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
		PP-H				
Resistance to internal pressure	No failure during the test period	**Hydrostatic (hoop) stress** MPa	**Test temp.** °C	**Test period** h	**Number of test pieces**	ISO 1167-1, ISO 1167-2
		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:		
		$e_n \leq 8$ mm	1 h	
		8 mm < $e_n \leq 16$ 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

- 

Hot Water Bath for Hydrostatic Pressure Testing-150x125x150-4S
Read more
- 
Hot Water Bath for Hydrostatic Pressure Testing-120x100x120-4S
Read more
-

Hot Water Bath for Hydrostatic Pressure Testing-200x125x200-4S
Read more

- 

Ring Stiffness Tester According to ISO 9969-50KN-2000mm
Read more

-

Hot Water Bath for Hydrostatic Pressure Testing-110x90x80-Cable
Read more

- 

Box Compression Tester-20KN (100Kg Loadcell)-650mm-200*400 Plate
Read more

-

Pendulum Impact Tester (Izod, Charpy, Tensile Impact)- AHP50P-(22,25,15j)
Read more

- 

Tensile-Compression Universal Tester (100KN) Servomotor Controlled
Read more

Tensile Grips Type 3-ISO 6259
Read more

- 

Notch Milling Machine for Pendulum Tester-IZOD
Read more

-

Pendulum Impact Tester (IZOD)- 15J
Read more

- 

Tensile-Compression Universal Tester (200KN) Servomotor Controlled
Read more

-

Ring Stiffness Tester According to ISO 9969-50KN-1300mm
Read more

- 

Haze Meter (Opacity Tester)-Touch-ISO7686
Read more

-

Pendulum Impact Tester (Charpy)- 5J
Read more

- 

Tensile-Compression Universal Tester (10KN) Servomotor Controlled
Read more

-

Tensile-Compression Universal Tester Servomotor Controlled-20KN Capacity-5KN Loadcell
Read more

- 

Tensile Wedge grips for up to 10mm thickness
Read more

-

Tensile-Compression Universal Tester (50KN) Servomotor Controlled
Read more

- 

SS304 End Cap for Hydrostatic Pressure Testing-75mm-Type A-EA
Read more

SS304 End Cap for Hydrostatic Pressure Testing-16mm-Type A
Read more

- 

SS304 End Cap for Hydrostatic Pressure Testing-20mm-Type A
Read more

-

SS304 End Cap for Hydrostatic Pressure Testing-25mm-Type A
Read more

- 

SS304 End Cap for Hydrostatic Pressure Testing-32mm-Type A
Read more

Category

1. Equipment for Standards
2. Standards