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Thermoplastics pipes for the conveyance of fluids — Determination of the stress-rupture resistance of moulding materials using plain strain grooved tensile (PSGT) specimens

Tubes en matières thermoplastiques pour le transport des fluides — Détermination de la résistance à la rupture sous contrainte des matériaux de moulage, au moyen d'éprouvettes de traction rainurées à déformation plane



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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.

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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 23228 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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Introduction

ISO/TC 138 provides test methods for determining the resistance to internal pressure which are essential for assessing the properties and durability of thermoplastics piping system parts. These test methods constitute a basis for the determination of short-term and long-term strength characteristics. However, with regard to moulding materials for pipes and fittings, until the publication of this International Standard, no satisfactory test method has existed in which the material can be exposed to stress conditions that mimic internally pressurized pipes.

The method specified here has been demonstrated to replicate the stress conditions of internally pressurized end-capped pipes by the use of plaque specimen having a reduced section in the form of a groove positioned perpendicular to the uniaxial loading direction. This method is useful for evaluating the stress-rupture resistance of moulding materials and experimental resins being developed for pipes and fittings as well as for those pipes that are difficult to test, such as larger diameter pipes.