

Solid recovered fuels - Safe handling and storage of  
solid recovered fuels (ISO 21912:2021)

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 21912:2021 sisaldab Euroopa standardi EN ISO 21912:2021 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 21912:2021 consists of the English text of the European standard EN ISO 21912:2021.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
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English Version

**Solid recovered fuels - Safe handling and storage of solid  
recovered fuels (ISO 21912:2021)**

Combustibles solides de récupération - Sécurité de la  
mise en oeuvre et du stockage de combustibles solides  
de récupération (ISO 21912:2021)

Feste Sekundärbrennstoffe - Sicherer Umgang und  
Lagerung von festen Sekundärbrennstoffen (ISO  
21912:2021)

This European Standard was approved by CEN on 15 February 2021.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## European foreword

This document (EN ISO 21912:2021) has been prepared by Technical Committee ISO/TC 300 "Solid recovered materials, including solid recovered fuels" in collaboration with Technical Committee CEN/TC 343 "Solid Recovered Fuels" the secretariat of which is held by SFS.

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of an identical text or by endorsement, at the latest by September 2021, and conflicting national standards shall be withdrawn at the latest by September 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Endorsement notice

The text of ISO 21912:2021 has been approved by CEN as EN ISO 21912:2021 without any modification.

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## 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](http://www.iso.org/directives)).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 300, *Solid recovered fuels*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

Modern society is based on production and consumption of an enormous variety of products, both for industrial and private use. After its intended use, the product will be disposed as waste by the user and will then enter the chain of waste management which includes a variety of handling, storage and processing/recycling methods.

With production, handling, transportation and storage of SRF (Solid Recovered Fuels) there is always a significant risk of fire and dust explosion. A fire or an explosion provides risks both for human health and the environment and cause large economical losses. It is therefore important that operators throughout the supply chain ensure that there is a developed strategy to prevent fires and to prevent dust explosions, and if a fire should occur, a readiness to handle the fire effectively to reduce the consequences.

Fires will, in addition to economic losses and effects on health and the environment, also have a negative impact on the confidence in the SRF industry and difficulty to obtain insurance coverage might also increase.

In facilities where dry combustible materials are handled such as in SRF facilities, there are several risks present for fires and dust explosions. A typical cause for an ignition of the material is friction heat or impact ignition sources generated within the processing chain. Such ignition sources can be generated due to mechanical wear or break-down, metal pieces and stones, material overfeeding, etc. Most mechanical machines contain moving parts that potentially could generate friction heat high enough to ignite the material. Examples are shredders, conveyors, screening/separation machinery and fans. Other sources causing ignitions are for example hot surfaces, electrical discharges, hot works and self-ignition inside storages.

An ignition source can ignite the material being processed or dust accumulations inside and around the machinery. It is important to take necessary measures for reducing the risk for ignitions. Accumulations of combustible dust are intended to be avoided. However, dust can quickly accumulate to a stage where it can become a significant fire load.

This document provides support, advice and guidance to facility owners, logistics providers, equipment suppliers/manufacturers, consultants, authorities and insurance providers to assess and mitigate different risks when producing, handling and storing SRF.



# Solid recovered fuels — Safe handling and storage of solid recovered fuels

## 1 Scope

This document provides principles and requirements for safe handling, treatment and storage of solid recovered fuels (SRF), prepared from non-hazardous waste, to be used for energy purposes. This document covers process stages from point of acceptance of material to point of delivery of SRF.

This document excludes fuels that are included in the scope of ISO/TC 238 *Solid biofuels* and ISO/TC 28 *Petroleum products and related products of synthetic or biological origin*.

It uses a risk-based approach to determine what safety measures are to be considered.

Although unloading and loading of e.g. vessels, trains or trucks are included, the safety issues following the loading and transport itself are not.

## 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 12100, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ISO 21637:2020, *Solid recovered fuels — Terminology, definitions and descriptions*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21637:2020 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

### 3.1 Parts of the SRF process

#### 3.1.1 baling

process of producing a compressed material bundle or package secured by wires, hoops, cords or similar

#### 3.1.2 belt conveyor

conveyor with an endless belt acting as a carrying and traction element

Note 1 to entry: There are several belt conveyor types, such as; troughed belt conveyor, deep troughed belt conveyor, pipe belt conveyor, walled belt conveyor, flat belt conveyor and radial conveyor.