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

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

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 basic 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 layer 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 applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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 layers

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.