

INTERNATIONAL
STANDARD

ISO
17885

First edition
2015-09-01

Plastics piping systems — Mechanical fittings for pressure piping systems — Specifications

Systèmes de canalisations en plastiques — Raccords mécaniques pour les canalisations sous pression — Spécifications



Reference number
ISO 17885:2015(E)

© ISO 2015



COPYRIGHT PROTECTED DOCUMENT

© ISO 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms, definitions, symbols and abbreviated terms	4
3.1 Terms and definitions.....	4
3.2 Symbols and abbreviated terms.....	6
3.2.1 Materials.....	6
3.2.2 Applications.....	7
4 Manufacturers declaration for the field of application	7
5 Material	8
5.1 Plastic materials.....	8
5.2 Metals.....	9
5.3 Elastomers.....	10
5.4 Lubricants and/or greases.....	11
6 General characteristics	11
6.1 Appearance.....	11
6.2 Colour.....	11
6.3 Ultraviolet protection.....	11
6.4 Threads.....	11
6.5 Transition fittings to metal pipes.....	11
6.6 Combined fittings.....	11
6.7 Twisting.....	11
7 Geometrical characteristics	11
8 Physical characteristics	12
8.1 Evaluation of the MRS value of the plastic material.....	12
8.2 Verification of long-term behaviour of the plastic material.....	12
8.3 Specific material related characteristics of fitting materials.....	12
8.4 Application-related characteristics.....	13
8.4.1 Effect on water quality (W).....	13
8.4.2 Resistance to gas constituents (GAS).....	13
8.4.3 Chemical resistance of fittings for industrial applications (IS).....	14
9 Performance requirements	14
9.1 General.....	14
9.2 Pressure resistance of the fitting body.....	15
9.2.1 Preparation of test piece.....	15
9.2.2 Testing of pressure resistance.....	15
9.3 Fitting assemblies.....	15
9.3.1 Preparation of test assemblies.....	15
9.3.2 Test scheme.....	15
9.3.3 Requirements.....	17
10 Marking	27
11 Packaging	27
Annex A (informative) List of standards	28
Annex B (normative) Stiffener requirements	29
Annex C (normative) Test pressure of materials and fitting bodies	30
Annex D (normative) Physical characteristics of fitting materials	32

Annex E (normative) Resistance to gas constituents	37
Annex F (normative) Test stresses	38
Annex G (normative) Cyclic test procedure	40
Bibliography	41

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 4, *Plastics pipes and fittings for the supply of gaseous fuels* in close collaboration with Subcommittee SC 2, *Plastics pipes and fittings for water supplies* and Subcommittee SC 3, *Plastics pipes and fittings for industrial applications*.

This first edition cancels and replaces ISO 10838-1:2000, ISO 10838-2:2000, ISO 10838-3:2001, and ISO 14236:2000, which have been technically revised.

Introduction

This International Standard specifies the requirements for mechanical fittings for joining plastic piping systems for the supply of gaseous fuels, the supply of water for human consumption and other purposes, as well as for industrial application.

It provides a unified set of test methods to check the performance of the fittings, depending on their intended use.

It is the responsibility of the purchaser or specifier to select the appropriate fitting, taking into account their particular requirements and any relevant national guidance or regulations and installation practices or codes.

Products must comply, when existing, with national regulations and testing arrangements that ensure fitness for purpose.

Plastics piping systems — Mechanical fittings for pressure piping systems — Specifications

1 Scope

This International Standard specifies the requirements and test methods for mechanical fittings intended to join plastic pressure piping systems including transition fittings to metal pipes for the following:

- supply of gaseous fuels (GAS);
- supply of water for human consumption (W), including raw water prior to treatment and for the supply of water for general purpose, as well as underground drainage and sewerage under pressure (P);
- supply of water for irrigation (I);
- industrial applications (IS).

This International Standard is applicable only to mechanical fittings with operating-temperature and pressure limits as indicated in the relevant systems standards.

NOTE A list of International Standard for plastic pipes for which mechanical fittings can be used can be found in [Annex A](#).

Flanges are not covered by this International Standard.

Mechanical fittings for hot and cold water systems inside buildings, as well as for district heating applications, are not covered by this International Standard.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 75-2, *Plastics — Determination of temperature of deflection under load — Part 2: Plastics and ebonite*

ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 306, *Plastics — Thermoplastic materials — Determination of Vicat softening temperature (VST)*

ISO 307, *Plastics — Polyamides — Determination of viscosity number*

ISO 472, *Plastics — Vocabulary*

ISO 580:2005, *Plastics piping and ducting systems — Injection-moulded thermoplastics fittings — Methods for visually assessing the effects of heating*

ISO 1043-1, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics*

ISO 1133-1, *Plastics — Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics — Part 1: Standard method*