
**Thermoplastics pipes — Longitudinal
reversion —**

Part 2:

Determination parameters

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Tubes en matières thermoplastiques — Retrait longitudinal à chaud —

Partie 2: Paramètres de détermination

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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.

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.

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International Standard ISO 2505-2 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*.

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This first edition of ISO 2505-2, along with ISO 2505-1:1994, cancels and replaces ISO 2505:1981, ISO 2506:1981 and ISO 3478:1975, of which it constitutes a technical revision.

ISO 2505 consists of the following parts, under the general title *Thermoplastics pipes — Longitudinal reversion*:

- Part 1: *Determination methods*
- Part 2: *Determination parameters*

Annexes A and B of this part of ISO 2505 are for information only.

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Thermoplastics pipes — Longitudinal reversion

Part 2:

Determination parameters

1 Scope

This part of ISO 2505 specifies the parameters for the determination of the longitudinal reversion of thermoplastics pipes in accordance with methods A and B specified in ISO 2505-1, i.e. using a liquid bath or an air oven.

This part of ISO 2505 applies to all pipes of thermoplastics material given in clause 3 and 4.

Recommendations for maximum levels of reversion as a function of certain pipe materials are given in annex A.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 2505. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 2505 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1043-1:1987, *Plastics — Symbols — Part 1: Basic polymers and their special characteristics.*

ISO 2505-1:1994, *Thermoplastics pipes — Longitudinal reversion — Part 1: Determination methods.*

3 Parameters for determination using a liquid bath

For the determination of the longitudinal reversion using method A (liquid bath) in accordance with ISO 2505-1, the parameters for the thermoplastics material are given in table 1.

4 Parameters for determination using an air oven

For the determination of the longitudinal reversion using method B (air oven) in accordance with ISO 2505-1, the parameters for the thermoplastics material are given in table 2.

Table 1 — Parameters for the determination using method A

Thermoplastics material ¹⁾	Temperature of the bath T_R °C	Duration of the immersion min	Length of test piece mm
PVC-U	150 ± 2	15 for $e \leq 8$ ²⁾ 30 for $e > 8$	200 ± 20
PVC-C	150 ± 2	15	
PE 32/40	100 ± 2	30	
PE 50/63	110 ± 2		
PE 80/100	120 ± 2		
PE-X			
PB			
PP homopolymers and block copolymers of PP	150 ± 2		
PP random copolymers	135 ± 2		
ABS and ASA	150 ± 2		

1) Symbols in accordance with ISO 1043-1.
2) e is the wall thickness, in millimetres.

Table 2 — Parameters for the determination using an air oven

Thermoplastics material ¹⁾	Oven temperature T_R °C	Duration of exposure in oven min	Length of test piece mm
PVC-U	150 ± 2	60 for $e \leq 8$ ²⁾ 120 for $8 < e \leq 16$ 240 for $e > 16$	200 ± 20
PVC-C	170 ± 2	30	
PE 32/40	100 ± 2	60 for $e \leq 8$ 120 for $8 < e \leq 16$ 240 for $e > 16$	
PE 50/63	110 ± 2		
PE 80/100	110 ± 2		
PE-X	120 ± 2	60 for $e < 8$ 120 for $8 \leq e < 16$ 240 for $e \geq 16$	
PB	110 ± 2	60 for $e \leq 8$ 120 for $8 < e \leq 16$ 240 for $e > 16$	
PP homopolymers and block copolymers of PP	150 ± 2	60 for $e \leq 8$ 120 for $8 < e \leq 16$ 240 for $e > 16$	
PP random copolymers	135 ± 2		
ABS and ASA	150 ± 2	60 for $e \leq 8$ 120 for $8 < e \leq 16$ 240 for $e > 16$	

1) Symbols in accordance with ISO 1043-1.
2) e is the wall thickness, in millimetres.

Annex A

(informative)

Recommended basic specifications for longitudinal reversion

Under the determination conditions in accordance with either method A or B, the calculated value of the longitudinal reversion shall comply with the value given in table A.1.

Table A.1 — Basic specifications of longitudinal reversion

Thermoplastics material	Reversion %	Thermoplastics material	Reversion %
PVC-U	≤ 5	PB	≤ 2
PVC-C	≤ 5	PP homopolymers and block copolymers of PP	≤ 2
PE	≤ 3	PP random copolymers	≤ 2
PE-X	≤ 3	ABS and ASA	≤ 5

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For applications requiring more stringent specifications, a value smaller than the applicable limit given in table A.1 may be adopted.

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Annex B (informative)

Abbreviations

The abbreviations used for the plastic materials are as follows:

ABS	acrylonitrile/butadiene/styrene;
ASA	acrylonitrile/styrene/acrylate;
PB	polybutylene;
PE-32/40	polyethylene MRS 32/40;
PE-50/63	polyethylene MRS 50/63;
PE-80/100	polyethylene MRS 80/100;
PE-X	cross-linked polyethylene;
PVC-C	chlorinated poly(vinyl chloride);
PVC-U	unplasticized poly(vinyl chloride);
PP	polypropylene.

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