



National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 13084-1:2007

ICS 91.060.40

**FREE-STANDING CHIMNEYS - PART 1:
GENERAL REQUIREMENTS**

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:
11 April 2007*

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

© NSAI 2007

Price Code M

Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

EN 13084-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2007

ICS 91.060.40

Supersedes EN 13084-1:2000

English Version

Free-standing chimneys - Part 1: General requirements

Cheminées autoportantes - Partie 1 : Exigences générales

Freistehende Schornsteine - Teil 1: Allgemeine Anforderungen

This European Standard was approved by CEN on 23 December 2006.

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

CEN members are the national standards bodies of 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 United Kingdom.



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

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

Contents

Page

Foreword	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Performance requirements; general design	8
4.1 Materials	8
4.2 Flue gas considerations	8
4.2.1 General	8
4.2.2 Design parameters	8
4.2.3 Heat flow calculations	9
4.2.4 Flow calculations	11
4.2.5 Chemical attack	11
4.3 Environmental aspects	13
4.3.1 Noise	13
4.3.2 Temperature	13
4.3.3 Protection against falling ice	14
4.3.4 Gas tightness	14
4.4 Insulation	14
4.5 Ventilation	15
4.6 Protective coatings	15
4.7 Foundation	15
4.8 Accessories	15
4.8.1 Access	15
4.8.2 Lightning protection	16
4.8.3 Aircraft warning system	16
4.8.4 Additional accessories	17
5 Performance requirements: Structural design	17
5.1 Basic design principles	17
5.2 Actions	18
5.2.1 General	18
5.2.2 Permanent actions	18
5.2.3 Variable actions	18
5.2.4 Accidental actions	20
5.3 Imperfections	21
5.4 Foundation	21
5.5 Liner	21
6 Site activities	21
7 Inspection and maintenance	22
8 Instrumentation	22
Annex A (normative) Gas flow calculation	23
A.1 Principal features of the method of calculation	23
A.2 Parameters related to construction type	23
A.2.1 Roughness	23
A.2.2 Thermal resistance	23
A.3 Basic values for the calculation	24

A.3.1	Air temperature	24
A.3.2	Outside air pressure.....	24
A.3.3	Flue gas	24
A.3.4	Gas constant.....	25
A.3.5	Density of outside air	26
A.3.6	Specific heat capacity.....	26
A.3.7	Correction factor for temperature.....	26
A.3.8	Flow safety coefficient.....	26
A.4	Determination of temperatures	27
A.4.1	Flue gas temperatures	27
A.4.2	Coefficient of cooling.....	27
A.4.3	Heat transmission coefficient	27
A.4.4	Internal heat transfer coefficient.....	28
A.5	Density of flue gas.....	29
A.6	Flue gas velocity.....	29
A.7	Pressure at entry of flue gas into chimney	30
A.7.1	Calculation of pressure.....	30
A.7.2	Theoretical draught available due to chimney effect	30
A.7.3	Pressure resistance of the flue gas carrying tube.....	30
A.7.4	Flue friction coefficient.....	31
A.7.5	Individual resistance coefficient	31
A.7.6	Change in pressure due to change of velocity	31
A.7.7	Pressure caused by sudden interruption of the flue gas stream (Implosion)	31
A.8	Minimum velocity	32
Annex B	(informative) Site activities	37
B.1	Execution.....	37
B.2	Programming and coordination of works	37
B.3	Site safety.....	37
B.4	Local conditions	38
Bibliography		39

EN 13084-1:2007 (E)

Foreword

This document (EN 13084-1:2007) has been prepared by Technical Committee CEN/TC 297 “Free- standing industrial chimneys”, 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 August 2007, and conflicting national standards shall be withdrawn at the latest by August 2007.

This document supersedes EN 13084-1:2000

This document is part 1 of a package of standards as listed below.

- EN 13084-1, *Free-standing chimneys - Part 1: General requirements*
- EN 13084-2, *Free-standing chimneys - Part 2: Concrete chimneys*
- EN 13084-4, *Free-standing chimneys - Part 4: Brick liners – Design and execution*
- EN 13084-5, *Free-standing chimneys - Part 5: Material for brick liners - Product specifications*
- EN 13084-6, *Free-standing chimneys - Part 6: Steel liners - Design and execution*
- EN 13084-7, *Free-standing chimneys – Part 7: Product specifications of cylindrical steel fabrications for use in single wall steel chimneys and steel liners*
- EN 13084-8, *Free-standing chimneys – Part 8: Design and execution of mast construction with satellite components*

Additionally applies:

- EN 1993-3-2, *Eurocode 3 - Design of steel structures – Part 3-2: Towers, masts and chimneys – Chimneys*

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 United Kingdom.

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
-