INTERNATIONAL STANDARD

ISO 13967

Second edition
2009-12-15

Thermoplastics fittings — Determination of ring stiffness

Raccords en matières thermoplastiques — Détermination de la rigidité annulaire

Reference number
ISO 13967:2009(E)

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Published in Switzerland

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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.

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 13967 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*.

This second edition cancels and replaces the first edition (ISO 13967:1998), which has been technically revised.

Thermoplastics fittings — Determination of ring stiffness

1 Scope

This International Standard specifies a method of determining the ring stiffness of bends and branches made from thermoplastic material and for use with plastics pipes having a circular cross-section.

The method can be used to determine the stiffness of bends, equal branches and unequal branches, provided the fitting allows a diametric deflection of at least 4 %.

NOTE 1 If a fitting has the same wall thickness, wall construction, material and diameter as a pipe tested according to ISO 9969, then, because of its geometry, its stiffness can be equal to or greater than that of the pipe. In this case, the fitting can be classified as having the same stiffness class as the pipe, without testing.

NOTE 2 Any unequal branch can be expected to have at least the same stiffness as an equal branch, provided that it has the same main diameter, wall construction and material as the equal branch.

NOTE 3 A reducer having the same wall thickness, wall construction and material in the transition zone as a tested bend or branch can be expected to have at least the same stiffness as the tested bend or branch with the largest diameter of that reducer.

NOTE 4 The result of the test reflects the resistance the fitting has against deflection when installed. Advice on the significance of the test result is given in Annex A.

2 Terms and definitions

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

2.1
ring stiffness
S
mechanical characteristic of a fitting, which is a measure of the resistance to diametric deflection under an external force applied between two parallel planes, as determined in accordance with this International Standard

NOTE 1 This method uses a deflection of 3 % as the reference at which to determine this characteristic.

NOTE 2 Throughout this International Standard, the term “ring stiffness” is used. In ISO 9969 that describes a method of determining the stiffness of a plastics pipe; the word “ring” is appropriate and is used to differentiate the circumferential stiffness or ring stiffness from the axial stiffness or longitudinal stiffness. The pipe test pieces have the shape of rings. Although fittings do not have the shape of rings, to emphasize the relationship between this International Standard and ISO 9969 and to stress that in both cases the stiffness is related to the resistance of the product to diametric deflection, the word “ring” has been retained in this International Standard for the determination of the stiffness of fittings.

2.2
compressive force
compressive load
F
force applied to cause the diametric deflection during testing in accordance with this International Standard

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