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**Plastics piping systems for hot  
and cold water installations —  
Polypropylene (PP) —**

**Part 2:  
Pipes**

**AMENDMENT 2: Impact test**

*Systèmes de canalisations en plastique pour les installations d'eau  
chaude et froide — Polypropylène (PP) —*

*Partie 2: Tubes*

<https://standards.iteh.ai/AMENDEMENT 2: Essai de choc>  
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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](http://www.iso.org/directives)).

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This document was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 2, *Plastics pipes and fittings for water supplies*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 155, *Plastics piping systems and ducting systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 15874 series can be found on the ISO website.

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# Plastics piping systems for hot and cold water installations — Polypropylene (PP) —

## Part 2: Pipes

### AMENDMENT 2: Impact test

#### Normative references

Add the following reference:

ISO 3127, *Thermoplastics pipes — Determination of resistance to external blows — Round-the-clock method*

#### Clause 7

Add the following new subclause title after the title "7 Mechanical characteristics":

#### **"7.1 Resistance to internal pressure"**

#### Clause 7

Add the following text as a new subclause after Table 10:

#### **"7.2 Impact resistance"**

When tested according to the test methods as specified in Table 11 using the indicated parameters, the pipe shall conform to the requirements given in that table.

**Table 11 — Impact resistance of pipes**

Characteristics	Requirements	Test parameters		Test method
Impact resistance (Charpy method) For DN ≤ 25 mm	≤ 10 %	Test temperature	0 °C	ISO 9854-1
		Conditioning medium	Liquid bath or air	ISO 9854-2
		Test piece type	1 (Whole pipe)	
Impact resistance (round-the clock method) For DN ≥ 32 mm	TIR ≤ 10 %	Test temperature	0 °C	ISO 3127
		Conditioning medium	Liquid bath or air	
		Type of striker	d25 for striker mass ≤ 0,8 kg or d90 for striker mass ≥ 1,6 kg	
		Mass of striker	according to Table 12	

**Table 11** (continued)

Characteristics	Requirements	Test parameters		Test method
		Fall height of striker	according to Table 12	

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Table 12 — Test parameters for round the clock method

DN (mm)	S8		S6,3		S5		S4		S3,2		S2,5		S2	
	Mass (kg)	Height (m)	Mass (kg)	Height (m)	Mass (kg)	Height (m)	Mass (kg)	Height (m)	Mass (kg)	Height (m)	Mass (kg)	Height (m)	Mass (kg)	Height (m)
32	0,25	0,5	0,25	0,5	0,25	0,5	0,25	0,5	0,25	0,6	0,25	0,7	0,25	0,8
40	0,25	0,5	0,25	0,6	0,25	0,7	0,25	0,8	0,50	0,5	0,50	0,6	0,50	0,7
50	0,25	0,7	0,25	0,9	0,50	0,5	0,50	0,6	0,50	0,8	0,50	0,9	0,50	1,0
63	0,50	0,6	0,50	0,7	0,80	0,5	0,80	0,6	0,80	0,7	0,80	0,9	0,80	1,0
75	0,80	0,5	0,80	0,6	0,80	0,7	0,80	0,9	0,80	1,1	1,60	0,6	1,60	0,7
90	0,80	0,7	0,80	0,9	0,80	1,1	1,60	0,6	1,60	0,8	1,60	0,9	1,60	1,0
110	1,60	0,5	1,60	0,7	1,60	0,8	1,60	1,0	2,50	0,7	2,50	0,9	2,50	1,0
125	1,60	0,7	2,50	0,5	2,50	0,7	2,50	0,8	2,50	0,9	2,50	1,1	3,20	1,0
140	2,50	0,6	3,20	0,5	3,20	0,6	3,20	0,8	3,20	0,9	3,20	1,1	4,00	1,0
160	3,20	0,6	3,20	0,7	3,20	0,8	3,20	1,0	3,20	1,2	3,20	1,4	4,00	1,3
180	3,20	0,7	3,20	0,9	3,20	1,1	3,20	1,3	3,20	1,5	3,20	1,8	4,00	1,7
200	3,20	0,9	3,20	1,1	3,20	1,3	3,20	1,6	3,20	1,9	4,00	1,8	5,00	1,6
225	3,20	1,1	3,20	1,4	3,20	1,7	3,20	2,0	4,00	1,9	5,00	1,8	6,30	1,6
250	3,20	1,4	3,20	1,7	4,00	1,7	4,00	2,0	5,00	1,9	6,30	1,8	6,30	2,0

NOTE The proposed drop-height (m) and masses (kg) have been calculated to provide a specific impact energy of  $E/A = 4 \text{ kJ/m}^2$  (similar to Charpy impact resistance proposed as material characteristic in ISO 15874-1:2020, Table 2). Impact energy has been evaluated from  $E = \text{mass} \times \text{drop-height} \times 9,81$  and pipe cross-section from  $A = \pi \times [\text{DN}^2 - (\text{DN} - 2 \times e_n)^2]/4$ . (Exceptionally DN32 S5-S6,3-S8 pipes have a specific impact energy higher than  $4 \text{ kJ/m}^2$  because a minimum drop-height of 0,5 m has been selected).

*Clause 8*

Renumber Table 11 as Table 13, as follows:

“When tested in accordance with the test methods as specified in Table 13 using the indicated parameters, the pipe shall conform to the requirements given in this table.

**Table 13 — Physical and chemical characteristics of pipes”**

*10.2*

Renumber Table 12 as Table 14, as follows:

“The minimum required marking of the pipe is specified in Table 14.

**Table 14 — Minimum required marking”**

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