
Polimerni materiali - Ugotavljanje aerobne biodegradacije neplavajočih plastičnih materialov v vmesnem predelu med morskovo vodo in peščenim sedimentom - Metoda z merjenjem kemijske potrebe po kisiku v zaprtem respirometru (ISO 18830:2016)

Plastics - Determination of aerobic biodegradation of non-floating plastic materials in a seawater/sandy sediment interface - Method by measuring the oxygen demand in closed respirometer (ISO 18830:2016)

iTeh STANDARD PREVIEW

Kunststoffe - Bestimmung der aeroben biologischen Abbaubarkeit von nicht-schwimmenden Kunststoffmaterialien in einer Meerwasser/Sediment-Schnittstelle - Prüfverfahren mittels Messung des Sauerstoffbedarfes in einem geschlossenen Respirometer (ISO 18830:2016)

<https://standards.iteh.ai/catalog/standards/sist/a7204354-b91d-47ba-9b2a-47f62102d147/sist-en-iso-18830-2018>

Plastiques - Détermination de la biodégradation aérobie des matières plastiques immergées à l'interface eau de mer/sédiments sableux - Méthode par mesurage de la demande en oxygène dans un respiromètre fermé (ISO 18830:2016)

Ta slovenski standard je istoveten z: EN ISO 18830:2017

ICS:

83.080.01	Polimerni materiali na splošno	Plastics in general
-----------	--------------------------------	---------------------

SIST EN ISO 18830:2018

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 18830:2018

<https://standards.iteh.ai/catalog/standards/sist/a7204354-b91d-47ba-9b2a-47f62102d147/sist-en-iso-18830-2018>

EUROPEAN STANDARD

EN ISO 18830

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2017

ICS 83.080.01

English Version

Plastics - Determination of aerobic biodegradation of non-floating plastic materials in a seawater/sandy sediment interface - Method by measuring the oxygen demand in closed respirometer (ISO 18830:2016)

Plastiques - Détermination de la biodégradation aérobie des matières plastiques immergées à l'interface eau de mer/sédiments sableux - Méthode par mesurage de la demande en oxygène dans un respiromètre fermé (ISO 18830:2016)

Kunststoffe - Bestimmung des aeroben Bioabbaus von nicht-schwimmenden Kunststoffmaterialien in einer Meerwasser/Sediment-Schnittstelle - Prüfverfahren mittels Messung des Sauerstoffbedarfes in einem geschlossenen Respirometer (ISO 18830:2016)

This European Standard was approved by CEN on 17 October 2017.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	3

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 18830:2018
<https://standards.iteh.ai/catalog/standards/sist/a7204354-b91d-47ba-9b2a-47f62102d147/sist-en-iso-18830-2018>

European foreword

The text of ISO 18830:2016 has been prepared by Technical Committee ISO/TC 61 "Plastics" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 18830:2017 by Technical Committee CEN/TC 249 "Plastics" the secretariat of which is held by NBN.

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 June 2018, and conflicting national standards shall be withdrawn at the latest by June 2018.

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

Endorsement notice

iTeh STANDARD PREVIEW
(standards.iteh.ai)

The text of ISO 18830:2016 has been approved by CEN as EN ISO 18830:2017 without any modification.

[SIST EN ISO 18830:2018](https://standards.iteh.ai/catalog/standards/sist/a7204354-b91d-47ba-9b2a-47f62102d147/sist-en-iso-18830-2018)

<https://standards.iteh.ai/catalog/standards/sist/a7204354-b91d-47ba-9b2a-47f62102d147/sist-en-iso-18830-2018>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 18830:2018

<https://standards.iteh.ai/catalog/standards/sist/a7204354-b91d-47ba-9b2a-47f62102d147/sist-en-iso-18830-2018>

INTERNATIONAL
STANDARD

ISO
18830

First edition
2016-08-15

**Plastics — Determination of aerobic
biodegradation of non-floating
plastic materials in a seawater/
sandy sediment interface — Method
by measuring the oxygen demand in
closed respirometer**

iTeh STANDARD PREVIEW

(standards.iteh.ai)
*Plastiques — Détermination de la biodégradation aérobie des
matières plastiques immergées à l'interface eau de mer/sédiments
sableux — Méthode par mesurage de la demande en oxygène dans un
respiromètre fermé*

SIST EN ISO 18830:2018

<https://standards.iteh.ai/catalog/standards/sist/a7204354-b91d-47ba-9b2a-47f62102d147/sist-en-iso-18830-2018>



Reference number
ISO 18830:2016(E)

© ISO 2016

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN ISO 18830:2018

<https://standards.iteh.ai/catalog/standards/sist/a7204354-b91d-47ba-9b2a-47f62102d147/sist-en-iso-18830-2018>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2016, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents		Page
Foreword		iv
Introduction		v
1 Scope		1
2 Normative references		1
3 Terms and definitions		1
4 Principle		2
5 Test environment		2
6 Reagents		2
7 Apparatus		3
8 Procedure		4
8.1 Test material.....		4
8.2 Reference material.....		4
8.3 Preparation of the sediment.....		4
8.4 Test setup.....		4
8.5 Pre-conditioning phase.....		5
8.6 Start of the test.....		5
8.7 End of the test.....		5
9 Calculation and expression of results		6
9.1 Calculation.....		6
9.2 Visual inspection.....		6
9.3 Expression and interpretation of results.....		6
10 Validity of results		7
11 Test report		7
Annex A (informative) Example of respirometric system based on pressure measurement		8
Bibliography		9

ISO 18830:2016(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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 61, *Plastics*, Subcommittee SC 5, *Physical-chemical properties*.

SIST EN ISO 18830:2018

<https://standards.iteh.ai/catalog/standards/sist/a7204354-b91d-47ba-9b2a-47f62102d147/sist-en-iso-18830-2018>

Introduction

Products made with biodegradable plastics are designed to be recovered by means of organic recycling in composting plants or in anaerobic digesters. The uncontrolled dispersion of biodegradable plastics in natural environments is not desirable. The biodegradability of products cannot be considered as an excuse to spread wastes that should be recovered and recycled. However, test methods to measure rate and level of biodegradation in natural environments (such as soil or the marine environment) are of interest in order to better characterize the behaviour of plastics in these very particular environments. As a matter of fact, some plastics are used in products that are applied in the sea (e.g. fishing gear) and sometimes they can get lost or put willingly in marine environment. The characterization of biodegradable plastic materials can be enlarged by applying specific test methods that enable the quantitative assessment of biodegradation of plastics exposed to marine sediment and seawater.

Plastic products are directly littered or arrive with fresh waters in the pelagic zone (free water). From there, and depending on density, tides, currents, and marine foiling may sink to the sublittoral, and reach the seafloor surface. Many biodegradable plastics have a density higher than 1 and therefore tend to sink. The sediment passes from aerobic to anoxic and finally anaerobic conditions going from the surface (the interface with seawater) into deeper layers, displaying a very steep oxygen gradient.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 18830:2018](https://standards.iteh.ai/catalog/standards/sist/a7204354-b91d-47ba-9b2a-47f62102d147/sist-en-iso-18830-2018)

<https://standards.iteh.ai/catalog/standards/sist/a7204354-b91d-47ba-9b2a-47f62102d147/sist-en-iso-18830-2018>