

INTERNATIONAL  
STANDARD

**ISO**  
**4440-2**

First edition  
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**Thermoplastics pipes and fittings —  
Determination of melt mass-flow rate —  
Part 2:  
Test conditions**

*Tubes et raccords en matières thermoplastiques — Détermination de  
l'indice de fluidité à chaud en masse —  
Partie 2: Paramètre d'essai*



Reference number  
ISO 4440-2:1994(E)

**ISO 4440-2:1994(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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 4440-2 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 5, *General properties of pipes, fittings and valves of plastic materials and their accessories — Test methods and basic specifications*.

This first edition of ISO 4440-2, together with ISO 4440-1:1994, cancels and replaces ISO 4440:1980, which has been technically revised.

ISO 4440 consists of the following parts, under the general title *Thermoplastics pipes and fittings — Determination of melt mass-flow rate*:

- Part 1: *Test method*
- Part 2: *Test conditions*

Annex A of this part of ISO 4440 is for information only.

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# Thermoplastics pipes and fittings — Determination of melt mass-flow rate —

## Part 2: Test conditions

### 1 Scope

This part of ISO 4440 specifies conditions for the determination of the melt mass-flow rate (MFR) of polyolefin materials from pipes or fittings. It is applicable to all polyolefin materials characterized by such measurements, as detailed in clause 3.

For the test method, see ISO 4440-1.

### 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 4440. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 4440 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4440-1:1994, *Thermoplastics pipes and fittings — Determination of melt mass-flow rate — Part 1: Test method*.

### 3 Test conditions

The test conditions are given in table 1, for the materials detailed therein.

Table 1 — Test parameters

Thermoplastic material	Condition	Test temperature	Nominal mass	Reference time
		$\theta$ °C		$m_{\text{nom}}$ kg
Polyethylene (PE)	4	190	2,160	600
	7	190	21,600	600
	18	190	5,000	600
Polypropylene (PP)	12	230	2,160	600
	18	230	5,000	600
Polybutylene (PB)	4	190	2,160	600
	6	190	10,000	600
	18	190	5,000	600

## **Annex A**

(informative)

### **Bibliography**

- [1] ISO 1133:1991, *Plastics — Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics.*

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**Descriptors:** pipes (tubes), pipe fittings, plastics products, thermoplastic resins, plastic tubes, tests, determination, melting, testing conditions.

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