

# Structures

## Master Specification

## ST-SC-C6 Formwork

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2	Formatting for publishing	19/09/19
3	Formwork stripping requirements amended	July 2022

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## ST-SC-C6 Formwork

### 1 General

- 1.1 This specifies the requirements for the design, erection and stripping of formwork.
- 1.2 Documents referenced in this Part are listed below:
  - a) AS 3610 Formwork for Concrete
  - b) AS 3972 Portland and Blended Cements
- 1.3 Unless specified otherwise, formwork shall comply with AS 3610 and the definitions in AS 3610 shall apply to this Part (Note that the definition of “formwork” is inclusive of “falsework”).

### 2 Quality Requirements

#### General

- 2.1 The Contractor shall prepare and implement a Quality Plan that includes detailed procedures and documentation for:
  - a) Formwork - design and materials; and
  - b) Formwork documentation (refer AS 3610, Section 4).
- 2.2 If not provided beforehand, the procedures and documentation shall be submitted at least 14 days prior to the commencement of site work. The Contractor shall ensure that the formwork documentation (refer AS 3610, Section 4) is completed and available on site at all times during formwork construction, use and dismantling.
- 2.3 Provision of the procedures and documentation listed in this Clause shall constitute a **Hold Point**.

#### Formwork Design

- 2.4 This sub-clause applies to any formwork where there would be serious consequences (such as a risk to the safety of any person, a delay to work on the critical path or a compromise to the quality of the Works) in the event of the failure of the formwork to perform as intended.
- 2.5 The formwork design shall be certified by a design engineer that the design complies with the requirements of this Contract. The design engineer shall be a Chartered Professional Engineer with qualifications admitting to Corporate Membership of the Institution of Engineers and be experienced in the design of structures / formwork.
- 2.6 Provision of the formwork design shall constitute a **Hold Point**.

### 3 Construction Requirements

#### General

- 3.1 The Contractor shall ensure that the formwork will achieve the requirements of ST-SC-C7 “Placement of Concrete”, Clause 7 “Surface Finish” and Clause 8 “Tolerances”.

#### Stripping Times

- 3.2 Unless otherwise approved, minimum formwork stripping times for vertical faces shall be in accordance with AS 3610, Table 5.4.1. Table 5.4.1 may also be used for stripping times in the case of beam or slab soffits provided that there is compliance with the following conditions:
  - a) The ratio of span between supports (permanent and / or retained temporary) to the overall depth of the member is less than:

- i)  $\frac{280}{\sqrt{D+100}}$
- ii) where D is the overall depth of the section in millimetres;
- b) the concrete conforms with ST-SC-S7 "Supply of Concrete"; and
- c) the concrete has a cementitious component limited to cement type GP or SR complying with AS 3972, without mineral additions to the concrete mix.
- 3.3 Where cement types GB, HE, LH or SL are a component of the concrete or where a percentage of type GP cement has been replaced by flyash in accordance with ST-SC-S7 "Supply of Concrete", Clause 3.1 "Cement", the stripping times given above shall be increased by 48 hours.
- 3.4 For steam cured and hot water cured precast units, stripping times may be reduced in accordance with ST-SC-S4 "Low Pressure Steam Curing of Precast Units" or ST-SC-S5 "Heat Accelerated Curing" as appropriate. In these cases, forms may be removed at the completion of steam curing or hot water curing.
- 3.5 Where a construction joint is to be formed, the stripping time for that face may be reduced to 1 day (time increases as per Clause 3.3 of this Part do not apply in this instance).

## Superimposed Loads

- 3.6 Superimposed loads shall not be placed on concrete slabs cast on top of precast planks or spanning between steel or precast concrete girders until  $0.75 \times$  the characteristic compressive strength of the cast-in-place concrete at 28 days is achieved. Superimposed loads shall be limited to  $2.0 \text{ kN/m}^2$  or a point load of  $2.0 \text{ kN}$  until the characteristic compressive strength of the cast-in-place concrete at 28 days is achieved and until the concrete is at least 14 days old. Unless shown otherwise on the drawings, bridge decks shall be poured in one continuous operation without construction joints.

## Composite Construction

- 3.7 All deck formwork for composite construction shall be completely supported from the superstructure girders except at bearing locations where it may be supported from the sill.

## 4 Hold Points

- 4.1 The following is a summary of Hold Points referenced in this Part:

Document Ref.	Hold Point	Response Time
2.3	Submission of Procedures and formwork documentation	5 Working Days
2.6	Certification of formwork design by Chartered Professional Engineer	5 Working Days