



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

GB/T 39382-2020

**Thermoplastics piping systems for soil and waste discharge
inside buildings. Test method for airtightness of joints**

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Foreword

This Standard was drafted in accordance with the rules in GB/T 1.1-2009.

This Standard uses the translation method and equivalently adopts ISO 13255:2010 Thermoplastics Piping Systems for Soil and Waste Discharge Inside Buildings - Test Method for Airtightness of Joints.

This Standard makes the following editorial modifications:

---The pressure dimension bar is modified into the legal measurement unit MPa (megapascal) of our country;

---In order to be consistent with the description of the standard in 5.7, the description of b in Figure 1 is modified into "air intake";

---In order to be consistent with the description of the standard in 5.7, the description of 5 in Figure 1 is modified into "sealing device with water inlet, air inlet and end fixing device";

---500 in Figure 1 is modified to be replaced by L; the description of L is added to Figure 1;

---In order to be consistent with the description in 5.8, 0%, 90%, 180% and 270% in Figure 2 are modified into 0°, 90°, 180° and 270°.

Please be noted that certain content of this document might involve patents. The institution issuing this document does not undertake the responsibility of identifying

these patents.

This Standard was proposed by China National Light Industry Council.

This Standard shall be under the jurisdiction of National Technical Committee 48 on Plastics Products of Standardization Administration of China (SAC/TC 48).

The drafting organizations of this Standard: Beijing Building Materials Testing Academy Co., Ltd. (National Supervision and Inspection Center for Water-saving Appliance Products); Baolu Qixing Pipe Industry Co., Ltd.; Yonggao Co., Ltd.; China Aviation Planning and Design Institute (Group) Co., Ltd.; Shanghai White Butterfly Pipe Technology Co., Ltd.; Beijing Technology and Business University (Light Industry Plastics Processing and Application Research Institute); Shandong Dongxin Plastic Co., Ltd.; Liaocheng University; Beijing Building Materials Academy of Sciences Research; Zhejiang Zhongcai Pipeline Technology Co., Ltd.; National Test Center of Polymer and Chemical Building Materials (Material Testing Department); Hangzhou Unicom Piping Industry Co., Ltd.; China Lesso Group Holdings Limited; Chengde Precision Testing Machine Co., Ltd.

Thermoplastics Piping Systems for Soil and Waste

Discharge inside Buildings - Test Method for

Airtightness of Joints

1 Scope

This Standard specifies the test method for airtightness of joints of thermoplastic piping systems for soil and waste discharge inside buildings.

2 Principle

Within the specified time, the assembly composed of pipes and / or pipe fittings are subject to the specified internal atmospheric pressure. During the test, check the airtightness of the assembly joints.

NOTE: the following test requirements may be provided by relevant standards:

- a) Specimen preparation procedures in 4.1 and Chapter 5;
- b) The number of specimens in 4.2.

3.1 End Sealing Device

The joint assembly can be sealed and properly fixed; during the fixation, no axial force shall be applied to the specimen. During the test, ensure that the sealing device or specimen does not separate under the test pressure. The weight of the device shall not affect the deflection angle of the specimen (see 5.8).

3.2 Atmospheric Pressure Source

It is connected to the end of at least one end sealing device through a shut-off valve. During the test, the specified test pressure can be maintained, and the fluctuation range is within $\pm 10\%$ (see Chapter 5).

3.3 Pressure Measuring Device

The test pressure can be measured, so as to ensure that the test pressure complies with the specified requirements (see 3.2 and Chapter 5).
unsealed end of the fixed component. Then, use sealing devices to seal all other ends of the pipe or joint; one of the sealing devices has a water outlet in the center and is connected to a shut-off valve (see Figure 2).

In accordance with the manufacturer's requirements, assemble the joint assembly. During the preparation of the specimen, within the deviation range allowed by the standard, select the components with the smallest socket outer diameter and the largest mouth inner diameter. In accordance with the requirements of the relevant standards, assemble them.

Measure and record the socket and mouth dimensions of the selected components.

4.2 Number of Specimens

The number of specimens shall be specified in the relevant standards.

5.1 The test temperature is $(23 \pm 5) ^\circ\text{C}$; the test medium is water at room temperature.

During the test, there shall be no condensation on the surface of the specimen.

5.3 When conducting the test in accordance with the stipulations of 5.4 ~ 5.8, by observing bubbles and water leakage generated by liquid soap (see 5.4), monitor and record the leakage of the joint.

5.4 Apply liquid soap or a similar leakage indicator to the circumference of the joint

between the socket and the mouthing, then, wipe off the excess liquid.

5.6 Open the water intake valve. Through the water flow at the water outlet of the pipe,

confirm that the water level in the specimen reaches half of the inner diameter of the pipe. At that moment, firstly, close the water intake valve, then, close the water drainage valve.

5.7 Open the air intake valve. At the test temperature specified in 5.1, use air as the

pressurizing medium to increase the internal pressure of the specimen to (0.01 ± 0.001) MPa.

5.8 Maintain the pressure for 5 min. Then, deflect the pipe fitting or joint installed at the

end of the socket of the fixed component respectively in the direction of 0° , 90° , 180° and 270° (see Figure 2), until the maximum deflection angle specified by the manufacturer is reached, maintain for 1 min at each position.

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