

STN	Tuhé biopalivá Stanovenie sorpcie vody a jej účinku na trvanlivosť tepelne spracovaných palív z biomasy Časť 1: Pelety (ISO 23343-1: 2021)	STN EN ISO 23343-1 65 7427
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Solid biofuels - Determination of water sorption and its effect on durability of thermally treated biomass fuels - Part 1: Pellets (ISO 23343-1:2021)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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EUROPEAN STANDARD
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EN ISO 23343-1

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English Version

**Solid biofuels - Determination of water sorption and its
effect on durability of thermally treated biomass fuels -
Part 1: Pellets (ISO 23343-1:2021)**

Biocombustibles solides - Détermination de la sorption
d'eau et de son influence sur la durabilité des
combustibles de biomasse traités thermiquement -
Partie 1: Granulés (ISO 23343-1:2021)

Biogene Festbrennstoffe - Bestimmung der Sorption
und deren Auswirkung auf die Dauerhaftigkeit von
thermisch behandelten Brennstoffen aus Biomasse -
Teil 1: Pellets (ISO 23343-1:2021)

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Contents

Page

European foreword.....	3
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European foreword

This document (EN ISO 23343-1:2021) has been prepared by Technical Committee ISO/TC 238 "Solid biofuels" in collaboration with 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of an identical text or by endorsement, at the latest by November 2021, and conflicting national standards shall be withdrawn at the latest by November 2021.

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Solid biofuels — Determination of water sorption and its effect on durability of thermally treated biomass fuels —

Part 1: Pellets

*Biocombustibles solides — Détermination de la sorption d'eau et de
son influence sur la durabilité des combustibles de biomasse traités
thermiquement —*

Partie 1: Granulés



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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
5 Apparatus	2
6 Sampling and test sample preparation	3
7 Procedure	3
7.1 Testing the as-received moisture content and durability	3
7.2 Sieving procedure.....	3
7.3 Wetting of the sub-samples.....	4
7.4 Determination of moisture content and durability of the post-immersion sub-samples	4
8 Calculations	5
9 Performance characteristics	5
10 Test report	5
Annex A (informative) Performance data	7
Bibliography	9

ISO 23343-1:2021(E)**Foreword**

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 238, *Solid biofuels*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 335, *Solid biofuels*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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Introduction

Thermally treated biomass fuels, particularly in compressed form, are increasingly considered as a replacement of fossil coal or for co-firing in large energy plants for production of heat and/or power. Compressed biomass fuels which are not thermally treated easily absorb moisture; this compromises the durability and generates fines. Thermally treated biomass fuels vary in their affinity to absorb moisture (absorption and/or adsorption – here collectively called sorption) depending on the extent and/or type of thermal treatment, feedstock used to make the product, compression, potential additives used, etc. For this purpose, it is important to understand the degree to which thermally treated compressed solid biofuels are resistant to moisture uptake and the degree to which they maintain durability when exposed to moisture, primarily in the form of rain during outdoor storage.

Thermally treated biomass fuel such as pellets or briquettes may be classified based on these characteristics as suitable or unsuitable to be handled and stored under conditions with limited or no weather protection. This document was developed specifically for the classification of pellets and is not intended to be applicable to other forms of densified fuel (e.g. briquettes). It is intended that other parts will be developed as necessary to apply these principles to other forms of thermally treated biomass fuels.

It should be noted that in large-scale storage of thermally treated biomass fuels the degree of wetting will likely vary within the storage. Therefore, this document is not intended to be used to draw conclusions on the average degree of wetting for any particular storage, but rather provides an indication of the degree to which durability and/or moisture content can be affected under worst case conditions. This method can be used for comparative purposes towards other pelletized thermally treated biomass fuels.

Solid biofuels — Determination of water sorption and its effect on durability of thermally treated biomass fuels —

Part 1: Pellets

1 Scope

This document specifies a method for the determination of water sorption in a laboratory setting and provides a measure for how the durability is impacted as a result of immersion in water. Post-immersion durability reduction is calculated as the difference between the durability of the as-received sample and the durability of the wetted product.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 3310-2, *Test sieves — Technical requirements and testing — Part 2: Test sieves of perforated metal plate*

ISO 14780, *Solid biofuels — Sample preparation*

ISO 16559, *Solid biofuels — Terminology, definitions and descriptions*

ISO 17831-1, *Solid biofuels — Determination of mechanical durability of pellets and briquettes — Part 1: Pellets*

ISO 18134-1, *Solid biofuels — Determination of moisture content — Oven dry method — Part 1: Total moisture — Reference method*

ISO 18134-2, *Solid biofuels — Determination of moisture content — Oven dry method — Part 2: Total moisture — Simplified method*

ISO 18135, *Solid Biofuels — Sampling*

ISO 18846, *Solid biofuels — Determination of fines content in quantities of pellets*

ISO 21945, *Solid biofuels — Simplified sampling method for small scale applications*

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