
**Plastics — Thermoplastic polyester/
ester and polyether/ester elastomers
for moulding and extrusion —**

Part 2:
**Preparation of test specimens and
determination of properties**

*Plastiques — Élastomères thermoplastiques à base de polyester/ester
et polyéther/ester pour moulage et extrusion —*

Partie 2: Préparation des éprouvettes et détermination des propriétés





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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	3
4 Preparation of test specimens	3
4.1 Treatment of the material before moulding.....	3
4.2 Injection moulding.....	4
5 Conditioning of test specimens	4
6 Determination of properties	4
6.1 General.....	4
6.2 Shore D hardness ≤ 25	6
6.2.1 Standard properties and test conditions.....	6
6.2.2 Special properties and test conditions.....	7
6.3 $25 < \text{Shore D hardness} \leq 65$	8
6.3.1 Standard properties and test conditions.....	8
6.3.2 Special properties and test conditions.....	9
6.4 Shore D hardness > 65	11
6.4.1 Standard properties and test conditions.....	11
6.4.2 Special properties and test conditions.....	12
Annex A (informative) Determination of tensile properties	14
Bibliography	17

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 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastic materials*.

This first edition of ISO 20029-2 cancels and replaces ISO 14910-2:2013, which has been technically revised.

A list of all parts in the ISO 20029 series can be found on the ISO website.

Introduction

The structure of thermoplastic elastomer material standards is based on the following considerations.

For each type of thermoplastic elastomer, reference is made to the relevant material standard.

Thermoplastic-elastomer materials are classified into three classes according to the primary elastomeric property, hardness, as shown in [Figure 1](#) below. This classification on the basis of hardness reflects the special position of thermoplastic elastomers between rubber materials on the one hand and plastics on the other.

Each class is subdivided into standard properties and special properties. The classes have many standard properties and many special properties in common. Furthermore, a standard property in one class can be a special property in another class and vice versa.

Special properties are those properties which are in wide use or of particular significance in the practical characterization of a specific material.

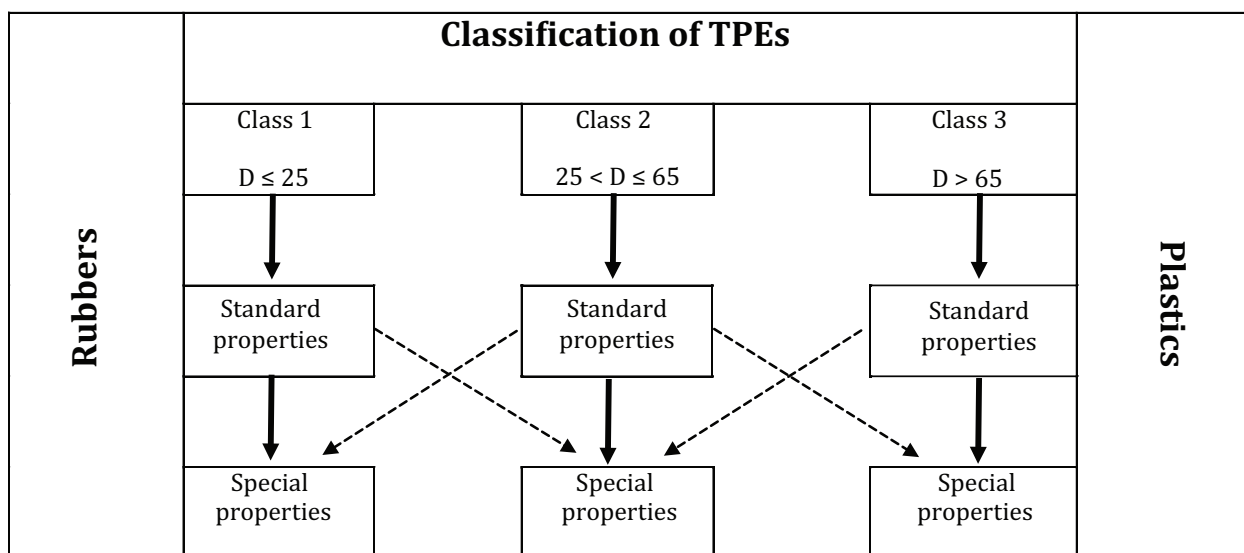


Figure 1 — Classification of thermoplastic elastomers on the basis of their hardness

Plastics — Thermoplastic polyester/ester and polyether/ester elastomers for moulding and extrusion —

Part 2: Preparation of test specimens and determination of properties

1 Scope

This document specifies the methods of preparation of test specimens and the standard test methods to be used in determining the properties of thermoplastic polyester/ester and polyether/ester elastomer moulding and extrusion materials. Requirements for handling test material and/or conditioning both the test material before moulding and the specimens before testing are given.

Procedures and conditions for the preparation of test specimens in a specified state and procedures for measuring properties of the materials from which these specimens are made are given. Properties and test methods which are suitable and necessary to characterize thermoplastic polyester/ester and polyether/ester moulding and extrusion materials are listed.

The properties have been selected from the general test methods in ISO 10350-1. Other test methods in wide use for or of particular significance to these moulding and extrusion materials are also included in this document, as are the designatory properties specified in ISO 20029-1 (hardness, melting temperature and tensile/flexural modulus).

In order to obtain reproducible and comparable test results, it is intended to use the methods of preparation and conditioning, the specimen dimensions and the test procedures specified in this document. Values determined will not necessarily be identical to those obtained using specimens of different dimensions or prepared using different procedures.

This document has been developed on the basis of ISO 10350-1, as at the moment, no standard exists for the acquisition and presentation of comparable single-point data for thermoplastic elastomers. After publication of this document and the analogous document for polyurethanes (ISO 16365-2), it is the intention to develop ISO 10350-3 for the acquisition and presentation of comparable single-point data for thermoplastic elastomers, based on this document and ISO 16365-2, as the basis for the development of thermoplastic-elastomer material standards.

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 34-1:2015, *Rubber, vulcanized or thermoplastic — Determination of tear strength — Part 1: Trouser, angle and crescent test pieces*

ISO 37, *Rubber, vulcanized or thermoplastic — Determination of tensile stress-strain properties*

ISO 62, *Plastics — Determination of water absorption*

ISO 75-2, *Plastics — Determination of temperature of deflection under load — Part 2: Plastics and ebonite*

ISO 178, *Plastics — Determination of flexural properties*