proposed method of disposition on the Non-conformance Report;
  - b) attach all relevant inspection and test records to the Non-conformance Report;
  - c) issue the Non-conformance Report within one working day of the Nonconformity being recognised; and
  - d) provide a copy of the Non-conformance Report to the Principal.
- 12.4 A Non-conformance Report must not relate to more than one Lot.
- 12.5 In the event of a Nonconformity being observed by the Principal and the Contractor does not take appropriate action when informed of the Nonconformity, a Corrective Action Request (CAR) will be issued to the Contractor.
- 12.6 For a Nonconformity relating to Technical Procedures or products, the Contractor must issue a Non-conformance Report within one working day of receipt of the CAR. For any other Nonconformities, the Contractor must provide details of its proposed disposition as soon as practicable.
- 12.7 The identification of a product related Nonconformity and the subsequent issue of a Non-conformance Report or Corrective Action Request constitutes a Hold Point.
- 12.8 Release of the Hold Point is subject to the Principal’s acceptance of the Contractor’s proposed disposition.
- 12.9 The Contractor must review and analyse the cause of all Nonconformities and develop a plan of corrective action to minimise the likelihood of recurrence. Details of such corrective action must be entered in a Non-conformance Report or Corrective Action Request as appropriate.

## 13. Records

(Refer AS/NZS ISO 9001 Clause 9)

### General

- 13.1 The Contractor must:
- a) ensure all Technical Procedures generate objective evidence of compliance with the specified requirements;
  - b) prepare all Records necessary to demonstrate compliance with this Contract;
  - c) ensure all Records are securely stored and can be inspected by the Principal at any time during the term of this Contract; and
  - d) ensure the Records are provided as part of Lot conformance data and can be correlated to the Contractor's claims for payment.
- 13.2 A summary of the Records to be generated for each Austroads Technical Specification is included in the Annexure to that Specification.
- 13.3 The Contractor's Quality Management Representative must certify each Record within 3 working days of that Record being completed.
- 13.4 Records must be forwarded to the Principal within one working day of the certification.
- 13.5 The Contractor agrees and acknowledges that any Record evidencing Nonconformity is not confidential.
- 13.6 Where payment is to be made on the basis of measured quantities, the Records submitted for each conforming Lot must include measurement for that Lot.

### Format and Presentation of Records

- 13.7 All Records must be presented on standard formats in a clear and logical sequence and the data must be summarised and tabulated.
- 13.8 Each Record must clearly identify:
- a) the type of measurement, test or inspection;
  - b) the three dimensional location of the activity (where appropriate);
  - c) the acceptance criteria;
  - d) the applicable Lot number;
  - e) the date of measurement, test or inspection;
  - f) an analysis of results (where appropriate); and
  - g) for a pavement construction Lot placed on Site, the start and end of the Lot (on the control line or carriageway centreline) the latitude and longitude in decimal degrees and datum to an accuracy of plus or minus 5 metres.
- 13.9 All samples taken must be registered in a Sample Register. Where a sample has been taken but not tested, the reason why must be recorded in the register.
- 13.10 All individual test results must be identified in a way that differentiates between testing for control purposes and verification testing.
- 13.11 All claims for payment made by the Contractor must be accompanied by information which identifies the Records for the work which is the subject of the payment claim.

## As Constructed Drawings and As Constructed Electronic Models

13.12 If:

- a) the Works are constructed to be at variance to the drawings; or
- b) it is specified in the Contract documents that “As Constructed” drawings (alternatively “As Built”) and/or “As Constructed” electronic models are required,

the Contractor must prepare As Constructed drawings and As Constructed electronic models and submit these to the Principal.

13.13 The As Constructed drawings must:

- a) show what was actually constructed with departures clearly marked;
- b) conform to the Principal’s drafting standards;
- c) be free of revision indicators such as “clouds” and coloured text; and
- d) be provided an electronic format which is acceptable to the Principal and if requested, in additional hard copy.

13.14 The As Constructed Electronic Model must:

- a) show what was actually constructed as part of the Survey As Constructed electronic model;
- b) conform to the Principal’s electronic model standards; and
- c) be provided in an electronic format which is acceptable to the Principal.

## 14. Inspection and Testing

(Refer AS/NZS ISO 9001 Clause 9.1)

### Responsibility for Testing

14.1 Unless specified otherwise, the Contractor is responsible for verifying that its work complies with the requirements of this Contract. This includes undertaking all necessary testing, inspection, commissioning (where appropriate) and examination.

### Inspection and Test Plans

14.2 The Contractor must develop, implement, maintain and comply with ITPs to provide evidence the Contractor has complied with the requirements of each Specification. At a minimum, each ITP must include:

- a) description of activity and / or identification of applicable stages of construction / manufacture / commissioning;
- b) clear cross referencing to:
  - i) the applicable clauses of the specification, and / or
  - ii) applicable test procedures / methods or Australian Standards used for the testing;
- c) details of the method of verification for all specified requirements of the Contract, including those where verification is by control of process rather than inspection and testing at process completion;
- d) test frequency, location, acceptance criteria and records produced demonstrating compliance;
- e) details of the test equipment and where calibrated equipment is required, the calibration regime;
- f) the responsibility for testing and acceptance;

- g) time, date and location of the inspection / testing and/or commissioning activity;
- h) a location on the ITP to record comments;
- i) applicable Hold Points and Witness Points;
- j) details of any environmental conditions or external factors that may affect the results; and
- k) identification of the involvement of any subcontractors in the process.

