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Standards

Irish Standard  
I.S. EN 15104:2011

# Solid biofuels - Determination of total content of carbon, hydrogen and nitrogen - Instrumental methods

## I.S. EN 15104:2011

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English Version

## Solid biofuels - Determination of total content of carbon, hydrogen and nitrogen - Instrumental methods

Biocombustibles solides - Détermination de la teneur totale  
en carbone, hydrogène et azote - Méthodes instrumentales

Feste Biobrennstoffe - Bestimmung des Gesamtgehaltes  
an Kohlenstoff, Wasserstoff und Stickstoff - Instrumentelle  
Verfahren

This European Standard was approved by CEN on 25 December 2010.

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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.

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## Foreword

This document (EN 15104:2011) has been prepared by Technical Committee CEN/TC 335 “Solid biofuels”, the secretariat of which is held by SIS.

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of an identical text or by endorsement, at the latest by August 2011, and conflicting national standards shall be withdrawn at the latest by August 2011.

This document supersedes CEN/TS 15104:2005.

In the pre-normative project BIONORM I&II a robustness test has been performed to find out if all critical parameters in the standard were addressed. Based on the results of that test it has been concluded that all critical parameters were covered. Only minor technical changes were necessary which have been implemented in the revised text. The revision also includes a change of deliverable from Technical Specification to European Standard and updated normative references.

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.

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## Introduction

Instrumental methods for the analysis of carbon, hydrogen and nitrogen are now in widespread and in regular use, often in preference to formerly developed chemical methods for which International Standards exist.

The reliable determination of carbon, hydrogen and nitrogen is important for quality control and the results can be used as input parameters for calculations applied to the combustion of solid biofuels. The environmental importance of the nitrogen content is linked to emissions of  $\text{NO}_x$  (formation of fuel  $\text{NO}_x$ ). Hydrogen content is important for calculation of the net calorific value. Carbon content is required for the determination of  $\text{CO}_2$ -emissions.

It is recognized that the Kjeldahl method is most reliable for determining nitrogen contents with a concentration lower than 0,1 %. Possible suitable methods are summarised in the bibliography.

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