
Testing of concrete —

Part 9:

**Determination of creep of concrete
cylinders in compression**

Essais du béton —

Partie 9: Détermination du fluage de cylindres de béton en compression



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

This document is a preview generated by EVS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2009

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 1920-9 was prepared by Technical Committee ISO/TC 71, *Concrete, reinforced concrete and pre-stressed concrete*, Subcommittee SC 1, *Test methods for concrete*.

ISO 1920 consists of the following parts, under the general title *Testing of concrete*:

- *Part 1: Sampling of fresh concrete*
 - *Part 2: Properties of fresh concrete*
 - *Part 3: Making and curing test specimens*
 - *Part 4: Strength of hardened concrete*
 - *Part 5: Properties of hardened concrete other than strength*
 - *Part 6: Sampling, preparing and testing of concrete cores*
 - *Part 7: Non-destructive tests on hardened concrete*
 - *Part 8: Determination of drying shrinkage of concrete for samples prepared in the field or in the laboratory*
 - *Part 9: Determination of creep of concrete cylinders in compression*
- The following part is under preparation:
- *Part 10: Determination of static modulus of elasticity in compression*

This document is a preview generated by EVS

Testing of concrete —

Part 9:

Determination of creep of concrete cylinders in compression

1 Scope

This part of ISO 1920 specifies a method for determining the creep of standard concrete test cylinders subjected to a sustained longitudinal compressive load.

NOTE The conditions for curing and storage (see 6.1) can be varied to suit different requirements, e.g. early pre-stress. The time of loading (see 6.2) can also be varied to give an indication of other properties. These variations, however, will not conform to the requirements for a creep test as specified in this part of ISO 1920 and it is necessary that any deviation from the standard procedure be recorded in the test report.

2 Normative references

The following referenced documents are essential for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1920-3:2004, *Testing of concrete — Part 3: Making and curing test specimens*

ISO 1920-4:2005, *Testing of concrete — Part 4: Strength of hardened concrete*

ISO 1920-8:2009, *Testing of concrete — Part 8: Determination of drying shrinkage of concrete for samples prepared in the field or in the laboratory*

3 Principle

The creep of the concrete is obtained by determining the total combined creep and drying shrinkage of the loaded specimens and subtracting from this value the drying shrinkage of the unloaded specimens, all specimens being stored in the same environmental conditions. This part of ISO 1920 details the fixed environmental conditions for carrying out the test, which allows comparison with previously tested specimens and specimens tested in other laboratories.

4 Apparatus

4.1 Loading frame, capable of applying and maintaining the required load on the specimen or group of specimens for the duration of the test. The means of maintaining the load may be either a spring or system of springs; alternatively, a hydraulic ram or capsule may be used.

A schematic diagram of a loading frame operated by a hydraulic arrangement is given in Figure 1. A similar arrangement can also be used for a spring-loaded system in which the system of loading only will be different.

NOTE The arrangement shown in Figure 1 employs the vertical loading of specimens. Horizontal loading of specimens is also frequently employed.