
**Assessment of conformity of plastics
piping systems for the rehabilitation
of existing pipelines —**

**Part 1:
Polyethylene (PE) material**

*L'évaluation de la conformité des systèmes de canalisations en
plastique destinés à la réhabilitation des réseaux existantes —*

Partie 1: Matériau Polyéthylène (PE)

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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
3.1 Assessment of conformity.....	3
3.2 Rehabilitation general.....	6
4 Abbreviated terms	7
5 General	8
6 Testing and inspection	8
6.1 Grouping.....	8
6.1.1 General.....	8
6.1.2 Size groups.....	8
6.1.3 Fitting groups.....	9
6.2 Type testing.....	9
6.3 Batch release tests.....	10
6.4 Process verification tests.....	10
6.5 Audit tests.....	10
6.6 Indirect tests.....	10
6.7 Test records.....	11
Annex A (normative) Test procedures for plastics piping systems for the rehabilitation of networks for underground non-pressure drainage and sewerage	12
Annex B (normative) Test procedures for plastics piping systems for the rehabilitation of networks for drainage and sewerage under pressure, and for water and gas supply	20
Annex C (normative) Specification of new system (N), change in design (D), change in material (M) and extension of the product range (E)	37
Annex D (normative) Testing and inspection of fabricated fittings	38
Annex E (normative) Summary tables of scheme requirements	41
Bibliography	44

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).

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This document was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 8, *Rehabilitation of pipeline systems*.

A list of all parts in the ISO/TS 23818 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.

Introduction

System standards dealing with the following applications are either available or in preparation for pipeline rehabilitation:

- ISO 11296, *Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks*;
- ISO 11297, *Plastics piping systems for renovation of underground drainage and sewerage networks under pressure*;
- ISO 11298, *Plastics piping systems for renovation of underground water supply networks*;
- ISO 11299, *Plastics piping systems for renovation of underground gas supply networks*;
- ISO 21225, *Plastics piping systems for the trenchless replacement of underground pipeline networks*.

These system standards are distinguished from those for conventionally installed plastics piping systems by the requirement to verify certain characteristics in the as-installed condition, after site processing. This is in addition to specifying requirements for plastics piping system components as manufactured.

For the assessment of conformity, three Technical Specifications for pipes of distinct materials are applicable:

- ISO/TS 23818-1 (this document), *Assessment of conformity of plastics piping systems for the rehabilitation of existing pipelines — Part 1: Polyethylene (PE) material*;
- ISO/TS 23818-2¹⁾, *Assessment of conformity of plastics piping systems for the rehabilitation of existing pipelines — Part 2: Resin-fibre composite (RFC) material*;
- ISO/TS 23818-3²⁾, *Assessment of conformity of plastics piping systems for the rehabilitation of existing pipelines — Part 3: Unplasticized poly(vinyl chloride) (PVC-U) material*.

These three Technical Specifications cover the system standards, as presented in [Table 1](#).

1) Under preparation. Stage at the time of publication: ISO/WD TS 23818-2:2020.

2) Under preparation. Stage at the time of publication: ISO/WD TS 23818-3:2020

Table 1 — Structure of Technical Specifications for assessment of conformity

Technical Specification	Material	Technique	Application			
			Non-pressure drainage and sewerage networks	Drainage and sewerage networks under pressure	Water supply networks	Gas supply networks
ISO/TS 23818-1	PE	LINING WITH CONTINUOUS PIPES, CLOSE-FIT PIPES AND SPIRALLY WOUND PIPES	ISO 11296-2 ISO 11296-3 ISO 11296-7	ISO 11297-2 ISO 11297-3	ISO 11298-2 ISO 11298-3	ISO 11299-2 ISO 11299-3
		TRENCHLESS REPLACEMENT USING PIPE BURSTING, PIPE EXTRACTION, HORIZONTAL DRILLING AND IMPACT MOLING	ISO 21225-1 ISO 21225-2	ISO 21225-1 ISO 21225-2	ISO 21225-1 ISO 21225-2	ISO 21225-1 ISO 21225-2
ISO/TS 23818-2 ^a	RFC	LINING WITH CURED-IN-PLACE PIPES (CIPP)	ISO 11296-4	ISO 11297-4	ISO 11298-4 ^a	—
ISO/TS 23818-3 ^a	PVC-U	LINING WITH CLOSE-FIT PIPES	ISO 11296-3	—	—	—
		AND SPIRALLY WOUND PIPES	ISO 11296-7	—	—	—

^a Under preparation. Stage at the time of publication: ISO/DIS 11298-4.

