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**Plastics pipes and fittings — Polyethylene  
(PE) tapping tees — Test method for impact  
resistance**

*Tubes et raccords en matières plastiques — Prises de branchement  
en polyéthylène (PE) — Méthode d'essai de la résistance au choc*

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## Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 13957 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*.

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# Plastics pipes and fittings — Polyethylene (PE) tapping tees — Test method for impact resistance

## 1 Scope

This International Standard specifies a test method for the impact resistance of polyethylene (PE) tapping tees.

This International Standard is applicable to PE tapping tees intended for the conveyance of fluids.

## 2 Principle

The cap (or the top of the branch) of a tapping tee is subjected to impact by means of a weight, falling from a constant height, parallel to the axis of the pipe to which the tapping tee is fused.

After two impacts from opposite directions parallel to the axis of the pipe, the tee is inspected for visible damage and for loss of airtightness.

The test is carried out at  $0\text{ °C} \pm 2\text{ °C}$  or another specified temperature.

## 3 Apparatus

**3.1 Falling-weight test machine**, incorporating a main frame with guide bars or a guide tube fixed in the vertical position to guide a striker so that, when the striker is released, it falls vertically and freely and the velocity of the striker at the moment of impact with the tapping tee is not less than 95 % of the theoretical velocity.

**3.2 Striker**, with a mass of  $2\,500\text{ g} \pm 20\text{ g}$  or  $5\,000\text{ g} \pm 20\text{ g}$  and with a hemispherical striking surface of diameter 50 mm.

**3.3 Rigid test piece holder with a steel mandrel**, capable of maintaining the test piece in the position indicated in figure 1 and preventing any rotation of the test piece during the test.

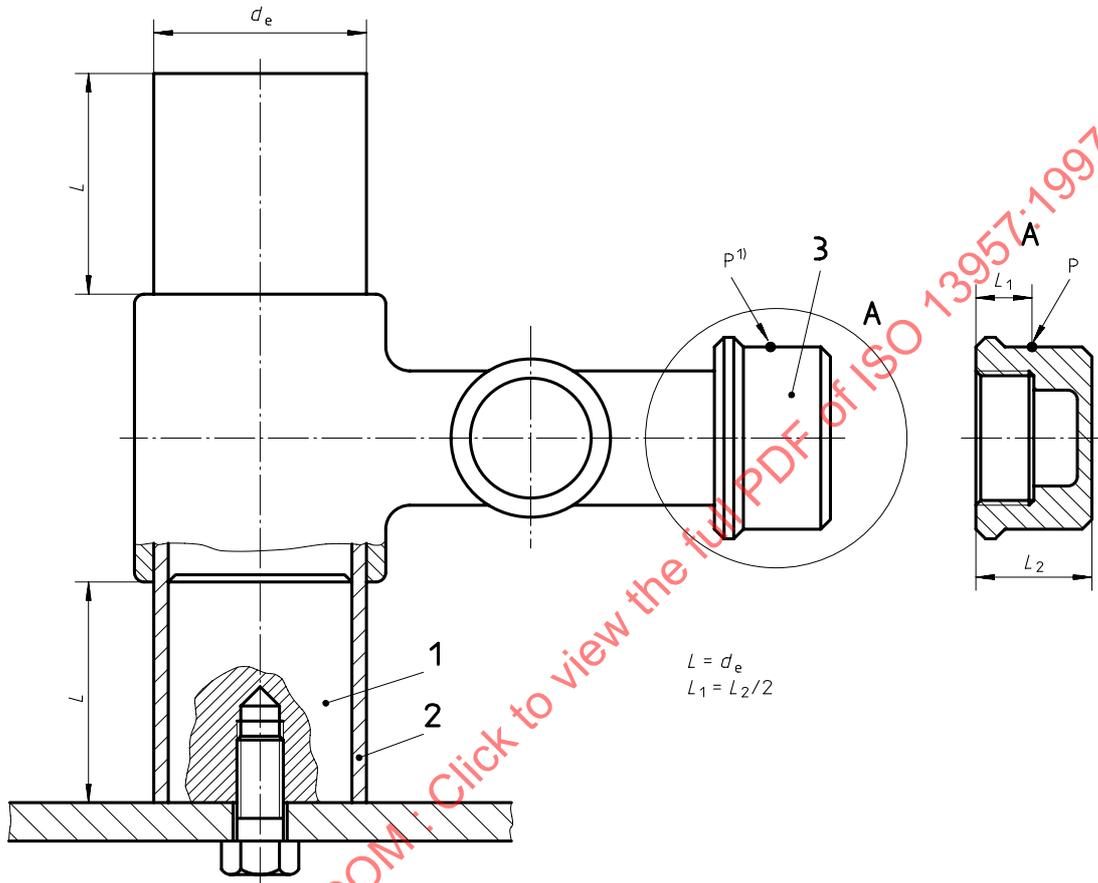
## 4 Test pieces

At least three test pieces shall be tested for any given size of tapping tee.

Each test piece shall comprise a complete pipe/tapping tee assembly in which the length  $L$  is at least equal to  $d_e$  (see figure 1). If necessary, the positioning clamp shall be removed.

All joints shall be assembled in accordance with the tapping tee manufacturer's instructions, including the cutting of the main pipe, or in accordance with instructions given in the relevant standards.

Prior to testing, each test piece shall be checked for airtightness at 25 mbar or 6 bar and at a temperature of  $23\text{ °C} \pm 2\text{ °C}$  (see clause 6).



**Key**

- 1 Steel mandrel
  - 2 Pipe
  - 3 Cap
- 1) P = point of impact

**Figure 1** (given as an example only)

**5 Conditioning**

Not less than 8 h after fusion of the tapping tee to the pipe, condition the test piece at a temperature of  $0\text{ °C} \pm 2\text{ °C}$  for 4 h in air or 2 h in a liquid bath.