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Údarás um Chaighdeáin Náisiúnta na hÉireann

IRISH STANDARD

**I.S. EN 1097-4:2008**

ICS 91.100.15

**TESTS FOR MECHANICAL AND PHYSICAL  
PROPERTIES OF AGGREGATES - PART 4:  
DETERMINATION OF THE VOIDS OF DRY  
COMPACTED FILLER**

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English Version

**Tests for mechanical and physical properties of aggregates -  
Part 4: Determination of the voids of dry compacted filler**

Essais pour déterminer les caractéristiques mécaniques et  
physiques des granulats - Partie 4: Détermination de la  
porosité du filler sec compacté

Prüfverfahren für mechanische und physikalische  
Eigenschaften von Gesteinskörnungen - Teil 4:  
Bestimmung des Hohlraumgehaltes an trocken  
verdichtetem Füller

This European Standard was approved by CEN on 4 February 2008.

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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 CEN Management Centre has the same status as the official versions.

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## Foreword

This document (EN 1097-4:2008) has been prepared by Technical Committee CEN/TC 154 "Aggregates", the secretariat of which is held by BSI.

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an identical text or by endorsement, at the latest by **September 2008**, and conflicting national standards shall be withdrawn at the latest by **September 2008**.

**Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.**

This document supersedes EN 1097-4:1999.

This European Standard forms part of a series of standards for tests for mechanical and physical properties of aggregates. Test methods for other properties of aggregates will be covered by Parts of the following European Standards:

- EN 932, Tests for general properties of aggregates
- EN 933, Tests for geometrical properties of aggregates
- EN 1367, Tests for thermal and weathering properties of aggregates
- EN 1744, Tests for chemical properties of aggregates
- EN 13179, Tests for filler aggregate used in bituminous mixtures

The other Parts of EN 1097 are:

- Part 1: Determination of the resistance to wear (micro-Deval)
- Part 2: Methods for the determination of resistance to fragmentation
- Part 3: Determination of loose bulk density and voids
- Part 5: Determination of the water content by drying in a ventilated oven
- Part 6: Determination of particle density and water absorption
- Part 7: Determination of the particle density of filler - Pyknometer method
- Part 8: Determination of the polished stone value
- Part 9: Determination of the resistance to wear by abrasion from studded tyres - Nordic test
- Part 10: Determination of water suction height

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

## 1 Scope

This standard describes the reference method used for type testing and in cases of dispute, the determination of the voids of dry compacted filler by means of a Rigden apparatus. For other purposes, in particular factory production control, other methods may be used provided that an appropriate working relationship with the reference method has been established. The test is applicable to natural and manufactured fillers. It is used, for example to determine their bitumen carrying capacity.

## 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 932-2, *Tests for general properties of aggregates - Part 2: Methods for reducing laboratory samples*

EN 932-5, *Tests for general properties of aggregates - Part 5: Common equipment and calibration*

EN 1097-7, *Tests for mechanical and physical properties of aggregates - Part 7: Determination of the particle density of filler - Pyknometer method*

EN 10025 (all parts), *Hot rolled products of non-alloy structural steels*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

**3.1  
percentage air voids**  
volume of air filled space in the filler, expressed as a percentage of the total volume of the filler after compaction by a standard method

**3.2  
laboratory sample**  
reduced sample derived from a bulk sample for laboratory testing

**3.3  
test portion**  
sample used as a whole in a single test

**3.4  
test specimen**  
sample used in a single determination when a test method requires more than one determination of a property

**3.5  
constant mass**  
successive weighings after drying at least 1 h apart not differing by more than 0,1 %

NOTE In many cases constant mass can be achieved after a test portion has been dried for a pre-determined period in a specified oven at  $(110 \pm 5)$  °C. Test laboratories can determine the time required to achieve constant mass for specific types and sizes of sample dependent upon the drying capacity of the oven used.

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