

**Pakendamine. Nõuded energia
taastootmiseks ümber töödeldavatele
ringluspakenditele, kaasa arvatud
alumise kaloriväärtuse osas
kehtestatud tingimused**

Packaging - Requirements for packaging
recoverable in the form of energy recovery, including
specification of minimum inferior calorific value

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13431:2004 sisaldab Euroopa standardi EN 13431:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 26.10.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13431:2004 consists of the English text of the European standard EN 13431:2004.</p> <p>This document is endorsed on 26.10.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<p>Käsitlusala:</p> <p>This document specifies the requirements for a packaging to be classified as recoverable in the form of energy and sets out procedures for assessment of conformity with those requirements. The scope is limited to factors under the control of the supplier.</p>	<p>Scope:</p> <p>This document specifies the requirements for a packaging to be classified as recoverable in the form of energy and sets out procedures for assessment of conformity with those requirements. The scope is limited to factors under the control of the supplier.</p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

ICS 13.030.99, 55.020

Võtmesõnad:

English version

**Packaging - Requirements for packaging recoverable in the form
of energy recovery, including specification of minimum inferior
calorific value**

Emballage - Exigences relatives aux emballages
valorisables énergétiquement, incluant la spécification
d'une valeur calorifique inférieure minimale

Verpackung - Anforderungen an Verpackungen für die
energetische Verwertung, einschließlich Spezifikation eines
Mindestheizwertes

This European Standard was approved by CEN on 5 May 2004.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

Contents

Page

Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Specification of Minimum Inferior Calorific Value (Minimum Net Calorific Value)	6
5 Requirements	6
6 Procedures	7
Annex A (normative) Determination of Calorific Gain and specification of the theoretical minimum inferior calorific value (minimum net calorific value)	8
Annex B (informative) Derivation of a minimum inferior calorific value (minimum net calorific value) for packaging to allow optimisation of energy recovery in a real industrial system	10
Annex C (informative) Substances and materials liable to have a negative influence on the energy recovery process and materials, combinations of materials or design of packaging liable to create problems during energy recovery	14
Annex D (informative) Example of format for the statement of compliance with this document	15
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 94/62/EC	16
Bibliography	17

Foreword

This document (EN 13431:2004) has been prepared by Technical Committee CEN/TC 261 "Packaging", the secretariat of which is held by AFNOR.

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 January 2005, and conflicting national standards shall be withdrawn at the latest by January 2005.

This document supersedes EN 13431:2000.

This document has been prepared under two mandates given to CEN by the European Commission and the European Free Trade Association, and supports the essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This document forms one of a series of standards and reports prepared under mandates M 200 rev.3 and M/317 given to CEN by the European Commission and the European Free Trade Association to support the European Council and Parliament Directive on Packaging and Packaging Waste [94/62/EC]. The procedure for applying this document in conjunction with the other mandated standards and reports, is specified in EN 13427.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard : 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.

Introduction

The Directive on Packaging and Packaging Waste (94/62/EC) defines requirements for packaging to be considered recoverable. This document amplifies these requirements with respect to energy recovery. The European Standard EN 13427 provides a framework within which this and four other standards may be used together to support a claim that a packaging is in compliance with the essential requirements for packaging to be placed on the market as required by the Directive.

NOTE The Directive 94/62/EC is amended by European Parliament and Council Directive 2004/12/EC of 11 February 2004.

The purpose of packaging is the containment, protection, handling, delivery and presentation of products. Energy recovery of used packaging is one of several recovery options within the overall life cycle of packaging. In order to save resources and minimise waste, the whole system in which the packaging takes part should be optimised. This includes prevention as well as reuse and recovery of packaging waste.

This document presents a framework for assessment to determine whether the requirements of this document have been met. Its approach is similar to that of systems standards such as the EN ISO 9000 series or an environmental management system such as EN ISO 14001.

Since packaging waste used for energy recovery substitutes for other fuels, total system optimisation includes production of heat and/or power. This document defines and specifies the thermodynamic requirements for packaging to allow the incineration with energy recovery of packaging waste, but does not consider the transformation and use of the produced energy. Both packaging and recovery technologies are subject to continuous improvement.

Annex A derives the theoretical concept of calorific gain. Annexes B and C set out supporting regulations as well as conclusions reached during the preparation of the text. It is assumed that the heat generated during the incineration process shall be recovered as far as practicable, but it is outside the Scope of this document to take any standpoint on plant efficiency.

Requirements for substances and materials liable to have a negative influence on the energy recovery process are specified in EN 13428. According to the discussion in Annex C, there is no need for further requirements.

Materials, combinations of materials or design of packaging liable to create problems during energy recovery are discussed in Annex C. It is concluded that packaging design and combination of materials do not create problems for the energy recovery process.

Annex D is an aid to prove compliance with the requirements.

1 Scope

This document specifies the requirements for a packaging to be classified as recoverable in the form of energy and sets out procedures for assessment of conformity with those requirements. The scope is limited to factors under the control of the supplier.

This document cannot by itself provide presumption of conformity. The procedure for applying this document is contained in EN 13427.

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 13193, *Packaging - Packaging and the Environment - Terminology*.

EN 13427, *Packaging - Requirements for the use of European Standards in the field of packaging and packaging waste*.

EN 13428, *Packaging – Requirements specific to manufacturing and composition - Prevention by source reduction*.

CR 13695-1, *Packaging - Requirements for measuring and verifying the four heavy metals and other dangerous substances present in packaging, and their release into the environment - Part 1: Requirements for measuring and verifying the four heavy metals present in packaging*.

CEN/TR 13695-2, *Packaging - Requirements for measuring and verifying the four heavy metals and other dangerous substances present in packaging, and their release into the environment - Part 2: Requirements for measuring and verifying dangerous substances present in packaging, and their release into the environment*.

EN 14182, *Packaging - Terminology - Basic terms and definitions*.

ISO 1171, *Solid mineral fuels - Determination of ash*.

ISO 1928, *Solid mineral fuels - Determination of gross calorific value by the bomb calorimetric method, and calculation of net calorific value*.

Directive 2000/76/EC on the incineration of waste. Directive 2000/76/EC repeals Directive 94/67/EC from December 28, 2005 also for old plants.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13193, EN 13427, EN 14182 and the following apply.

3.1

inferior calorific value (net calorific value), q_{net}

inferior calorific value is a term used in Mandate M 200 rev.3 for the net calorific value, which is defined in ISO 1928 and measured at constant volume

3.2

required energy, H_a

energy necessary to adiabatically heat the post combustion substances of a material and excess air from ambient temperature to a specified final temperature