

# Master Specification Part PC-CN3

## Construction Management

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**Government of South Australia**  
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## PC-CN3 Construction Management

### 1 General

This Master Specification Part sets out the requirements for the management of construction, including:

- a) the documentation requirements for the Construction Management Plan, as set out in section 2;
- b) the Construction Documentation requirements, as set out in section 3;
- c) the management and personnel requirements, as set out in section 4;
- d) the proprietary product requirements, as set out in section 5;
- e) the construction meeting requirements, as set out in section 6;
- f) the warranty requirements, as set out in section 7; and
- g) the Hold Point and Witness Points requirements, as set out in section 8.

### 2 Construction Management Plan

- a) The Contractor must establish, implement and maintain a Construction Management Plan for the management of the construction activities prior to commencing the Works and Temporary Works, which must:
  - i) detail how the Works and Temporary Works will be divided and delivered into separate construction zones (as applicable);
  - ii) include details of the Contractor's Activity Zone (CAZ) in accordance with PC-SM2 "Site and Access Management", including the status of the approval of the CAZ and any requested amendments to the CAZ;
  - iii) provide for each of the construction zones:
    - A. a framework for the delivery of components of the Works and Temporary Works including an outline of the Construction Packages and Work Lots required;
    - B. a high level methodology for each major construction stage and key activity;
    - C. details of proposed Subcontractors;
    - D. forecast construction risks and impacts including noise, vibration and other community impacts and proposed mitigation measures; and
    - E. a system for the receipt, storage, security, care, testing, certification and issue of equipment and materials for incorporation in the Works or for use in performing the Works and Temporary Works;
  - iv) include procedures for:
    - A. the development and approval of Construction Documentation that complies with section 3.1;
    - B. the development and approval of Shop Drawings, including where a construct only contract form is not used, the co-ordination with design management requirements in accordance with the Design Management Plan and PC-EDM1 "Design Management"; and
    - C. clarifications to Construction Documentation, including changes to IFC Design Documentation in accordance with PC-EDM1 "Design Management";
  - v) include the decision making process for significant construction decisions, including:

- A. the criteria and thresholds for identifying significant construction decisions that will be subject to multi-criteria assessment;
  - B. the criteria and weightings against which construction options are assessed, (which must include whole-of-life, environmental, economic, social, and technical criteria, relevant to the decision); and
  - C. endorser(s) and approver(s);
- vi) include procedures in relation to survey and condition monitoring in accordance with the requirements of the Contract Documents;
  - vii) detail the approach to ensure all relevant hazards as identified in the Safety in Design reports, including ensuring the Safety in Design risk register has been transferred into the relevant Construction Methodology;
  - viii) include procedures to ensure progressive closure of As-Built Records, including Quality Management Records;
  - ix) include for the Works records management indexing protocols that will enable referencing of all Design Documentation and Quality Management Records back to Construction Packages, and Construction Packages to asset, work type and location;
  - x) include for the Works and Temporary Works:
    - A. a register of Construction Packages;
    - B. site access and interface protocols in accordance with PC-SM2 “Site and Access Management”, which at a minimum must:
      - I. include the notification, timing and procedures required for the Principal and Construction Verifier to access the Site;
      - II. detail the safety and induction protocols for gaining access to the Site;
      - III. acknowledge and address the need for emergency access to be provided without prior notice; and
      - IV. acknowledge and address the need for safety related audits and inspections to be undertaken without giving prior notice; and
    - C. a protocol (which must be agreed with the Principal) for notification of all incidents; and
  - xi) include all plans related to construction quality which are specified in each applicable Master Specification Part that are not Project Plans.
- b) The Construction Management Plan must be submitted, reviewed and updated in accordance with PC-PM1 “Project Management and Reporting”.
  - c) The Works and Temporary Works must not commence until the Hold Point in relation to the Construction Management Plan as set out in PC-PM1 “Project Management and Reporting” has been released.

### 3 Construction Documentation requirements

#### 3.1 Construction Documentation

- a) Construction documentation for each Construction Package must include (as applicable):
  - i) a matrix that details each document forming part of the Construction Documentation submission, including a reference to the relevant Master Specification Part that specifies the requirement;
  - ii) site management and supervisory responsibilities;
  - iii) the planned sequence of work for that Construction Package;

