

EXAMINATION REPORT

Determination of the resistance to elevated
temperature cycling and air tightness

*Thermoplastics piping systems for soil and waste water discharge
inside buildings*

REPORT NUMBER

KL 8607

AUTHORISATION

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Determination of the resistance to elevated temperature cycling and air tightness

Thermoplastics piping systems for soil and waste water discharge inside buildings

Manufacturer: Wavin Italia S.p.A.

Place of production: Italy

Reference number: 120501140

According to standard: EN 1519-1

1. Order

By order of Kiwa Nederland B.V., the samples mentioned below were tested by the Laboratory for Material Testing for determination of the resistance to elevated temperature cycling according to EN 1055.

2. Principle

A test assembly of pipes and fittings is subjected to a certain internal air pressure during a certain period where the assembly is checked for air tightness. This test is carried out before and after the thermal cycling test, using hot and cold water alternately for a given number of cycles, during which the leak tightness of joints is verified by inspection and sagging of pipe is checked against a given limit.

3. General

The samples were received on 22-05-2012 and registered with number KL 8607. The test was started on 23-05-2012 and was carried out by Mr L.M. Bloeming.

4. Sample description

Examined fittings and expansion units, type and dimensions	Carrying out *	Application area code (B-BD-UD)
1 PE socket 50 mm (butt welded on bend)	ss-r	BD
1 PE bend 50 mm 88°	sso	BD
2 PE pipes with butt welded socket 50 mm	ss-r	BD
1 PE tee 110 x 110 x 50 mm	spsp	BD
1 PE socket 110 mm (butt welded on tee)	ss-r	BD
1 PE socket 50 mm (butt welded on tee)	ss-r	BD
2 PE pipes with butt welded socket 110 mm	ss-r	BD
1 PE reducer 125-110 mm	ss-r	BD
2 PE pipes with butt welded socket 125 mm	ss-r	BD

* sso= socket/socket, ss= socket/spigot, spsp= spigot/spigot, r= rubber ring

Examined pipes	
Dimensions	Production codification
50 x 3,0 mm	WAVIN PE EN 1519 152 DN 50 Ø50x3 PE BD S12.5 Schweissbar getempert made in Italy 1508
110 x 4,3 mm	1503 12 Wavin PE EN 1519 iiP 152 UNI ü DIN 19535 DIN 19537 DN 110 Ø110x4.3 PE BD S12,5 Schweissror getempert made in Italy I 508
125 x 4,9 mm	09085 12 Wavin PE EN 1519 iiP 152 UNI DIN 19535 DIN 19537 DN125 Ø125x4.9 PE BD S12,5 Schweissror getempert made in Italy I 508

5. Preparation of the sample

The test assembly shall comprise a vertical stack of pipes with fittings and two near-horizontal pipe assemblies with fittings.

The assembly of pipes and fittings was carried out on a frame using both fixed and guide brackets, with no other support of the test assembly.

6. Apparatus

Cold water tank with an average temperature of $(15 \pm 5) ^\circ\text{C}$.

Hot water tank with an average temperature of $(93 \pm 2) ^\circ\text{C}$.

Flow meter.

7. Preservation of the sample

In case of failure the samples will be kept for 3 months.

8. Test results

Through the air intake an air pressure of 4 kPa was given:
Result after 5 min.: 4 kPa.

Before testing

Result after the system was filled with water (max. 20 °C) to a head of 0.5 m above the highest point of the centreline of the upper lateral pipe.
Signs of leakage after 15 min. (visual): no.

Signs of leakage or deformation during the cycling test (1500 cycles): no.

After testing

Result after the system was filled with water (max. 20 °C) to a head of 0.5 m above the highest point of the centreline of the upper lateral pipe.
Signs of leakage after 15 min. (visual): no.

Changes observed in the test pieces during the test, or immediately afterwards, including any visible opening of weld lines: no.

Through the air intake an air pressure of 4 kPa was given:
Result after 5 min.: 3,8 kPa.

Remarks: none.

9. Conclusion

The test pieces meet the requirements for the investigated aspects in accordance with EN 1519-1.