International Standard

ISO 13956

Plastics pipes and fittings — Decohesion test of polyethylene (PE) saddle fusion joints — Evaluation of ductility of fusion joint interface by tear test

Tubes et raccords en matières plastiques — Essai de décohésion des selles en polyéthylène (PE) assemblées par soudage — Évaluation de la ductilité de l'interface de soudage par essai d'arrachement

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Foreword

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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 5, *General properties of pipes, fittings and valves of plastic materials and their accessories — Test methods and basic specifications*.

This second edition cancels and replaces the first edition (ISO 13956:2010), which has been technically revised.

The main changes are as follows:

— a Note has been added to the scope;

— guidance on assessment of air pockets in the fusion zone has been given in Clause 8, Figure 5 and Figure 6;

— symbols have been aligned with relevant ISO documents;

— Figure 5 has been corrected.

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Plastics pipes and fittings — Decohesion test of polyethylene (PE) saddle fusion joints — Evaluation of ductility of fusion joint interface by tear test

1 Scope

This document specifies a method for the evaluation of the ductility of the fusion joint interface of assemblies of polyethylene (PE) pipe and electrofusion saddles, intended for the conveyance of fluids.

NOTE The applicability of this method depends upon the design of the saddle. If not applicable, the strip-bend test according to ISO 21751[1] is considered an alternative.

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 terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Principle

A load is applied to the saddle of an assembly of an electrofusion saddle fused onto pipe.

The ductility of the fusion joint interface is characterised by the appearance of the failure in the fusion plane and by the determination of the percentage of brittle fracture.

5 Apparatus

5.1 General

The test apparatus shall comprise a tensile equipment type A1 or A2, as indicated in Figures 1 and 2 respectively, or a compressive equipment type B as indicated in Figure 3. For nominal outside pipe diameter ≥ 250 mm, equipment type C as indicated in Figure 4 can be used.

5.2 Tensile test equipment — Type A1 or A2

The tensile equipment shall include the following main parts:

a) **tensile testing machine**, capable of maintaining a speed of (100 ± 10) mm/min, with sufficient force to separate the saddle from the pipe;

b) **loading pin**, with an outside diameter of at least ½ nominal outside diameter of the pipe and allowing rotation;

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