14.3 A copy of each ITP must be provided to the Principal at least 10 working days before construction of the relevant work commences unless an alternative time is specified elsewhere in the Contract.

14.4 A register of all ITPs must be included in the Quality Plan.

## Test Reports and Testing Laboratories

14.5 Where a test method is specified or referenced in this Contract, the Contractor must use that test method for verifying that the Contractor's work complies with the requirements specified in this Contract.

14.6 All sampling and testing specified in this Contract must be performed by a laboratory that:

- a) is accredited for the test method to meet the requirements of AS ISO/IEC 17025; and
- b) complies with the resource requirements for competent testing personnel and appropriate supervision as required by AS ISO/IEC 17025.

14.7 The laboratory's accreditation body must be a signatory to the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA) for testing laboratories. The National Association of Testing Authorities (NATA) is a signatory to the ILAC MRA.

14.8 All tests carried out for the verification of a requirement specified in this Contract must be recorded on a test report (or test certificate) which:

- a) meets the reporting requirements specified in the test method;
- b) is in English alphanumeric characters;
- c) is provided to the Principal at the same time that it is provided to the Contractor;
- d) is endorsed in accordance with the AS ISO/IEC 17025 accreditation for that laboratory; and
- e) shows the appropriate logo or details of the ILAC MRA signatory.

## Inspection, Measuring and Test Equipment

14.9 The Contractor must maintain a schedule of calibrated inspection, measuring and test equipment to be used on the works, giving the date of last calibration and next due calibration.

14.10 Where an item is recalibrated during the course of the Contract, the Contractor must provide written advice of the results, any adjustments made to the equipment and the effects any adjustments have had on work completed since the previous calibration.

14.11 Inspection, measuring and test equipment must be capable of producing the degree of accuracy specified in the Contract and any applicable accepted industry standards.

## Frequency of Testing

14.12 The frequency of sampling and testing must be sufficient to verify conformity and in any case, not be less than a test frequency specified in the Contract. If no minimum frequency of inspection or testing is stated in the Contract, the Contractor must nominate appropriate frequencies in the Inspection and Test Plan(s).

- 14.13 Where the Contractor can demonstrate consistent process capability, the Contractor may submit a proposal to the Principal to reduce the specified minimum frequency of testing by up to 50% (or other rate specified in the Contract documents). Any such proposal must be supported by a statistical analysis verifying consistent process capability and product characteristics.
- 14.14 Acceptance of the proposal is at the sole discretion of the Principal and it may be rescinded at any time. If the proposal is accepted and a non-conformity is detected, the prior minimum frequency of testing must be restored and the Contractor may submit a new proposal for reduced testing.

## 15. Auditing and Surveillance

(Refer AS/NZS ISO 9001 Clause 9.2)

### General

- 15.1 In addition to audits arranged by the Contractor pursuant to Clause 9.2 of AS/NZS ISO 9001, the Contractor must allow any person authorised by the Principal to undertake audit and surveillance (including photographic recording of the Contractor's work). This applies to work undertaken by subcontractors or work undertaken at locations other than at the Site.
- 15.2 Audit and / or surveillance may be for the purpose of verifying compliance with any aspect of the Contract.
- 15.3 The Contractor must provide any reasonable assistance and access required for the purpose of undertaking audit and / or surveillance. This includes providing access to records and other relevant documentation.

### Costs

- 15.4 Costs incurred by the Contractor resulting from providing reasonable assistance and access (including for the provision of staff or from the interruption of activities) will be borne by the Contractor.
- 15.5 Except for the cost of testing (which will be borne by the party stated in the Conditions of Contract), costs incurred by the Principal in connection with audits and / or surveillance will be borne by the Principal.

### Notice of Audits

- 15.6 Audits of Technical Procedures and products may be conducted without notice. The Contractor will be provided with at least 5 working days notice of an audit of the non-Technical Procedures.

### Product Audits

- 15.7 Where this Contract requires the Contractor to provide audit samples, the Contractor must ensure that the samples are delivered to an address nominated by the Principal. The samples will be stored at the Principal's expense.
- 15.8 The Contractor must provide documentation to confirm that the samples have been provided and include this documentation in the relevant Lot package.
- 15.9 All samples must be clearly marked and be traceable to the relevant Lot in accordance with Clause 10.

## Amendment Record

Amendment no.	Clauses amended	Action	Date
-	New specification	New	May 2021

### Key

Format	Change in format
Substitution	Old clause removed and replaced with new clause
New	Insertion of new clause
Removed	Old clauses removed