



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:

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National Foreword

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EUROPEAN STANDARD

EN 16806-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

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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

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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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of an identical text or by endorsement, at the latest by September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.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.*

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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

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