- iv) the relevant IFC Design Documentation;
  - v) the relevant Shop Drawings;
  - vi) Inspection and Test Plans (ITPs);
  - vii) Construction Methodology and Construction Procedures;
  - viii) any relevant artefacts required by systems engineering in accordance with PC-EDM6 “Systems Engineering Management”;
  - ix) the relevant WTMPs;
  - x) where not included in the CEMP, site specific environmental plans, including a specific risk assessment for the Construction Package;
  - xi) a schedule of assets contained within that Construction Package;
  - xii) a schedule of Work Lots contained within that Construction Package;
  - xiii) construction work risk assessment(s), supporting safe operating procedure(s), safe work method statement(s) for high risk construction activities and all work permits;
  - xiv) forecast construction impacts including noise, vibration and other community impacts and proposed mitigation measures;
  - xv) identification, mitigation and control of all high risk activities in respect of environment, interface, disruption, quality, and program;
  - xvi) a list of key types of vehicles, plant and equipment to enable the Works and Temporary Works to be performed;
  - xvii) site layout plans, including details of storage, pedestrian and vehicular routes, plant location and emergency protocols;
  - xviii) a list detailing all proposed permanent products and materials to be incorporated into the Works with confirmation from the Contractor that all items are compliant with the Contract Documents;
  - xix) all relevant instructions and performance criteria provided by the manufacturer for proprietary products in accordance with section 5b);
  - xx) all Approvals, except for the design related Approvals that are included in the IFC Design Documentation;
  - xxi) any relevant construction documentation required by a relevant Third Party; and
  - xxii) the information which has been specified in each applicable Master Specification Part to be included in the Construction Documentation,
- (Construction Documentation).**
- b) Subject to section 3.1c), a draft version of the Construction Documentation (**Draft Construction Documentation**) may be submitted prior to the submission of the Construction Documentation, which will constitute a **Witness Point**.
  - c) Draft Construction Documentation submitted in accordance with section 3.1b) must comply with the requirements of sections 3.1a)i) to 3.1a)xxii) except for the requirement to include the Shop Drawings under section 3.1a)v) and the IFC Design Documentation under section 3.1a)iv), which may be substituted by the provision of the most current Design Documentation relevant to the Construction Package at the time of submission of the Draft Construction Documentation.
  - d) For each Construction Package, Construction Documentation must be submitted for review which will constitute a **Hold Point**.
  - e) Construction of any Construction Package must not commence until the Hold Point required by section 3.1d) has been released.

- f) Where a change is required to the Construction Documentation, the relevant Construction Documentation must be updated and resubmitted in accordance with section 3.1a) and the requirements of this section 3 will reapply, including any relevant submission requirements associated with the amended documentation.
- g) Where the Contract Documents include PC-CN4 “Temporary Works”, once the relevant Temporary Works design documentation becomes the Finalised Temporary Works Design Documentation, they will be deemed to be the IFC Design Documentation for the purposes of inclusion in the Construction Documentation.

## 3.2 Construction Methodology

Each Construction Methodology must detail the planned method of construction and describe:

- a) the scope of activities covered, including reference to the relevant construction zones and details of how the activities form part of the high level methodology detailed in the Construction Management Plan;
- b) the materials, plant and equipment to be used;
- c) the personnel required and their roles, responsibilities and required competencies;
- d) all site and safety induction requirements;
- e) all relevant hazards as identified in the Safety in Design reports, including the Safety in Design risk register;
- f) the process requirements which are critical to quality;
- g) all Hold Points and Witness Points required;
- h) the detailed construction methodology to be followed; and
- i) provide cross references to any relevant WTMPs,

**(Construction Methodology).**

## 3.3 Inspection and Test Plans

Inspection and Test Plans must be in accordance with PC-QA2 “Quality Management Requirements for Major Projects”.

## 4 Management and supervisory personnel

Where required by the Contract Documents, the Contractor must appoint a suitably qualified and experienced management representative as Construction Manager and supervisory personnel for the duration of the Contractor’s Activities in accordance with PC-PM3 “Contractor’s Personnel and Training”.

## 5 Proprietary and approved products

- a) Where a proprietary product is proposed to be utilised, the Contractor must ensure that the proprietary product is used in accordance with the manufacturer’s instructions unless otherwise specified in the Contract Documents.
- b) Where work is specified to be carried out “in accordance with the manufacturer’s instructions”, “manufacturer’s specifications” (or similar), the Contractor must comply with the Contract Documents and include in the Construction Documentation all relevant instructions and performance criteria provided by the manufacturer.
- c) The Contractor must ensure that advertising markings and proprietary names of a permanent nature are not applied to any component where these markings will be visible in the completed Works.

- d) Where a specific product or a product appearing on the Department Approved Products List is required and the Contractor proposes to use an alternative product, the Contractor must submit to the Principal details of any proposed alternative to a specified product, including provision of sufficient information to demonstrate that the alternative product is suitable to use, which will constitute a **Hold Point**. The Contractor must not procure the alternative product until this Hold Point is released.
- e) The Principal may approve or reject any proposed alternative product at its discretion and is under no obligation to approve any such proposal for the convenience of, or to assist, the Contractor.

