

Master Specification

Part PC-CN4

Temporary Works

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PC-CN4 Temporary Works

1 General

- a) This Master Specification Part sets out the requirements for the Contractor's Activities in relation to Temporary Works and includes:
 - i) the documentation requirements, as set out in section 2;
 - ii) the requirements for the Temporary Works Co-ordinator, as set out in section 3;
 - iii) the requirements for peer review, as set out in section 4;
 - iv) documentation submission requirements, as set out in section 5;
 - v) the construction verification requirements, as set out in section 6; and
 - vi) the Temporary Works design program requirements, as set out in section 7.
- b) Subject to sections 1c) and 1d), Temporary Works must comply with the requirements of this Master Specification Part, and the design review process set out in PC-EDM1 "Design Management" does not apply unless a requirement of PC-EDM1 "Design Management" has been specifically referred to in this Master Specification Part.
- c) Where the Independent Design Certifier has been engaged in accordance with PC-EDM3 "Independent Design Certification", the requirements of this Master Specification Part do not apply to any Temporary Works that are incorporated into the permanent Works, which must instead comply with the process set out in PC-EDM1 "Design Management" (where relevant).
- d) The requirements of this Master Specification Part do not apply to the following Temporary Works, which must instead comply with the process set out in PC-EDM1 "Design Management" (where relevant):
 - i) all long term staging or detour routes of a semi-permanent nature, including all associated work disciplines being impacted by the staging or detour routes;
 - ii) any road pavement or footpath Temporary Works that are utilised by the public; and
 - iii) all traffic control devices.
- e) The Contractor's Activities in relation to Temporary Works (and any relevant associated Works) must comply with the Engineers Australia Temporary Works Risk Guidelines (available from: <https://twf.engineersaustralia.org.au/publications/>).
- f) Where the Engineers Australia Temporary Works Risk Guidelines refers to the 'Client' or 'Project Manager' those references must be read as obligations for the Contractor.
- g) As a condition precedent to Handover and Completion, the Contractor must remove all Temporary Works that does not form a part of the permanent Works.
- h) The Contractor must ensure that the Designer(s) for both the Works and Temporary Works minimises and reduces the Temporary Works risk SFAIRP, including:
 - i) ensuring that risks identified, including the Consequence of Failure Risk (CFR), Design Complexity Risk (DCR) and Execution Risk (ER), are actively managed and reduced throughout the design process, including for both the Works and Temporary Works design processes;
 - ii) ensuring that the Contractor, including the Works Designer(s), provides:
 - A. adequate information about any significant risks associated with the Works; and
 - B. all details that may be relevant for the Temporary Works Designer(s), including:
 - I. drawings;
 - II. specifications;

- III. site investigations used in the design;
 - IV. data sheets;
 - V. suggested construction sequences; and
 - VI. other information showing particular constraints to the construction process; and
- iii) where the supporting medium of the Temporary Works is the Works, the Contractor must confirm with the Works Designer(s), that the Works are adequate for the temporary use proposed.
- i) Where the Principal has provided the Design Documentation, the Contractor must engage with the Principal as the Works designer as required by this Master Specification Part.

2 Documentation

2.1 Design Management Plan or Construction Management Plan

- a) In addition to the requirements of the Design Management Plan as set out in PC-EDM1 “Design Management”, the Design Management Plan must include in relation to Temporary Works:
- i) details of the organisational structure and roles, responsibilities and delegated authorities in relation to Temporary Works, including interface with the Works and surveillance activities;
 - ii) details of how co-ordination will be undertaken to ensure that reasonable steps are in place for co-operation between the Works and Temporary Works Designer(s), ensuring the risks including CFR, DCR and ER are actively managed and minimised during the design process SFAIRP;
 - iii) the process for how each CFR category will be determined in accordance with the Engineers Australia Temporary Works Risk Guidelines;
 - iv) how each Temporary Works design will be categorised into DCR in accordance with the Engineers Australia Temporary Works Risk Guidelines, including the process of changing a specific DCR categorisation for both the initial design development and any changes made to the initial design;
 - v) how each ER category will be determined in accordance with the Engineers Australia Temporary Works Risk Guidelines;
 - vi) a template of the design brief which as a minimum meets the requirements of Engineers Australia Temporary Works Risk Guidelines;
 - vii) how the Temporary Works design will be developed from the following stages:
 - A. design brief;
 - B. work up of initial concepts;
 - C. shortlisting concepts (including with the Works Designer(s) (where applicable));
 - D. selection of preferred concept;
 - E. concept design;
 - F. detailed design (as applicable); and
 - G. design checking and peer review;
 - viii) details of the process, timing and responsibility for maintaining the Temporary Works design package list;

