

Plastics Piping Systems for Hot and Cold Water Installations – Polypropylene (PP) – ISO 15874-2 / Testing Equipment

Description



5 General characteristics

5.2 Opacity

Polypropylene pipes that are declared to be opaque shall not transmit more than 0,2 % of visible light, when tested in accordance with ISO 7686.

7 Mechanical characteristics

When tested in accordance with the test methods as specified in Table 10 using the indicated parameters, the pipe shall withstand the hydrostatic (hoop) stress without bursting. In the case of pipes with (a) barrier layer(s) the test shall be carried out on test pieces produced without the barrier layer(s).

Table 10 — Mechanical characteristics of pipes

Characteristic	Requirement	Test parameters for the individual tests				Test method
Resistance to internal pressure	No failure during the test period	PP-H				ISO 1167-1, ISO 1167-2
		Hydrostatic (hoop) stress MPa	Test temp. °C	Test period h	Number of test pieces	
		21,0	20	1	3	
		5,1	95	22	3	
		4,2	95	165	3	
		3,6	95	1000	3	
		PP-B				
		Hydrostatic (hoop) stress MPa	Test temp. °C	Test period h	Number of test pieces	
		16,0	20	1	3	
		3,5	95	22	3	
		3,0	95	165	3	
		2,6	95	1000	3	
		PP-R				
		Hydrostatic (hoop) stress MPa	Test temp. °C	Test period h	Number of test pieces	
		16,0	20	1	3	
		4,3	95	22	3	
		3,8	95	165	3	
		3,5	95	1000	3	
		PP-RCT				
		Hydrostatic (hoop) stress MPa	Test temp. °C	Test period h	Number of test pieces	
		15,0	20	1	3	
		4,2	95	22	3	
		4,0	95	165	3	
		3,8	95	1000	3	
		Test parameters for all tests				
		Sampling procedure		^a		
		Type of end cap		Type A		
		Orientation of test piece		Not specified		
Type of test		Water-in-water				
^a The sampling procedure is not specified. For guidance see ISO/TS 15874-7 [3].						

8 Physical and chemical characteristics

When tested in accordance with the test methods as specified in Table 11 using the indicated parameters, the pipe shall conform to the requirements given in this table

Table 11 — Physical and chemical characteristics of pipes

Characteristic	Requirement	Test parameters		Test method
		Parameter	Value	
Longitudinal reversion	≤ 2 %	Test temperature		Method B of ISO 2505 (oven test)
		PP-H	150 °C	
		PP-B	150 °C	
		PP-R	135 °C	
		PP-RCT	135 °C	
		Duration of exposure for:		
		e _n ≤ 8 mm	1 h	
		8 mm < e _n ≤ 16 mm	2 h	
e _n > 16 mm	4 h			
Number of test pieces	3			
Thermal stability by hydrostatic pressure testing	No bursting during the test period	Sampling procedure	a	ISO 1167-1, ISO 1167-2
		Hydrostatic (hoop) stress		
		PP-H	1,9 MPa	
		PP-B	1,4 MPa	
		PP-R	1,9 MPa	
		PP-RCT	2,6 MPa	
		Test temperature	110 °C	
		Type of test	Water-in-air	
		End cap	Type A	
		Orientation	Not specified	
		Test period	8760 h	
Number of test pieces	1			
Impact resistance	≤ 10 %	Sampling procedure	a	ISO 9854-1, ISO 9854-2
		Test temperature PP-H	23 °C	
		PP-B	0 °C	
		PP-R	0 °C	
		PP-RCT	0 °C	
		Number of test pieces	10	
Melt flow rate (compound)	≤ 0,5 g/10 min	Test temperature	230 °C	ISO 1133-1
		Mass	2,16 kg	
		Number of test pieces	3	
Melt flow rate (pipe)	30 % maximum difference compared with compound from the same batch.	Test temperature	230 °C	ISO 1133-1
		Mass	2,16 kg	
		Number of test pieces	3	

^a The sampling procedure is not specified. For guidance see ISO/TS 15874-7 [3].

9 Performance requirements

When pipes conforming to this part of ISO 15874 are jointed to each other or to components conforming to ISO 15874-3, the pipes and the joints shall conform to ISO 15874-5

As a Brief to Cover Testing Equipment as This Norm

- MFI MFR Tester (Melt Flow Index)

- Pendulum Impact Tester & Sample Preparation Devices
- Hydrostatic Pressure Testing Unit
- Hot Water Bath and Hot Air Oven for Hydro Testing
- SS End Caps
- Opacity Tester
- Dimensional Measurement Equipment for Pipes and Fittings



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