## 6 Construction review meetings

- a) Construction review meetings for each construction zone must be held weekly, or at a shorter or longer frequency where otherwise directed by the Principal, to review:
  - i) safety, quality and environmental;
  - ii) construction verification;
  - iii) status of progress against the Contract Program and towards Completion;
  - iv) an updated 4 week forecast detailing all construction activities, including identification of anticipated Hold Point and Witness Point timing;
  - v) an updated 3 month forecast for construction activities;
  - vi) progress in submitting the Construction Documentation for each Construction Package, including ITPs, Construction Methodologies and Construction Procedures;
  - vii) a register of issues affecting construction progress and actions to resolve such issues;
  - viii) a register, including the status of design changes from the IFC Design Documentation;
  - ix) progress in closure of As-Built Records, including closure of Work Lots;
  - x) the register of all Non-Conformances and System Non-Conformances and progress towards rectification;
  - xi) any proposed updates to the Construction Management Plan, including the listing of all Construction Packages; and
  - xii) any other issues arising out of construction.
- b) Construction review meetings must involve representatives from the Principal, the Contractor, and any other representative requested by the Principal.

## 7 Warranty

- a) The Contractor must supply a manufacturer's warranty for all assets, devices and equipment supplied pursuant to the Contract Documents.
- b) The warranty required by section 7a) must comply with the following requirements:
  - i) the warranty must commence on the later of:
    - A. dispatch of the relevant asset, device or equipment from the manufacturer's premises;
    - B. installation of the asset, device or equipment as part of the Works; or
    - C. in the relation to ITS related assets, devices or equipment, the date of commissioning and handover of the ITS asset, device or equipment in accordance with RD-ITS-C1 "Installation and Integration of ITS Equipment"; and
  - ii) the warranty must have a duration of the longer of:



- A. 2 years;
  - B. for ITS assets, devices or equipment, as specified in RD-ITS-C1 "Installation and Integration of ITS Equipment"; or
  - C. such longer duration specified in the Contract Documents.
- c) The Contractor must ensure that the manufacturer's warranty required by section 7a) warrants:
- i) that the asset, device or equipment is:
    - A. manufactured to the required quality and standard as set out in the Contract Documents; and
    - B. fit for its intended purpose; and
  - ii) that the asset, device or equipment will be replaced or repaired if it:
    - A. is found to be of a lower quality or standard than specified in the Contract Documents; or
    - B. shows deterioration of such extent that the relevant asset, device or equipment does not achieve fitness for the purpose, whether on account of utility, performance or otherwise.
- d) The Contractor must ensure that all manufacturer's warranties for supplied assets, devices or equipment includes:
- i) a requirement that the manufacturer will bear the cost of any repair or replacement including all freight charges carried out under the warranty; and
  - ii) a strategy acceptable to the Principal for repair or replacement of faulty assets, devices or equipment and specify the time within which any such repairs or replacements must be completed. The strategy must be submitted to the Principal for approval as part of the Construction Documentation.
- e) The Contractor must ensure the benefit of any manufacturer's warranty is passed to the Principal, along with all warranty documentation as part of the Quality Management Records.

## 8 Hold Points and Witness Points

- a) Table PC-CN3 8-1 details the review period or notification period, type (documentation or construction quality) and nominated review parties for each Hold Point referred to in this Master Specification Part.
- b) Table PC-CN3 8-2 details the review period or notification period, type (documentation or construction quality) and nominated review parties for each Witness Point referred to in this Master Specification Part.

**Table PC-CN3 8-1 Hold Point**

Section reference	Hold Point	Documentation or construction quality	Review period, notification period or nominated review parties
3.1d)	Construction Documentation	Documentation	a) 7 Business Days review for Third Parties <sup>(1)</sup> (as applicable) b) 7 Business Days review for Temporary Works Designer(s) (as applicable) c) 10 Business Days review for the Principal <sup>(1)(2)</sup>
5d)	Alternate proprietary products	Documentation	10 Business Days review

**Table notes:**

- (1) Unless required otherwise by a relevant Third Party Agreement, the Principal will have the greater of the time allocated in this table and an additional 3 Business Days beyond the time allowed for in the Third Party Agreement.
- (2) Where the Construction Documentation includes details for traffic control drawings, traffic impact statements or traffic control devices the Principal will have an additional 5 Business Days.

**Table PC-CN3 8-2 Witness Points**

Section reference	Witness Point	Documentation or construction quality	Review period, notification period or nominated review parties
3.1b)	Draft Construction Documentation	Documentation	a) 7 Business Days review for Third Parties <sup>(1)</sup> (as applicable) b) 7 Business Days review for Temporary Works Designer(s) (as applicable) c) 10 Business Days review for the Principal <sup>(1)(2)</sup>

**Table notes:**

- (1) Unless required otherwise by a relevant Third Party Agreement, the Principal will have the greater of the time allocated in this table and an additional 3 Business Days beyond the time allowed for in the Third Party Agreement.
- (2) Where the Draft Construction Documentation includes details for traffic control drawings, traffic impact statements or traffic control devices the Principal will have an additional 5 Business Days.