

Master Specification

Part ST-SC-C6

Formwork

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Contents

Contents	3
ST-SC-C6 Formwork	4
1 General	4
2 Documentation	4
3 Formwork design	4
4 Construction requirements	4

ST-SC-C6 Formwork

1 General

- a) This Master Specification Part specifies the requirements for formwork, including:
 - i) the documentation requirements, as set out in section 2;
 - ii) the formwork design requirements, as set out in section 3; and
 - iii) the construction requirements, as set out in section 4.
- b) Formwork must comply with the Reference Documents, including:
 - i) AS 3610 Formwork for concrete; and
 - ii) AS 3972 General purpose and blended cements.

2 Documentation

2.1 Construction Documentation

In addition to the requirements of PC-CN3 “Construction Management”, the Construction Documentation must include the following detailed procedures and documentation:

- a) the proposed formwork design and materials;
- b) evidence of formwork certification and compliance required in section 3b); and
- c) formwork documentation required in section 4.1b).

3 Formwork design

- a) This section 3 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.
- b) Unless otherwise provided as part of the Design Documentation, the Construction Documentation must include evidence that the formwork design has been certified by the Designer that the design complies with the requirements of the Contract Documents.
- c) For the purposes of this Master Specification Part, the Designer in section 3b) must be a Chartered Professional Engineer and be experienced in the design of structures or formwork.

4 Construction requirements

4.1 General

- a) The Contractor must ensure that the formwork will achieve the requirements of ST-SC-C7 “Placement of Concrete”.
- b) The Contractor must ensure that the formwork documentation required by AS 3610 Formwork for concrete, is completed and available on Site at all times during formwork construction, use, and dismantling, and provided as part of the Construction Documentation.

4.2 Stripping times

- a) Minimum formwork stripping times for vertical faces must be in accordance with AS 3610 Formwork for concrete. AS 3610 Formwork for concrete, may be used for stripping times in the case of beam or slab soffits provided that there is compliance with the following conditions:

- i) the ratio of span between supports (permanent or retained temporary) to the overall depth of the member is less than $\frac{280}{\sqrt{D+100}}$, where D is the overall depth of the section in millimetres;
 - ii) the concrete conforms with ST-SC-S7 "Supply of Concrete"; and
 - iii) the concrete has a cementitious component limited to cement type GP or SR complying with AS 3972 General purpose and blended cements, without mineral additions to the concrete mix.
- b) Where the conditions in section 4.2a) are not met, the stripping times required by section 4.2a) must be increased by 48 hours for beam or slab soffits.
 - c) Subject to section 4.2e), 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", the stripping times required by section 4.2a) must be increased by 48 hours.
 - d) 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.
 - e) Where a construction joint is to be formed, the stripping time for that face may be reduced to 1 day (time increases required by section 4.2c) will not apply in this instance).

4.3 Superimposed loads

- a) Superimposed loads must 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 must be limited to 2.0 kN/m^2 or a point load of 2.0 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.
- b) Unless shown otherwise on the Design Drawings, bridge decks must be poured in one continuous operation without construction joints.

4.4 Composite construction

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