The format of the three Technical Specifications is in line with technical specifications for assessment of conformity to other system standards, apart from presenting the detailed requirements for inspection and testing in two annexes, for non-pressure applications and pressure applications (where applicable) respectively.

The format is schematically represented in [Figure 1](#).

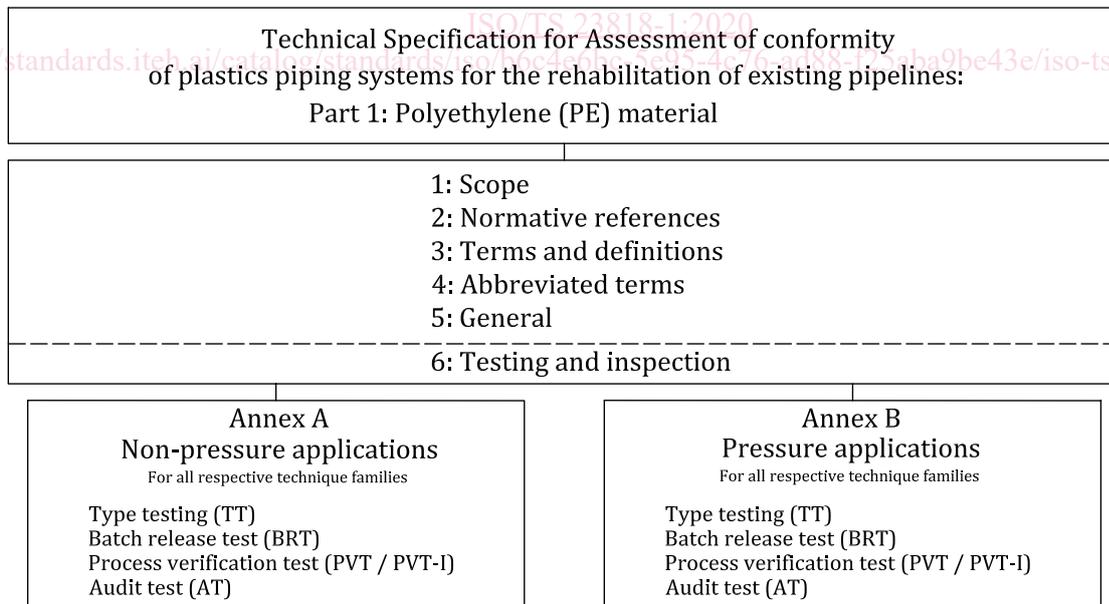


Figure 1 — Format of the Technical Specifications for conformity assessment

[Figures 2](#) and [3](#) are intended to provide general information on the concept of testing and organisation of those tests used for the purpose of the assessment of conformity. For each type of test, i.e. type testing (TT), batch release test (BRT), process verification test (PVT), and audit test (AT), this document details the applicable characteristics to be assessed as well as the frequency and sampling of testing.

A typical scheme for the assessment of conformity of PE pipes, fittings, joints or assemblies by manufacturers is given in [Figure 2](#).