- ix) details of the selection process for who will undertake the design checking and peer review for each risk category;
 - x) details of the design documentation that will be required for each DCR category, which as a minimum includes the requirements of section 2.2;
 - xi) processes for the checking of the erected Temporary Works and control of their use, maintenance and dismantling (in stages where necessary), to ensure compliance with the Temporary Works design and any hold points will be undertaken;
 - xii) details of the process for how Temporary Works design will be permitted to be loaded and dismantled;
 - xiii) details of the process for how quality assurance records for the Temporary Works will be maintained;
 - xiv) how inspections of the relevant Temporary Works will take place, including the interactions with the Designer, design checker, peer reviewer and Construction Verifier (as applicable); and
 - xv) how audits of the Temporary Works will be undertaken, including of the design process and physical works.
- b) Where the Contract Documents do not require a Design Management Plan, the Contractor must instead include the requirements of section 2.1a) within the Construction Management Plan required by PC-CN3 "Construction Management".

2.2 Temporary Works design documentation

For DCR categories DCR0 to DCR4, the Temporary Works design documentation must include:

- a) a description of the design documentation;
- b) nomination of the Construction Package(s) to which the design documentation relates;
- c) a list of all Reference Documents used in the preparation of the design documentation;
- d) a list of all Design Departures (including their status under the process set out in PC-EDM1 "Design Management");
- e) job-specific risk assessments, as required, for specific structures, including the erection, use, maintenance and dismantling of the Temporary Works in a co-ordinated sequence and controlled manner;
- f) the identified ER category;
- g) the DCR and CFR categories;
- h) the controls and hold points (including detail of the responsible authority to release the hold point) to ensure the ER can be adequately managed by those procuring, constructing, using and removing the Temporary Works;
- i) where appropriate, drawings showing critical stages or sequences of work, identifying when hold points are needed;
- j) where the CFR is category CFR2 or CFR3 detail of how both permanent and Temporary Works Designers have considered the heightened risk profile and demonstrate how the design documentation has been developed accordingly;
- k) details of any instrumentation and monitoring requirements;
- l) evidence that all required design related Approvals have been obtained and provides a list of all Approvals required to be obtained, including in relation to the construction of the relevant Temporary Works;
- m) all design drawings necessary to adequately define the design;
- n) confirmation of acceptance of the design documentation by the construction team; and

- o) all other requirements of the Design Documentation, Design Drawings and Design Reports associated with the relevant Temporary Works as set out in the Contract Documents.

2.3 Construction Documentation

In addition to the requirements of PC-CN3 "Construction Management", the Construction Documentation must include:

- a) site management and supervisory responsibilities;
- b) any controls and hold points (in addition to the Temporary Works design documentation requirements) to ensure the ER can be adequately managed;
- c) a plan (using the Temporary Works design documentation) to define points at which the structure will be checked for compliance with the Temporary Works design documentation; and
- d) the Finalised Temporary Works Design Documentation.

3 Temporary Works Co-ordinator

3.1 General

This section 3 only applies where the Contract Documents require the Contractor to appoint a Temporary Works Co-ordinator.

3.2 Appointment

- a) The Contractor must appoint a Temporary Works Co-ordinator as the first operation in a chain of events culminating in the construction of any Temporary Works scheme.
- b) The Temporary Works Co-ordinator must:
 - i) be competent;
 - ii) have relevant up-to-date training;
 - iii) have both the qualifications and the experience appropriate to the complexity of the project; and
 - iv) fulfil the responsibilities set out in section 3.3.

