



National Standards Authority of Ireland

IRISH STANDARD

**I.S. EN 1354:2005**

ICS 91.100.30

**DETERMINATION OF COMPRESSIVE  
STRENGTH OF LIGHTWEIGHT AGGREGATE  
CONCRETE WITH OPEN STRUCTURE**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 1354**

July 2005

ICS 91.100.30

Supersedes EN 1354:1996

English version

**Determination of compressive strength of lightweight aggregate  
concrete with open structure**

Détermination de la résistance à la compression du béton  
de granulats légers à structure ouverte

Bestimmung der Druckfestigkeit von haufwerksporigem  
Leichtbeton

This European Standard was approved by CEN on 3 June 2005.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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## **Foreword**

This European Standard (EN 1354:2005) has been prepared by Technical Committee CEN/TC 177 “Prefabricated reinforced components of autoclaved aerated concrete or light-weight aggregate concrete with open structure”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2006, and conflicting national standards shall be withdrawn at the latest by January 2006.

This document supersedes EN 1354:1996.

In order to meet the performance requirements as laid down in the product standard for prefabricated components of lightweight aggregate concrete with open structure, a number of standardized test methods are necessary.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

## EN 1354:2005 (E)

### 1 Scope

This European Standard specifies a method of determining the compressive strength of lightweight aggregate concrete with open structure (LAC) according to EN 1520.

The reference test method uses test specimens (cores or cubes) taken from prefabricated components.

Test specimens cast separately in moulds may also be used. This alternative procedure is described in Annex A.

### 2 Normative references

The following referenced documents are indispensable 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.

EN 992, *Determination of the dry density of lightweight aggregate concrete with open structure*

EN 1520, *Prefabricated reinforced components of lightweight aggregate concrete with open structure*

EN 12350-1, *Testing fresh concrete - Part 1: Sampling*

EN 12390-1, *Testing hardened concrete - Part 1: Shape, dimensions and other requirements for specimens and moulds*

EN 12390-2, *Testing hardened concrete - Part 2: Making and curing specimens for strength tests*

EN 12390-4, *Testing hardened concrete - Part 4: Compressive strength - Specification for testing machines*

EN 12504-1, *Testing concrete in structures - Part 1: Cored specimens - Testing, examining and testing in compression*

### 3 Principle

The compressive strength is determined on test specimens taken from prefabricated components. It is defined as the ratio between the rupture load in axial compression and the cross-sectional area of the test specimen.

### 4 Apparatus

- a) A compression testing machine which meets the requirements of EN 12390-4 for testing machines of machine class 1 or 2;
- b) calipers, capable of reading the dimensions of the test specimens to an accuracy of 0,1 mm;
- c) straight-edge (at least as long as the longest diagonal of the test specimen surfaces, in the case of cylinders: at least as long as the generatrices) and a 0,5 mm-feeler gauge;

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