



National Standards Authority of Ireland

IRISH STANDARD

**I.S. CEN/TR 14862:2004**

ICS 91.100.30

**PRECAST CONCRETE PRODUCTS -  
FULL-SCALE TESTING REQUIREMENTS IN  
STANDARDS ON PRECAST CONCRETE  
PRODUCTS**

National Standards  
Authority of Ireland  
Glasnevin, Dublin 9  
Ireland

Tel: +353 1 807 3800  
Fax: +353 1 807 3838  
<http://www.nsai.ie>

**Sales**  
<http://www.standards.ie>

*This Irish Standard was  
published under the  
authority of the National  
Standards Authority of  
Ireland  
and comes into effect on:  
March 4, 2005*

**NO COPYING WITHOUT NSAI  
PERMISSION EXCEPT AS  
PERMITTED BY COPYRIGHT  
LAW**

© NSAI 2004

**Price Code I**

Údarás um Chaighdeán Náisiúnta na hÉireann



TECHNICAL REPORT  
RAPPORT TECHNIQUE  
TECHNISCHER BERICHT

**CEN/TR 14862**

September 2004

---

ICS 91.100.30

English version

**Precast concrete products - Full-scale testing requirements in  
standards on precast concrete products**

Produits préfabriqués en béton - Exigences pour les essais  
en vraie grandeur dans les normes sur les produits  
préfabriqués en béton

Betonfertigteile - Anforderungen an Prüfungen an Bauteilen  
in Originalgröße in den Normen für Betonfertigteile

This Technical Report was approved by CEN on 19 April 2004. It has been drawn up by the Technical Committee CEN/TC 229.

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.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

<b>Contents</b>	<b>Page</b>
Foreword.....	3
Introduction .....	4
1 Scope .....	5
2 References.....	5
3 Terms and definitions .....	5
4 The role of full-scale testing .....	6
4.1 Design using existing calculation models .....	6
4.2 Design assisted by testing .....	7
5 Specification of full-scale testing requirements.....	7
6 Objectives .....	8
6.1 Option or requirement in initial type testing .....	8
6.2 Part of production control .....	8
6.3 Further type testing .....	8
6.4 Technical questions to be clarified .....	9
7 Planning.....	9
7.1 Groups in the product family.....	9
7.2 Sampling techniques.....	10
7.3 Accompanying tests.....	10
8 Interpretation based on prior knowledge.....	10
Annex A (informative) Statistic determination of resistance model .....	12
A.1 Statistical background .....	12
A.1.1 Introduction .....	12
A.1.2 Procedure for initial type testing.....	12
A.1.3 Observed principal result of the procedure .....	13
A.1.4 Procedure for additional testing during production .....	14
A.2 Case study of “design assisted by testing” .....	15
A.2.1 Test data .....	15
A.2.2 Resistance models .....	15
A.2.3 Determination of characteristic values and design values .....	17
A.2.4 Determination of declared values. ....	18
A.2.5 Comments on the test plan and the data interpretation.....	20
Annex B (informative) Provisions for full-scale testing in CEN/TC 229 product standards .....	21
B.1 General.....	21
B.2 Provisions.....	21
B.2.1 Objectives .....	21
B.2.2 Specification and selection of specimens .....	21
B.2.3 Loading conditions.....	22
B.2.4 Measurements.....	23
B.2.5 Test frequency .....	24
B.2.6 Statistical evaluation .....	24
B.2.7 Test report .....	24
B.2.8 Consequences .....	25

## **Foreword**

This document (CEN/TR 14862:2004) has been prepared by Technical Committee CEN/TC 229 "Precast concrete products", the secretariat of which is held by AFNOR.

## CEN/TR 14862:2004 (E)

### Introduction

Any product standard will require a certain amount of testing as part of the evaluation of conformity. The tests may be part of initial type testing or part of production control. It may be tests on materials, dimensions etc. Or it may be tests on the finished product.

The following types of testing may be involved as a part of either initial type testing or production control, [1]:

- a) tests to establish directly the ultimate resistance or serviceability properties of structural parts. Test results are treated as absolute values valid for the group from which the sample was taken;
- b) tests to obtain specific material properties using specified testing procedures;
- c) tests to reduce uncertainties in parameters in load or load effect models;
- d) tests to reduce uncertainties in parameters used in resistance models. Test results are defined as the ratio between measured and calculated values and statistical rules are applied to the ratio;
- e) control tests to check the identity or quality of delivered products or the consistency of the production characteristics;
- f) tests carried out during execution in order to obtain information needed for part of the execution;
- g) control tests to check the behaviour of an actual structure or of structural members after completion.

Testing of full-scale products may be involved in all types of test except type (b).

Testing methods may or may not leave the tested product fit for further use (non-destructive or destructive testing). However, apart from checks on geometrical properties, full-scale testing will usually damage the tested product so that it cannot be used in a structure.

Tests of type (a) do not take into account prior knowledge as easily as type (d) tests. It means that the most effective use of full-scale testing will be (effectively destructive) tests of type (d).

The aim of the report is to assist the standard writers in CEN/TC 229 regime in preparing requirements on full-scale testing in product standards. Initial type testing of a product requires the producer to establish relevant properties of the product. This is often done by means of calculation models given in a standard, but in some cases full-scale testing may be used effectively to reduce uncertainties in these calculation models, maintaining the intended reliability.

The main statistical rules to be followed in this process are given in Eurocode – Basis of structural design (prEN 1990). The report illustrates how these rules may be applied in a product standard.

A practical example concerning hollow core slabs is also given. The test results used in this example were made available from Spenncon AS Hønefoss, Norway.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
  - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-