

ICS 83.140.30

CCS G 33



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 18743-2002

**Thermoplastics pipes - Determination of pendulum impact
strength by the Charpy method - Part 1: General test method
(English Translation)**

Issued on: January 1, 1970

Implemented on: January 1, 1970

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

- Foreword
- Introduction
- 1 Scope
- 2 Normative references
- 3 Terms and Definitions
- 4 Principles

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents" Drafting.

This document is part 1 of GB/T 18743 "Determination of Impact Strength of Simply Supported Beams of Thermoplastic Pipes". GB/T 18743 has the following sections have been published.

--- Part 1: General test methods;

--- Part 2: Test conditions for pipes of different materials.

This document and GB/T 18743 Part 2 together replace GB/T 18743-2002 "Thermoplastic pipes for fluid transportation Compared with GB/T 18743-2002, in addition to structural adjustment and editorial changes, the main technical changes are as follows.

- a) Changed the description of the scope of application of the standard, and deleted this document for homopolymerization and copolymerization polypropylene pipes, unplasticized polyvinyl chloride pipes materials, modified high-impact PVC pipes, chlorinated PVC pipes, acrylonitrile-butadiene-styrene and acrylonitrile-Styrene-acrylic pipes (see Chapter 1, Chapter 1 of the 2002 edition);
- b) terms and definitions are added (see Chapter 3);
- c) Changed the principle (see Chapter 4, Chapter 3 of the 2002 edition);
- d) Added specimen type 4 and specimen type 5 for circumferential sampling (see Table 1, Table 1 of the 2002 edition);
- e) Added Method A, Method B and Method C (see 6.2, 6.3 and 6.4);
- f) Added sample preparation requirements and test methods for notched specimens (see

6.2, 6.3);

g) Changed the pipe wall thickness range corresponding to specimen type 1 in Method A (see 6.2.1, 5.2.1 of the 2002 edition);

h) The processing requirements for specimens with a wall thickness greater than 10.5mm for homopolymer and copolymer polypropylene pipes are deleted (see 6.2.2, 2002).

version 5.1);

i) Changed the state adjustment time (see Table 4, Table 2 of the 2002 edition).

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

GB/T 18743 "Determination of Impact Strength of Simply Supported Beams of Thermoplastic Pipes" combined with the actual production and application of plastic pipe products in my country Grass, including general test methods and test conditions for pipes of different materials.

--- Part 1: General test methods. The main contents include principles, equipment, samples, state adjustment and pretreatment, test procedures, and results it specifies the general test method for the determination of the impact strength of simply supported beams of thermoplastic pipes.

--- Part 2: Test conditions for pipes of different materials. The main contents include the test conditions, specifying the different materials for thermoplastic pipes Test conditions for the determination of the impact strength of simply supported beams.

Determination of Impact Strength of Simply Supported Beams of Thermoplastic Pipes Part 1: General test methods

1 Scope

This document specifies a general test method for the determination of the impact strength of simply supported beams of thermoplastic tubing.

--- Method A. Using unnotched samples, the results are expressed as a percentage of the number of damaged samples to the total number of samples.

--- Method B. Use a single-notch specimen, and express the results in terms of impact strength.

--- Method C. Use double-notched specimens and express the results in terms of impact strength.

This document applies to the determination of the impact strength of simply supported beams of thermoplastic pipes.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 1043.1-2008 Determination of impact properties of plastic simply supported beams - Part 1: Non-instrumented impact test GB/T 2918 Standard Environment for Conditioning and Testing of Plastic Specimens GB/T 18743.2-2022 Determination of Impact Strength of Simply Supported Beams of Thermoplastic Pipes-Part 2: Test of Pipes of Different Materials test conditions GB/T 19278-2018 General terms and definitions for thermoplastic pipes, fittings and valves GB/T 21189 Inspection of Pendulum Impact Testing Machine for Plastic Simply Supported Beams, Izod Beams and Tensile Impact Tests GB/T 39812 Machining Preparation of Plastic Samples

3 Terms and Definitions

The terms and definitions defined in GB/T 19278-2018 and the following terms and definitions apply to this document.

α_{hacN}

The impact energy absorbed per unit area when a notched specimen fails.

4 Principles

The pendulum is raised to a fixed height and impacts the specimen supported as a horizontal beam with a single impact at a constant speed, with the impact line at the midpoint between the two supports. right for single-notch specimens, the impact position is directly opposite the back of the notch. For double-notched specimens, the impact position is directly opposite the notch.