International Standard

ISO 13954

Plastics pipes and fittings — Peel decohesion test for polyethylene (PE) electrofusion assemblies of nominal outside diameter greater than or equal to 90 mm

Tubes et raccords en matières plastiques — Essai de décohésion par pelage des assemblages électrosoudables en polyéthylène (PE) de diamètres extérieurs nominaux supérieurs ou égaux à 90 mm

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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.

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 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 13954:1997), which has been technically revised. It also incorporates the Amendment ISO 13954:1997/Amd. 1:2020.

The main changes are as follows:

— symbols have been aligned with relevant ISO documents, e.g. References [1], [2], [3] and [4];

— allowance for thickness reduction has been introduced for larger diameter fittings;

— guidance on assessment of air pockets in the fusion zone has been given in Clause 9 g) and Table 1;

— photos for fracture surface assessment have been introduced;

— the terms and definitions clause (Clause 3) has been added, and subsequent clauses have been renumbered.

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.

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Plastics pipes and fittings — Peel decohesion test for polyethylene (PE) electrofusion assemblies of nominal outside diameter greater than or equal to 90 mm

1 Scope

This document specifies a test method to assess ductility of the fusion joint interface of polyethylene electrofusion socket assemblies for use in pipe systems for the distribution of fluids. This method is applicable to assemblies, with nominal outside diameters greater than or equal to 90 mm.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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/

3.1
failure
any break of the test piece which is visible to the naked eye

3.2
brittle failure
failure (3.1), showing no plastic deformation in the fusion plane after separation

Note 1 to entry: Brittle failure is characterized by smooth failure surface(s) without any fibrils.

Note 2 to entry: Brittle failure occurs instantaneously at relatively low stresses and strains (low failure energy).

3.3
ductile failure
failure (3.1), showing plastic deformation prior to separation

Note 1 to entry: Ductile failures are characterized by the presence of gross yielding.

Note 2 to entry: Micro-ductile failure often occurs with stress-whitening which may require further investigation using an optical microscope.

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