

Plastics - Polyetheretherketone (PEEK) moulding and extrusion materials - Part 1: Designation system and basis for specifications (ISO 23153-1:2020)

## EESTI STANDARDI EESSÕNA

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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.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 18.03.2020.	Date of Availability of the European standard is 18.03.2020.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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ICS 83.080.20

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English Version

Plastics - Polyetheretherketone (PEEK) moulding and  
extrusion materials - Part 1: Designation system and basis  
for specifications (ISO 23153-1:2020)

Plastiques - Matériaux à base de polyétheréthercétone  
(PEEK) pour moulage et extrusion - Partie 1: Système  
de désignation et base de spécification (ISO 23153-  
1:2020)

Kunststoffe - Polyetheretherketone (PEEK)-Werkstoffe  
- Teil 1: Bezeichnungssystem und Basis für  
Spezifikationen (ISO 23153-1:2020)

This European Standard was approved by CEN on 21 February 2020.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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## European foreword

This document (EN ISO 23153-1:2020) has been prepared by Technical Committee ISO/TC 61 "Plastics" in collaboration with 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of an identical text or by endorsement, at the latest by September 2020, and conflicting national standards shall be withdrawn at the latest by September 2020.

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.

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## Endorsement notice

The text of ISO 23153-1:2020 has been approved by CEN as EN ISO 23153-1:2020 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 61, *Plastics*, Subcommittee SC 9, *Thermoplastic materials*.

A list of all parts in the ISO 23153 series can be found on the ISO website.

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).

# Plastics — Polyetheretherketone (PEEK) moulding and extrusion materials —

## Part 1: Designation system and basis for specifications

### 1 Scope

This document establishes a system of designation for polyetheretherketone (PEEK) moulding and extrusion materials which can be used as the basis for specifications. Polyetheretherketone polymer chains are composed of phenylene rings linked in (1,4) position by a sequence of two ether groups followed by one ketone group.

The grades of PEEK plastics are differentiated from each other by a classification system based on appropriate levels of the designatory properties

- a) melt viscosity or melt volume-flow rate;
- b) tensile modulus;
- c) tensile strength;

and on information about the intended application and/or method of processing, important properties, additives, colorants, fillers and reinforcing materials.

The designation system is applicable to all polyetheretherketones.

It applies to materials ready for normal use in the form of powder, granules or pellets, unmodified or modified by colourants, fillers, reinforcements or other additives.

It is not intended to imply that materials having the same designation necessarily give the same performance. This document does not provide engineering data, performance data or data on processing conditions which can be required to specify a material for a particular application and/or method of processing.

If such additional properties are required, they are intended to be determined in accordance with the test methods specified in ISO 23153-2, if suitable.

In order to specify a thermoplastic material for a particular application or to ensure reproducible processing, additional requirements are given in data block 5 (see [4.1](#)).

### 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 527-1, *Plastics — Determination of tensile properties — Part 1: General principles*

ISO 527-2, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics*

ISO 1043-1, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics*

ISO 1043-2, *Plastics — Symbols and abbreviated terms — Part 2: Fillers and reinforcing materials*

ISO 1133-1, *Plastics — Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics — Part 1: Standard method*

ISO 11443, *Plastics — Determination of the fluidity of plastics using capillary and slit-die rheometers*

### 3 Terms and definitions

No terms and definitions are listed in this document.

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/>

### 4 Designation and specification system

#### 4.1 General

The designation and specification system for thermoplastics is based on the following standardized pattern:

Designation						
Description block (optional)	Identity block					
	International Standard Number block	Individual-item block				
		Data block 1	Data block 2	Data block 3	Data block 4	Data block 5

The designation consists of an optional description block, reading “Thermoplastics”, and an identity block comprising the International Standard number and an individual-item block. For unambiguous designation, the individual-item block is subdivided into five data blocks comprising the following information:

- Data block 1: Identification of the plastic by its abbreviated term PEEK in accordance with ISO 1043-1 (see 4.2).
- Data block 2: Fillers or reinforcing materials and their nominal content (see 4.3).
- Data block 3: Position 1: Intended application or method of processing (see 4.4).  
Positions 2 to 8: Important properties, additives and supplementary information (see 4.4).
- Data block 4: Designatory properties (see 4.5).
- Data block 5: For the purpose of transforming the designation specified in this document into another specifications, a fifth data block may be added containing additional information.

The first character of the individual-item block shall be a hyphen. The data blocks shall be separated from each other by commas.

If a data block is not used, this shall be indicated by doubling the separation sign, i.e. by two commas (,,).

#### 4.2 Data block 1

In this data block, after the hyphen, the polyetheretherketone plastic is identified by its abbreviated term PEEK in accordance with ISO 1043-1.