



NSAI
Standards

Irish Standard
I.S. EN 16806-1:2016

Textiles and textile products - Textiles containing phase change materials (PCM) - Part 1: Determination of the heat storage and release capacity

I.S. EN 16806-1:2016

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:

EN 16806-1:2016

Published:

2016-03-09

*This document was published
under the authority of the NSAI
and comes into effect on:*

2016-03-27

ICS number:

59.080.30

NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN 16806-1:2016 is the adopted Irish version of the European Document EN 16806-1:2016, Textiles and textile products - Textiles containing phase change materials (PCM) - Part 1: Determination of the heat storage and release capacity

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This page is intentionally left blank

EUROPEAN STANDARD

EN 16806-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2016

ICS 59.080.30

English Version

Textiles and textile products - Textiles containing phase change materials (PCM) - Part 1: Determination of the heat storage and release capacity

Textiles et produits textiles - Textiles contenant des matériaux à changement de phase (PCM) - Partie 1:
Détermination de la capacité de stockage et de dégagement de chaleur

Textilien und textile Erzeugnisse -
Phasenwechselmaterialien enthaltende Textilien
(PCM) - Teil 1: Bestimmung der Wärmespeicherungs-
und Wärmefreisetzungskapazität

This European Standard was approved by CEN on 15 January 2016.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

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



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
European foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Principle of test.....	5
5 Test equipment, reagents and materials.....	5
6 Test specimens.....	5
7 DSC test procedure	7
8 Calculation of test results.....	7
9 Test report.....	8
Bibliography.....	10

European foreword

This document (EN 16806-1:2016) has been prepared by Technical Committee CEN/TC 248 “Textiles and textile products”, 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 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

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.

EN 16806, Textiles and textile products — Textiles containing phase change materials (PCM), consists of the following parts:

- *Textiles and textile products — Textiles containing phase change materials (PCM) — Part 1: Determination of the heat storage and release capacity*
- *Textiles and textile products — Textiles containing phase change materials (PCM) — Part 2: Determination of the heat transfer using a dynamic method*
- *Textiles and textile products — Textiles containing phase change materials (PCM) — Part 3: Determination of the heat transfer between the user and the product.*

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

EN 16806-1:2016 (E)**1 Scope**

This part of EN 16806 specifies a test method for the determination of the heat storage and heat release capacity and the phase change temperatures of textile fibres, yarns and fabrics (woven and knitted fabrics, nonwovens) containing phase change materials (PCM). The test method can also be applied for pure or micro-encapsulated PCM.

This part of EN 16806 does not apply to the determination of the heat transfer properties of textile fabrics (woven and knitted fabrics, nonwovens) containing phase change materials, for which part 2 of EN 16806 applies.

This part of EN 16806 does not apply to determining the heat transfer between the user and the product for textile products, e.g. garments, mattresses, etc. made with PCM containing materials, for which part 3 of EN 16806 applies.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12127, *Textiles - Fabrics - Determination of mass per unit area using small samples*

EN ISO 139, *Textiles - Standard atmospheres for conditioning and testing (ISO 139)*

EN ISO 11357-1, *Plastics - Differential scanning calorimetry (DSC) - Part 1: General principles (ISO 11357-1)*

EN ISO 11357-3, *Plastics - Differential scanning calorimetry (DSC) - Part 3: Determination of temperature and enthalpy of melting and crystallization (ISO 11357-3)*

3 Terms and definitions

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

3.1**phase change material****PCM**

a substance which is capable of storing and releasing thermal energy in the form of latent heat (enthalpy), over a specific temperature range during which the material changes phase (from solid to liquid or from liquid to solid), thus buffering external temperature changes

Note 1 to entry: These temperature ranges are usually close to skin temperature.

3.2**pure PCM**

PCM in its free form

3.3**micro-encapsulated PCM**

PCM contained in a spherically shaped particle with a closed shell and having a diameter in the range of 1 µm to 1 mm

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
-