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INTERNATIONAL STANDARD ISO 3458

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Assembled joints between fittings and polyethylene (PE) pressure pipes — Test of leakproofness under internal pressure

Assemblages entre raccords et tubes sous pression en polyéthylène (PE) — Essai d'étanchéité à la pression intérieure

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3458 was drawn up by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids,* and circulated to the Member Bodies in June 1974.

It has been approved by the Member Bodies of the following countries :

Australia	India	South Africa, Rep. of
Austria	Ireland	Spain
Belgium	Israel	Sweden
Chile	Italy	Switzerland
Czechoslovakia	Mexico	Thailand
Denmark	Netherlands	Turkey
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Finland	Poland	U.S.S.R.
France	Portugal	Yugoslavia
Germany	Romania	

The Member Body of the following country expressed disapproval of the document on technical grounds :

United Kingdom

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Assembled joints between fittings and polyethylene (PE) pressure pipes — Test of leakproofness under internal pressure

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the requirement and method of test for checking the leakproofness of assembled joints (excluding fusion-welded joints) between mechanical fittings and polyethylene (PE) pipes when the internal pressure is greater than that for which the pipe is rated. The test applies regardless of the design and material of the fitting used for jointing polyethylene pipe, and applies to pipe with a nominal diameter up to and including 63 mm (2.480 in).

2 REQUIRED CHARACTERISTICS

The test shall be carried out at an internal hydraulic pressure equal to three times the nominal pressure rating of the pipe. The joint shall remain leakproof for a period of at least 1 h.

3 PRINCIPLE OF TEST

Checking of the leakproofness of an assembled joint when submitted to an internal pressure greater than that for which the pipe is rated.

4 APPARATUS

(A suitable apparatus is shown in the figure.)

4.1 Suitable pressure source connected to the test specimens, capable of maintaining for at least 1 h a minimum water pressure of three times the nominal pressure of the utilized pipes to an accuracy of ± 2 %.

4.2 Pressure gauge, fitted to the apparatus, for checking the test pressure.

5 TEST SPECIMEN

The test specimen shall consist of one or more joints formed by the assembly of at least one fitting and one or more pieces of polyethylene pipe of the size and quality for which the fitting is designed.

Each piece of pipe shall be at least 300 mm (12 in) in length.

One end of the test specimen shall be connected to the pressure source. The other end(s) shall be sealed off in such a way that, when the test pressure is applied, longitudinal stresses are exerted within the pipe wall due to the water pressure acting on the end fittings.

The assembly of the joint should be carried out in accordance with the individual national practices or standards.

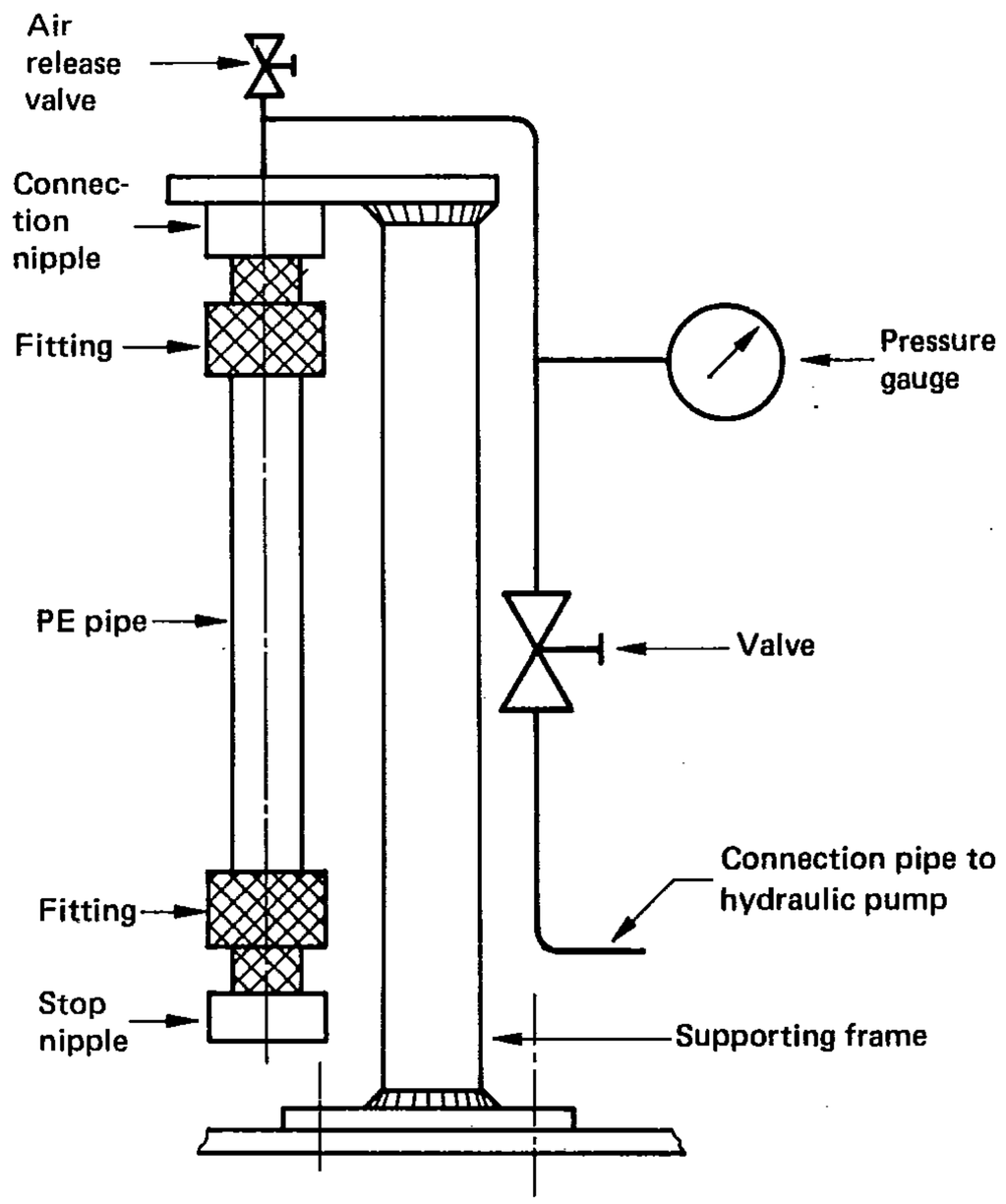

FIGURE — **Diagram of suitable apparatus**

6 PROCEDURE

Fill the test specimen with water at 20 ± 2 °C. Secure the test specimen to the apparatus. Wait 1 h for equalization of temperature.

Ensure that the outside of the test specimen is completely dry. Apply pressure at a steady rate in order to achieve the test pressure in 30 s.

Apply the specified test pressure for at least 1 h, maintaining a constant reading on the pressure gauge. Inspect the test specimen for any sign of leakage at intervals during the test. If the pipe fails in less than 1 h the test shall be repeated.

NOTE — It is necessary to ensure that all air is removed from the test specimen at all stages of preparation prior to the application of the test pressure.

7 TEST REPORT

The test report shall include a reference to this International Standard and shall indicate if any sign of leakage was observed and the pressure at which this occurred.

The test shall be declared satisfactory if no leakage of the joint occurs during the test.