Australian Standard™

Tilt-up concrete construction

Standards Australia

This Australian Standard was prepared by Committee BD-066, Tilt-up Construction. It was approved on behalf of the Council of Standards Australia on 27th May 2003 and published on 23 June 2003.

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PREFACE

This Standard was prepared by the Standards Australia Committee BD-066, Tilt-up Construction, to supersede AS 3850.1—1990, *Tilt-up concrete and precast concrete elements for use in buildings* Part 1: *Safety requirements*, AS 3850.2—1990, *Tilt-up concrete and precast concrete elements for use in buildings* Part 2: *Guide to design, casting and erection of tilt-up panels* and AS 3850.3—1992 *Tilt-up concrete and precast concrete elements for use in buildings* Part 3: *Guide to the erection of precast concrete members* in response to the call from industry to update them and regulatory authorities to expand the requirements relating to safety. The Standard is to be read in conjunction with AS 3600, *Concrete structures*.

Although the Standard has been written primarily to address the construction of concrete buildings using 'tilt-up' panels, the rules may be appropriate for other forms of precast concrete construction.

A 'Tilt-up' panel is defined as 'an essentially flat concrete panel; cast in a horizontal position, usually on-site; initially lifted by rotation about one edge until in a vertical or near-vertical position; transported and lifted into position if necessary; and then stabilized by bracing members until incorporated into the final structure'.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

In the Standard where the word 'shall' is used a mandatory requirement is implied and where the word 'should' is used the requirement is advisory.

This document includes commentary on some of the clauses of the Standard. The commentary directly follows the relevant clause, is designated by 'C' preceding the clause number and is printed in italics in a box. The commentary is for information and guidance and does not form part of the Standard.

CONTENTS

Page

Page

STANDARDS AUSTRALIA

Australian Standard
Tilt-up concrete construction

S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 SCOPE

This Standard sets out the requirements for the planning, design, casting, transportation and erection of tilt-up panels. Tilt-up panels are essentially flat concrete panels; cast in a horizontal position, usually on-site; initially lifted by rotation about one edge until in a vertical or near-vertical position; transported and lifted into position if necessary; and then stabilized by bracing members until incorporated into the final structure.

This Standard does not apply to other precast concrete members such as columns, beams, flooring panels and façade panels that are not rotated about one edge and/or temporarily braced before being incorporated into the final structure.

C1.1 *Tilt-up construction has traditionally involved casting flat concrete panels on-site adjacent to their final location in the permanent structure.*

Panels for these buildings can also be cast off-site in which case the design and erection requirements including those for cast-in lifting and fixing inserts apply.

It is, therefore, the intent of this document to cover all panels that are cast in a horizontal position and initially lifted by rotation about one edge and stabilized by bracing members until incorporated into the final structure. The operative words in this definition are 'essentially flat' and 'stabilized by bracing members'.

Tilt-up panels may include elements with textured finishes, tapered edges or return corners.

The Standard has been written assuming any task or function specified in this Standard will be carried out by, or under the supervision of, a suitably experienced and competent person.

This Standard is intended to be read in conjunction with AS 3600.

This form of construction is most vulnerable during the period when the panels are erected and are in the braced position before being incorporated into the final structure: this Standard provides specific recommendations aimed at minimising failure/collapse during this time.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1100.501 Technical drawing—Structural engineering drawing

1012 Methods of testing concrete (all parts)

1110 ISO metric precision hexagon bolts and screws (all parts)