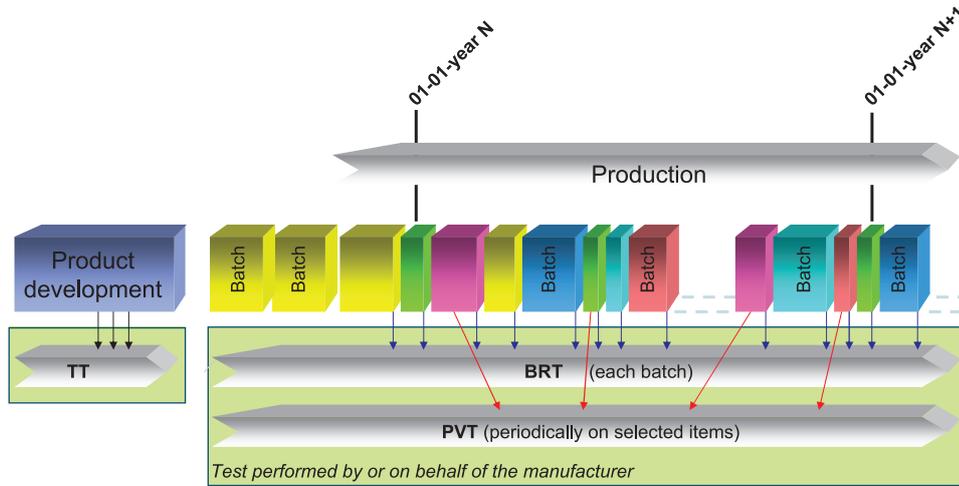


Figure 2 — Typical scheme for the assessment of conformity by a manufacturer

A typical scheme for the assessment of conformity of PE pipes, fittings, joints or assemblies by manufacturers, including certification, is given in [Figure 3](#).

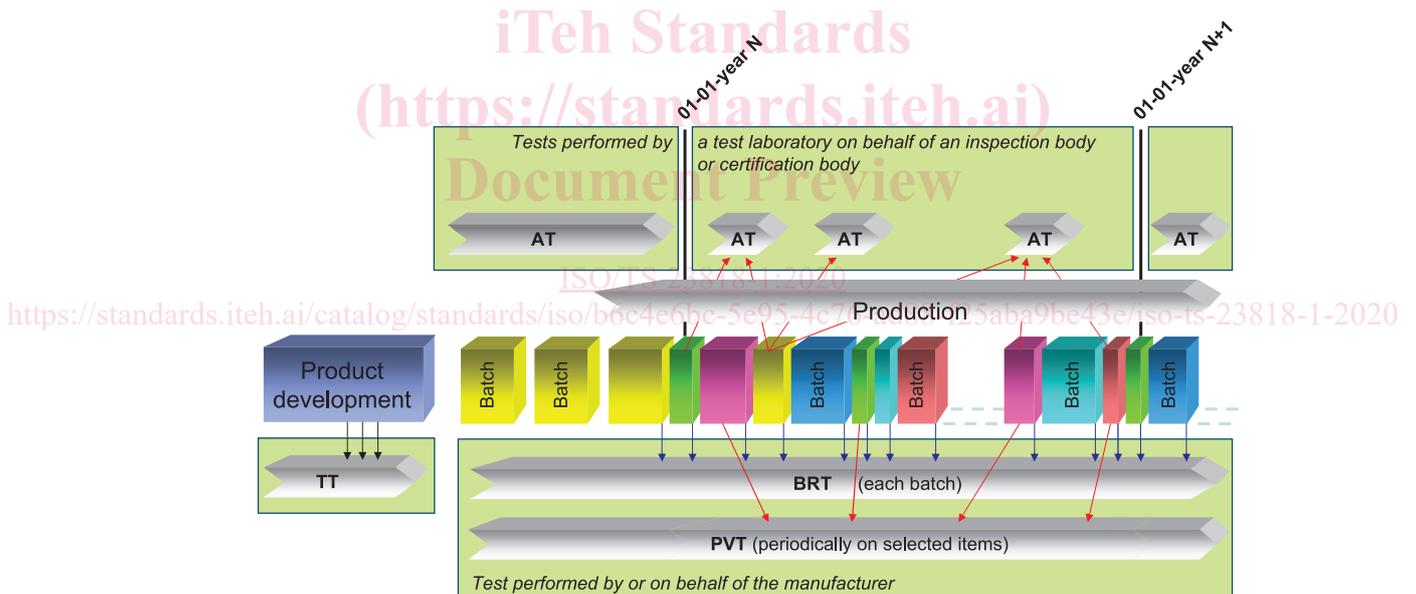


Figure 3 — Typical scheme for the assessment of conformity by a manufacturer, including certification