
INTERNATIONAL STANDARD



1920

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

Concrete tests — Dimensions, tolerances and applicability of test specimens

Essais des bétons — Dimensions, tolérances et destination des éprouvettes

First edition — 1976-04-15 **TeH STANDARD PREVIEW**
(standards.iteh.ai)

[ISO 1920:1976](#)

<https://standards.iteh.ai/catalog/standards/sist/8a987959-841c-47a7-a859-bbb3e243a142/iso-1920-1976>



UDC 691.32 : 620.115

Ref. No. ISO 1920-1976 (E)

Descriptors : construction materials, concretes, test specimens, dimensions, tests.

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.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 71 has reviewed ISO Recommendation R 1920 and found it technically suitable for transformation. International Standard ISO 1920 therefore replaces ISO Recommendation R 1920-1971 to which it is technically identical.

ISO Recommendation R 1920 was approved by the Member Bodies of the following countries :

Australia	Israel	Portugal
Austria	Italy	Romania
Belgium	Korea, Rep. of	South Africa, Rep. of
Chile	Netherlands	Sweden
Egypt, Arab Rep. of	New Zealand	Turkey
Greece	Norway	United Kingdom
India	Poland	U.S.A.

The Member Bodies of the following countries expressed disapproval of the Recommendation on technical grounds :

France
Germany

The Member Bodies of the following countries disapproved the transformation of ISO/R 1920 into an International Standard :

France
United Kingdom

Concrete tests – Dimensions, tolerances and applicability of test specimens

0 INTRODUCTION

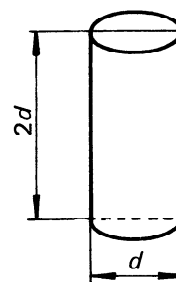
This International Standard is one of a series dealing with concrete testing.

While awaiting the conclusions of present studies intended to eliminate international differences in test conditions for concrete, it has seemed necessary, as a first step, to provide for comparison of test results by fixing specifications for test specimens and limits for their validity.

For that reason this International Standard contains only the essential specifications for :

- the series of nominal dimensions characterizing the categories of test specimens with equal validity;
- the permitted tolerances of shape;
- the applicability of different shapes of test specimen;
- some special rules for the calculation of test results.

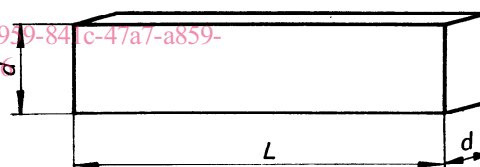
2.2 Cylinders



<i>d</i> , mm	100	150	200	250	300
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A cylinder of load-bearing area 10 000 mm² is also permitted and is given the nominal diameter of 100 mm.

2.3 Prisms



<i>d</i> , mm	100	150	200	250	300
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<i>L</i>	4 <i>d</i>	5 <i>d</i>
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1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the nominal dimensions and tolerances of shape of concrete test specimens in the form of cubes, rectangular cylinders and rectangular prisms with a square cross-section, as well as their respective applicability.

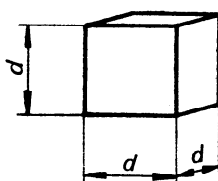
2 DIMENSIONS

The basic size *d* of test specimens used in any country should be within $\pm 10\%$ of the nominal size given below, except as provided under 2.2.

The dimensions printed in bold type are preferable.

For each shape of test specimen, the basic dimension *d* should be chosen at least four times the nominal maximum size of the aggregate in the concrete.

2.1 Cubes



<i>d</i> , mm	100	150	200	250	300
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3 TOLERANCES OF SHAPE

3.1 The tolerance on the flatness of the load-bearing surfaces of cubes and prisms used in all tests, and of cylinders used in compression tests, shall be $0,0005d$.

The tolerance on the generatrix of cylinders used in splitting tests shall be $0,001d$.

3.2 The angle between adjacent faces of cubes and prisms and that between top and bottom surfaces and the generatrix of cylinders shall be $90 \pm 0,5^\circ$.

4 APPLICABILITY OF TEST SPECIMENS

4.1 Cubes

Cubes are used for compression and indirect tension (by splitting) tests on the faces.

4.2 Cylinders

Cylinders are used for tests for axial compression, direct tension and also splitting along the generatrix.

4.3 Prisms

Prisms are used primarily for bending tests; the portions of prisms remaining after bending tests may be used for compression and indirect tension (by splitting) tests.

5 SPECIAL RULES FOR CALCULATION OF TEST RESULTS

If the actual dimensions of the test specimen are within $\pm 1\%$ of the basic size, the strength may be calculated on the basis of the basic size. If the actual dimensions are outside this tolerance, the strength calculation should be based on the actual dimensions of the test specimen, measured to the nearest millimetre.

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