3.3 Responsibilities

- a) The Temporary Works Co-ordinator must:
 - i) co-ordinate all Temporary Works activities;
 - ii) have appropriate authority to carry out the role;
 - iii) be the first point of contact between the Temporary Works Designer(s) and the site team for all Temporary Works matters;
 - iv) be responsible for the relevant Temporary Works components of the Design Management Plan or Construction Management Plan (as applicable) and maintaining and implementing procedures for the control of Temporary Works being implemented on Site;
 - v) be responsible for ensuring the Temporary Works design is implemented in accordance with the relevant Temporary Works design and Construction Documentation;
 - vi) ensure that the design brief is prepared in accordance with the Design Management Plan or Construction Management Plan (as applicable), and is in accordance with the actual situation on Site;

- vii) ensure that any residual risks, identified at the design stage, assumed methods of construction or loading constraints identified by the Temporary Works Designer(s) of the permanent Works are included in the design brief;
 - viii) ensure that a design check and a peer review (as applicable) is carried out in accordance with the Design Management Plan or Construction Management Plan (as applicable);
 - ix) ensure that a satisfactory Temporary Works design is carried out;
 - x) ensure that those responsible for on-site supervision receive full details of the Temporary Works design and associated Construction Documentation;
 - xi) ensure that any agreed changes, or corrections of faults, are correctly carried out on Site; and
 - xii) ensure that during use of the Temporary Works all appropriate maintenance is carried out.
- b) Unless otherwise agreed with the Principal, the Temporary Works Co-ordinator must not be responsible for the day-to-day progress of the Temporary Works or other project matters.
 - c) Where the Temporary Works Co-ordinator has responsibility for both checking the Temporary Works progress (both design and construction progress), the Contractor must ensure that the Temporary Works Co-ordinator decisions are not compromised by commercial or any other pressures or considerations.

4 Peer review

Where Temporary Works design requires a peer review (in accordance with the Design Management Plan and Engineers Australia Temporary Works Risk Guidelines):

- a) the Contractor must engage a peer reviewer who is independent of the Contractor, including any Designer of the Works and Temporary Works;
- b) the peer reviewer when carrying out the specific duties, must examine project intents, outputs and decisions and must join in a collaborative effort involving the Contractor and the Designer(s) to identify areas where there appear to be good prospects of reducing risks, improving safety, simplifying construction or adding other value to the Project; and
- c) the peer reviewer's duties are to apply their experience to provide insights and suggestions for further assessment but do not extend to fully calculating and checking designs or solutions.

5 Documentation submission

- a) Where the Temporary Works interfaces with a Third Party Asset, the Contractor must ensure that:
 - i) the relevant Third Party reviews and comments on the design brief;
 - ii) the Contractor addresses and incorporates the feedback into the design brief; and
 - iii) the Contractor provides a copy of the amended design brief to the Third Party that addresses the relevant Third Party comments.
- b) The Contractor must ensure that the relevant Temporary Works Designer(s) review the Construction Documentation in accordance with PC-CN3 "Construction Management".
- c) Following finalisation of each initial Temporary Works design and any finalised updates of the Temporary Works design, the Finalised Temporary Works Design Documentation must be issued to the Principal and Construction Verifier (where relevant).
- d) It will be deemed a Non-Conformance (subject to the processes as detailed in PC-QA1 "Quality Management Requirements" or PC-QA2 "Quality Management Requirements for Major Projects" (as applicable)) if construction of Temporary Works occurs prior to the Finalised

Temporary Works Design Documentation in accordance with this Master Specification Part and release of the Construction Documentation Hold Point in accordance with PC-CN3 "Construction Management".

6 Construction verification

Where the Contract Documents require a Construction Verifier, the Construction Verifier must undertake surveillance, inspections, CV Audits and assessments (as appropriate) of the Temporary Works in accordance PC-EDM4 "Construction Verification" and the Construction Verifiers risk-based approach.

7 Temporary Works design program

The Contract Program for Temporary Works design management must include as a minimum:

- a) the milestone dates for the development and submission of each design stage, including the design brief;
 - b) the time allowed for review by all relevant parties;
 - c) design program (Gantt chart) integrated into the construction program;
 - d) design activities, which are correlated with the Contractor work breakdown structure for each discrete element of the Temporary Works; and
 - e) float and the critical path of all Temporary Works Design Packages.
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