
INTERNATIONAL STANDARD



3893

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

Concrete — Classification by compressive strength

Béton — Classification selon la résistance à la compression

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Descriptors : concretes, classification, compressive strength.

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 3893 was developed by Technical Committee ISO/TC 71, *Concrete, reinforced concrete and pre-stressed concrete*, and was circulated to the member bodies in July 1975.

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

Australia	Italy	Spain
Austria	Mexico	Switzerland
Bulgaria	Netherlands	Turkey
Canada	Norway	United Kingdom
Chile	Poland	U.S.A.
Czechoslovakia	Portugal	U.S.S.R.
Germany	Romania	
India	South Africa, Rep. of	

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Belgium	Israel
Denmark	Sweden
France	

Concrete – Classification by compressive strength

1 SCOPE

This International Standard establishes a system of classification for concrete according to its characteristic compressive strength at 28 days.

2 FIELD OF APPLICATION

The requirements set out in the table apply to all types of concrete made with cements which are in accordance with the general definition laid down in ISO/R 597.

3 REFERENCES

- ISO/R 597, *Definitions and terminology of cements*.
- ISO 1920, *Concrete tests – Dimensions, tolerances and applicability of test specimens*.
- ISO 2736, *Concrete – Sampling, making and curing of test specimens*.¹⁾
- ISO 4012, *Concrete – Determination of compressive strength of test specimens*.¹⁾

4 DEFINITION

The characteristic strength, indicating the required grade of concrete, is defined as that value of strength below which 5 % of the population of all possible strength measurements of the specified concrete are expected to fall.

5 TEST SPECIMENS

The test specimens shall have the preferred shapes and dimensions specified in ISO 1920 (cylinders ϕ 150 mm \times 300 mm, cubes 150 mm \times 150 mm). The test specimens shall be made and cured according to ISO 2736.

6 CLASSIFICATION

TABLE – Concrete grades according to characteristic compressive strength

The grades given below are described in terms of compressive strength of the test specimens (see ISO 4012), in megapascals, using as the test specimen either the cylinder (ϕ 150 mm \times 300 mm) or the cube (150 mm \times 150 mm).

Concrete grade	Compressive strength at 28 days MPa (N/mm ²)	
	Cylinders ϕ 150 mm \times 300 mm	Cubes 150 mm \times 150 mm
C 2/2,5	2,0	2,5
C 4/5	4,0	5,0
C 6/7,5	6,0	7,5
C 8/10	8,0	10,0
C 10/12,5	10,0	12,5
C 12/15	12,0	15,0
C 16/20	16,0	20,0
C 20/25	20,0	25,0
C 25/30	25,0	30,0
C 30/35	30,0	35,0
C 35/40	35,0	40,0
C 40/45	40,0	45,0
C 45/50	45,0	50,0
C 50/55	50,0	55,0

Higher values than those listed correspond to special concretes.

In any particular country the specification for concrete for supply may be in terms of a single figure according to the type of test specimen used.

7 COMPLIANCE

Concrete shall be judged for compliance by a simple criterion which at a fraction defective of 5 % gives a probability of acceptance of between 50 and 95 %.

1) At present at the stage of draft.

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