## INTERNATIONAL STANDARD



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## Plastics piping systems — Multilayer pipes — Test method for the adhesion of the different layers using a pulling rig

Systèmes de canalisations en plastiques — Tubes multicouches — Méthode d'essai de l'adhérence des différentes couches utilisant un anneau de traction



Reference number ISO 17454:2006(E)

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## Foreword

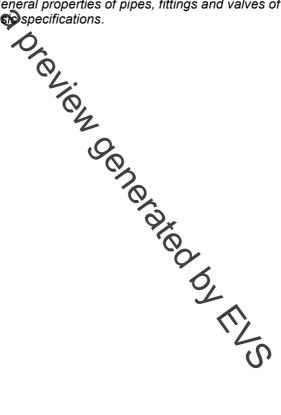
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ISO 17454 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 5, General properties of pipes, fittings and valves of plastic materials and their accessories — Test methods and basis specifications.



### Introduction

In response to the worldwide demand for specifications, requirements and test methods for multilayer pipes, WG 16 of ISO/TC 138/SC 5 was created at a meeting held in Kyoto, Japan, in 1998. The working group then started drafting three test standards (including ISO 17454) for multilayer pipes:

- ISO 17456, Plastics piping systems Multilayer pipes Determination of long-term hydrostatic strength;
- ISO 17455, Plastics piping systems Multilayer pipes Determination of the oxygen permeability of the barrier pipe.

Only multilayer pipes are dealt with in this International Standard and for these purposes cross-linked polyethylene (PE-X) as well as adhesives are to be considered as a thermoplastics material.

# Plastics piping systems — Multilayer pipes — Test method for the adhesion of the different layers using a pulling rig

## 1 Scope

This International Standard specifies a method for testing the adhesion between layers of multilayer pipes using a pulling test rig.

The bond between the metal ayer and the inside (underlying) layer is measured.

#### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited apples. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5893, Rubber and plastics test equipmen — Tensile, flexural and compression types (constant rate of traverse) — Specification

#### 3 Terms and definitions

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

#### 3.1

#### multilayer pipe

pipe comprising layers of different materials

#### 3.2

#### multilayer M pipe

multilayer pipe comprising layers of polymers and one or more metal layer

NOTE The wall thickness of the pipe consists of at least 60 % polymer layers.

#### 3.3

#### inner layer layer in contact with the liquid or gas

#### 3.4

outer layer layer exposed to the outer environment

#### 3.5

#### embedded layer

layer between the outer and inner layer

NOTE There can be more than one embedded layer.