Transport Roads & Maritime Services

# Test Method T376

## Moulding of no fines concrete specimens

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# About this release

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| **Title:** | Moulding of no fines concrete specimens |
| **Author:** | Roads and Maritime Services |

# Revision Summary

| Ed/Rev Number | Clause Number | Description of Revision | Authorisation | Date |
|---|---|---|---|---|
| Issue 3 | All | Reformatted Roads and Maritime Services template<br>Changes to Clause 5(c), 5(d) & 5(h), and 7 | S Yuen | August 2016 |
| Ed 2/ Rev 0 | All | Reformatted RMS template | J Friedrich | October 2012 |
| Ed 1/ Rev 0 | All | New Method | D Hazell | July 2010 |

Note that Roads and Maritime Services is hereafter referred to as 'RMS'.

The most recent revision to Test Method T376 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

The revisions to Issue 3 are based on improvements to the procedure to moulding the no fines concrete specimens.

# Test Method T376

# Moulding of no fines concrete specimens

## 1. SCOPE

This test method sets out the procedure for moulding no fines concrete test cylinders of 150 mm diameter.

*NOTE: The method is based in part on British Standard BS 1881: Part 113 that uses test cubes.*

## 2. GENERAL

(a) Specimens produced are 150 mm nominal diameter and 300 mm nominal height.

(b) The following documents are referred to in this Test Method:

(i) AS 1012.1 Sampling of fresh concrete

(ii) AS 1012.2 Preparation of concrete mixes in the laboratory

(iii) AS 1012.8.1 Method of making and curing concrete - Compression and indirect tensile test specimens

(iv) AS 1289.5.1.1 Methods of testing soils for engineering purposes - Soil compaction and density tests - Determination of the dry density/moisture content relation of a soil using standard compactive effort.

(v) Austroads Part 2 Pavement Design Guide, Roads and Maritime Supplement (for the Climatic Zone number).

## 3. APPARATUS

(a) A cylindrical metal mould with the following:

(i) Internal diameter of 150 ± 5 mm.

(ii) Height between 1.95 and 2.05 times the actual diameter of the specimen.

*NOTE: A suitable 150 mm mould assembly is specified in AS 1012.8.1*

(b) A removable collar of about 150 mm high and same internal diameter as the mould.

(c) A suitable detachable base plate.

(d) A 5 ± 0.5 mm thick metal bearing plate with a diameter of 3 to 5 mm less than the internal diameter of the mould, with lifting lugs.

(e) A metal rammer with a 50 ± 0.4 mm face diameter and a drop mass of 2.7 kg ± 0.01 kg and equipped with a suitable device to control the height of drop to a free fall of 300 ± 2.0 mm.

*NOTE: A suitable form of hand apparatus is shown in Figure 2 of AS 1289.5.1.1. Provided the essential dimensions are adhered to, mechanical forms of the apparatus may be used.*

(f) A rigid foundation, on which to compact the specimen (e.g. a concrete floor or a concrete block of at least 100 kg) with suitable attachments for firmly holding the mould base plate assembly during compaction.

(g) Initial and standard moist curing environment according to AS 1012.8.1.

(h) A 300 mm ruler marked in mm or a suitable depth gauge.

(i) A steel straightedge, about 300 mm long, about 25 mm wide and about 3 mm thick, preferably with a bevelled edge.

## 4. PREPARATION

Where the mix is to be prepared in the laboratory, prepare the sample in accordance with AS 1012.2. Otherwise carry out field sampling in accordance with AS 1012.1.

## 5. PROCEDURE

(a) Assemble the mould, collar and base plate, and place the assembly on the rigid foundation.

(b) Place and compact 3 layers of approximately equal thickness in the mould as follows:

(i) Place a layer evenly in the mould. Place the bearing plate on the top of the layer and seat the plate approximately horizontal with light tamping.

(ii) At the centre of the bearing plate, apply 10 blows from the 2.7 kg rammer falling freely from a height of 300 ± 2.0 mm.

(iii) Remove the bearing plate.

(c) Repeat Steps 5(b)((i) to 5(b)((iii) for the second layer.

(d) Repeat Steps 5(b)((i) to 5(b)((iii) for the third layer, but place sufficient concrete in the layer to overfill the top of the mould by up to 10 mm when compacted. Prepare sufficient no fines concrete so that only representative material is used to fill the moulds. Any paste on the bottom of the pan mixer must not be scooped and placed in the mould.

(e) Free the material from around the collar and then carefully remove the collar.

(f) Strike off the specimen to the top of the mould by means of the straightedge. Do not fill the voids with concrete or slurry the surface, and do not carry out any other finishing to the top surface.

(g) Carry out initial curing of the specimen according to AS 1012.8.1 and for the appropriate Climatic Zone.

(h) After initial curing, remove the specimen from the mould, label, and place under standard moist-curing conditions according to AS 1012.8.1 for a period of 7 days ± 6 hr.

## 6. CALCULATIONS

There are no calculations.

## 7. REPORTING

Include the following information and results in the report:

(a) Source of the specimen (i.e. field or laboratory supplied concrete material).

(b) Date, time and location of moulding.

(c) Curing history of specimen:

(i) Climatic Zone.

(ii) Start and finish time of initial curing.

(iii) Start and finish time of moist curing.

(d) Reference to this test method.

http://www.rms.nsw.gov.au/business-industry/partners-suppliers/specifications/volume-1-materials-test-methods.html/

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Customer feedback
Roads and Maritime
Locked Bag 928
North Sydney NSW 2059

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