
International Standard



6276

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Concrete, compacted fresh — Determination of density

Béton frais compacté — Détermination de la masse volumique

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[ISO 6276:1982](#)

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Descriptors : concrete, fresh concrete, compacting, tests, density measurement.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 6276 was developed by Technical Committee ISO/TC 71, *Concrete, reinforced concrete and pre-stressed concrete*, and was circulated to the member bodies in May 1979.

It has been approved by the member bodies of the following countries:

Austria	Germany, F. R.	Romania
Belgium	India	South Africa, Rep. of
Bulgaria	Israel	Spain
Canada	Italy	Sweden
China	Korea, Rep. of	Switzerland
Cuba	Libyan Arab Jamahiriya	United Kingdom
Czechoslovakia	Netherlands	USA
Denmark	New Zealand	USSR
Egypt, Arab Rep. of	Norway	Yugoslavia
France	Poland	

The member body of the following country expressed disapproval of the document on technical grounds :

Australia

Concrete, compacted fresh — Determination of density

1 Scope and field of application

This International Standard specifies a method of determining the density of compacted fresh concrete. It is applicable to lightweight¹⁾, normal weight and heavy weight concrete.

2 Reference

ISO 2736, *Concrete — Sampling, making and curing of test specimens.*²⁾

3 Definition

For the purpose of this International Standard, the following definition applies.

density : The ratio of the mass of a given quantity of compacted fresh concrete to its volume, expressed in kilograms per cubic metre.

4 Sampling

Sampling of concrete shall be carried out in accordance with ISO 2736.

5 Apparatus

5.1 Balance, for determination of the mass of the compacted concrete with an accuracy of 0,2 %.

5.2 Container, rigid and watertight, having a capacity V and mass m_1 known to within 0,1 %. The smallest dimension of the container shall be at least four times the maximum nominal size of the aggregate in the concrete, but shall not be less than 100 mm.

6 Procedure

Determine the mass (m_1) of the container (5.2). Fill it with the sample and compact in accordance with ISO 2736. After levelling

the concrete and cleaning the outside of the container, determine the mass of the container and concrete (m_2).

7 Expression of results

The density, ρ , expressed in kilograms per cubic metre, is given by the formula

$$\frac{m_2 - m_1}{V}$$

where

m_1 is the mass, in kilograms, of the container;

m_2 is the mass, in kilograms, of the container and sample;

V is the capacity, in cubic metres, of the container.

Express the result to the nearest 10 kg/m³.

8 Test report

The test report shall include the following information :

- a) a reference to this International Standard;
- b) the density of the fresh concrete;
- c) the composition of the concrete (with description of ingredients);
- d) the dimensions of the container;
- e) the method of sampling;
- f) the method of compaction;
- g) the identification of the sample;
- h) the date of test;
- j) any other remarks.

1) Care is required when this method is applied to porous lightweight concrete.

2) At present at the stage of draft.

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