SLOVENSKI STANDARD
oSIST prEN ISO 4484-1:2021

01-december-2021

Tekstilije in tekstilni izdelki - Mikroplastika iz tekstilnih virov - 1. del: Ugotavljanje izgube materiala iz tkanin med pranjem (ISO/DIS 4484-1:2021)

Textiles and textile products - Microplastics from textile sources - Part 1: Determination of material loss from fabrics during washing (ISO/DIS 4484-1:2021)

Textilien und textile Erzeugnisse - Mikroplastik aus textilen Quellen - Teil 1: Bestimmung des Materialverlusts von textilen Flächengebilden beim Waschen (ISO/DIS 4484-1:2021)

Textiles et produits textiles - Microplastiques d'origines textiles - Partie 1: Détermination des pertes de matière des étoffes pendant le lavage (ISO/DIS 4484-1:2021)

Ta slovenski standard je istoveten z: **prEN ISO 4484-1**

ICS:

13.020.40	Onesnaževanje, nadzor nad onesnaževanjem in ohranjanje	Pollution, pollution control and conservation
59.080.01	Tekstilije na splošno	Textiles in general

oSIST prEN ISO 4484-1:2021 **en,fr,de**

DRAFT INTERNATIONAL STANDARD

ISO/DIS 4484-1

ISO/TC **38**

Secretariat: **JISC**

Voting begins on:
2021-10-29

Voting terminates on:
2022-01-21

Textiles and textile products — Microplastics from textile sources —

Part 1:
Determination of material loss from fabrics during washing

ICS: 59.080.01; 13.020.40

This document is circulated as received from the committee secretariat.

ISO/CEN PARALLEL PROCESSING

Reference number
ISO/DIS 4484-1:2021(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

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 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.

This document was prepared by Technical Committee *[or Project Committee]* ISO/TC *[or ISO/PC]* ###, *[name of committee]*, Subcommittee SC ##, *[name of subcommittee]*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC ###, *[name of committee]*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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.

European foreword

This document (pr ISO 4484-1:2021) has been prepared by Technical Committee CEN/TC 248 “Textiles and textile products”, the secretariat of which is held by BSI.

This document is a working document.

Introduction

There is significant evidence that during laundering of textiles, material loss and fragmentation can occur. These fibre fragments find their way through drainage systems into water courses and oceans, whereupon it is suggested that they are ingested by aquatic life (fish, shellfish, etc.). The purpose of this document is to provide a method of assessment, to be used in laboratories, of the degree to which different fabrics shed fibres and fibre fragments of both synthetic and natural origin. The results obtained by using this standard will enable manufacturers of textile articles to make an informed choice about the type of fabric to use to reduce/minimize shedding as well as to test different methods of manufacture that minimize material loss during use/laundering.

Textiles and textile products — Microplastics from textile sources —

Part 1: Determination of material loss from fabrics during washing

1 Scope

The method provides a means of systematically collecting material loss from fabrics under standardized laundry conditions to achieve comparable and accurate results. The method is designed to assess both synthetic and natural material loss and is a modification of ISO 105-C06.

NOTE in this document any collected debris is assumed to be fibre fragmentation. For better understanding of the composition of this debris please refer to prISO 4484-2.

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 3696:1995, *Water for analytical laboratory use — Specification and test methods (ISO 3696:1987)*

EN 12127:1997, *Textiles - Fabrics — Determination of mass per unit area using small samples*

ISO 105-C06:2010, *Textiles — Tests for colour fastness — Part C06: Colour fastness to domestic and commercial laundering*

ISO 4915:1991, *Textiles — Stitch types — Classification and terminology*

ISO 4916:1991, *Textiles — Seam types — Classification and terminology*

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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 https://www.electropedia.org/

3.1
Fibre
n.—in textiles, a generic term for any one of the various types of matter that form the basic elements of a textile and which are generally characterized by flexibility, fineness and high ratio of length to thickness**Fibre fragment**, n.—a short piece (typically < 5×10^{-3} m long) of textile fibre, broken from the main textile construction

Note 1 to entry: Fibre fragments are of particular concern as aquatic pollutants; they are often incorrectly referred to as “microfibers.”

Microfibre, n.—a fibre with linear density less than 1 denier

Note 2 to entry: Polyester microfibers typically have diameter of < 10^{-5} m; this is a frequently referenced dimension, but not the formal definition of a microfiber.

4 Principle

The test specimen is subjected to an accelerated laundering process under appropriate conditions of temperature, time and mechanical action. The resultant wash liquor is vacuum filtered. Material loss is assessed gravimetrically to approximate material loss during domestic laundering, however, direct correlation has yet to be determined.

5 Reagents

5.1 Water, distilled or grade 3 according to ISO 3696:1995

6 Apparatus

6.1 Nitrile gloves, these must be worn during all stages of method execution to prevent contamination.

6.2 Lab coat, this must be worn during all stages of method execution to prevent contamination.

6.3 Cutting system, e.g. scissors or cutting press.

6.4 Sewing machine, single needle, capable of lock stitch, type 301 as described in ISO 4915:1991 (see Figure 1).

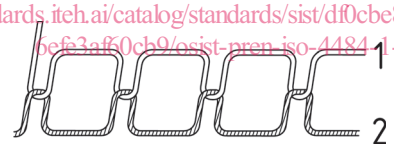

Figure 1 — Stitch type 301 (1, needle thread; 2, bobbin thread) (ISO 4915:1991)

6.5 Sewing needle, size appropriate for sewing thread, point appropriate for specimen fabric.

6.6 Sewing thread, 100 % polyester or nylon continuous filament thread, size appropriate for the specimen fabric.

6.7 Ovens, capable of maintaining (50 ± 3) °C, without air circulation.

6.8 Analytical balance, with a precision of at least 0,1 mg.

6.9 Glass fibre filter, 1,6 µm pore size, 47 mm diameter, no binder.

6.10 Aluminium pans / specimen tray (non-plastic), with a minimum diameter of 47mm to support filter when not in use in the filter assembly.