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Thermoplastics piping systems for underground non-pressure applications — Test method for leaktightness of elastomeric sealing ring type joints

Systèmes de canalisations en thermoplastiques pour applications enterrées sans pression — Méthode d'essai d'étanchéité des assemblages à bague d'étanchéité en élastomère

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Foreword

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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, *Plastic pipes, fittings and valves for the transport of fluids*, Subcommittee SC 1, *Plastics pipes and fittings for soil, waste and drainage (including land drainage)*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 155, *Plastics piping systems and ducting systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 13259:2018), of which it constitutes a minor revision.

The main changes compared to the previous edition are as follows:

— in 8.2, the text was clarified and a calculation error was corrected.

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.

Thermoplastics piping systems for underground non-pressure applications — Test method for leaktightness of elastomeric sealing ring type joints

1 Scope

This document specifies a test method for determining the leaktightness of elastomeric sealing ring type joints for buried thermoplastics non-pressure piping systems.

Unless otherwise specified in the referring standard, the tests are carried out at the following basic test pressures:

— p_1: internal negative air pressure (partial vacuum);

— p_2: a low internal hydrostatic pressure;

— p_3: a higher internal hydrostatic pressure.

It also describes the following four test conditions under which the tests are performed:

a) Condition A: without any additional diametric or angular deflection;

b) Condition B: with diametric deflection;

c) Condition C: with angular deflection;

d) Condition D: with simultaneous angular and diametric deflection.

The applicable selection of the test pressure(s) and the test condition(s) is/are specified in the referring standard.

2 Normative references

There are no normative references in this document.

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 Principle

A test piece assembled from pipes and/or fittings is subjected to a specific initial internal negative air pressure, p_1, followed by a low specific initial internal hydrostatic pressure, p_2, and a higher internal hydrostatic pressure, p_3.

During testing the joint may be subjected to diametric and/or angular deflection(s). The referring product standard shall specify which of the test pressures and deflection conditions have to be carried out.

Each pressure is maintained for a specific period during which the joint is monitored for leakage (see Clause 8).

It is assumed that the following test parameters are set by the referring standard:

a) the test pressure(s), p_1 [see 8.1, item e)], p_2 [see 8.1, item g)] and p_3 [see 8.1, item h)], as applicable, and the percentage of loss of partial vacuum [see 8.1, item e)];

b) the required diametric and angular deflections and their combination with each other and/or the test pressure(s).

5 Apparatus

5.1 General

The apparatus shall consist of a jig or any other arrangement capable of:

a) applying the specified diametric and angular deflection;

b) applying the specified test pressure(s), positive or negative;

c) maintaining the test assembly in the required position throughout the test;

d) resisting the forces resulting from the mass of the water in the test assembly and from the applied hydrostatic test pressure(s) during the test period.

The apparatus shall not otherwise support the joint against the internal test pressure.

A typical arrangement, allowing angular and diametric deflection, is shown in Figure 1.