
**Thermoplastics pipes for the
transport of fluids — Determination of
Charpy impact properties —**

**Part 1:
General test method**

*Tubes thermoplastiques pour le transport des fluides —
Détermination des caractéristiques au choc Charpy —*

Partie 1: Méthode générale d'essai





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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.

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).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluid*, 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 9854-1:1994), which has been technically revised.

The main changes are as follows:

- the title has been revised;
- in the Scope, Method A has been modified and Method B has been added;
- in [Clause 2](#), ISO 3126 and ISO 13802 have been added;
- in [Clause 3](#), terms and definitions have been added;
- in [Clause 4](#), the principle has been reworded;
- [subclause 5.1](#) has been revised to suit notched specimens;
- [subclause 5.2](#) has been added, specifying the micrometres and gauges for measuring the dimensions of specimens;
- [subclause 5.4](#) has been added, specifying the use of temperature measuring equipment;
- [Figure 3](#) has been modified, extending the support area to stabilize bigger specimens;
- notched specimens have been added in [Table 1](#);
- [subclause 6.2.1](#) has been revised, giving a method of unnotched specimens preparation;
- [subclause 6.2.2](#) has been added to cover the case of notched specimens;

- [Figure 4](#), [Figure 5](#), [Figure 6](#), [Figure 7](#) and [Figure 8](#) have been added;
- [Clause 7](#) has been revised, specifying the period of time prior to testing after the production of the pipe and the requirements of liquid bath and air bath;
- [subclause 8.1](#) has been added, giving the procedure for the test for notched and unnotched specimens;
- [subclause 9.2](#) has been added, giving the expression of results of notched specimens;
- in [Clause 10](#), point j) has been revised, giving the type(s) of failure observed and the number and the percentage of each type of failure;
- in [Clause 10](#), point k) has been added, covering the case of notched specimens.

A list of all parts in the ISO 9854 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document specifies the general method for determining the impact properties of thermoplastics pipes.

The test can be carried out at $-20\text{ }^{\circ}\text{C}$, $0\text{ }^{\circ}\text{C}$ or $23\text{ }^{\circ}\text{C}$, depending on the pipe material and/or size. For the test parameters (i.e. impact energy, specimen dimensions and type of specimen) to be used to determine the pendulum impact strength of pipes, the specifications for specific materials are given in ISO 9854-2, as appropriate.

Data obtained from specimens of different dimensions are not directly comparable.

At present, the ISO 9854 series comprises two parts:

- ISO 9854-1 (this document) gives the general test method under which the impact properties of thermoplastics pipes are to be determined;
- ISO 9854-2 provides specific test parameters to be used to determine the pendulum impact properties of pipes of various materials.