



Testing of floor drain trap seal protection devices, type Green Drain from HOPE A/S

Testing report

Project number: 713952

Performed for:

Producer:
Green Drain Inc.
15275 Collier Blvd.
Suite 201-262
Naples, FL 34119

General distributor
HOPE A/S
Borupvang 3
2750 Ballerup

Keywords: Sewer, testing, floor drain trap seal protection devices

Testing made by:

Danish Technological Institute, Pipe Centre
Gregersensvej
2630 Taastrup
Denmark
v/ Stig Clausen

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Number of appendices: 1

Taastrup, October 19th 2016

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1. Testing

1.1. Test pieces

The product tested is a floor drain trap seal protection device without water, produced by "Green Drain" from the company HOPE A/S. The floor drain trap seal protection devices acts as a kind of rubber valve by being effectively sealed when there is no water flow. The submitted products are marked with the "Green Drain - Drain Floor Trap Seal" on the package. The products itself was not labeled.

1.2. Purpose and scope of the test

The test was completed with the aim to get a review of the floor drain trap seal protection devices self-cleaning capacity, water flow through the floor drain trap seal protection devices and its sensitivity to pressure or vacuum.

1.3. Test implementation

The test was carried out at the Pipe Centre, Danish Technological Institute, Taastrup, Denmark from the 5th to the 28th of September 2016.

The design and the tests are based on DS/EN 1253-1, but some adjustments had to be made, since this product is a floor drain trap seal protection device and not a water trap:

1. Testing of resistance to vacuum and pressure. The test was conducted by principle from DS/EN 1253-1, but only with air and without water
2. Testing of self-cleaning ability by DS/EN 1253-1, Section 5.4.2. Testing was carried out by performing temperature test according to DS/EN 1253-1 section 5.5.1, but only for 48 hours and then test with a water flow of 1.4 l/s, as this is considered the most critical cases.
3. Testing the water flow through the floor drain trap seal protection devices to horizontal positioning is performed by DS/EN 1253-1, Section 4.8.1
4. The retention of the floor drain trap seal protection devices. The specimen was mounted in several different types of floor drains in order to assess the retention of the product.

1.4. Results

The results of the tests were as follows:

1. Testing of vacuum and pressure. The result was, that the floor drain trap seal protection devices withstand a pressure > 400 pa (40 mm water column). In turn, the floor drain trap seal protection device coped with less than 20 pa negative pressure (suction) from the drain installation. Additionally opens the floor drain trap seal protection device completely in conjunction with major deposits etc. to pass through.

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2. Testing of self-cleaning ability. Self-cleaning ability of the trial after the temperature cycle test was satisfactory, since no bullets were retained.
3. Testing of the water flow. The result was, that the flow of water through the floor drain trap seal protection device was about 1.4 l/s, which is accepted according to EN 1253-1.
4. Adhering to the pipe/floor drain was quite different in the three different types of floor drains, which the product was installed in. In particular, for one floor drain, the adhering was only mediocre.

1.5. Conclusion

The conclusion of the tests of the product "Green Drain" from the company HOPE A/S are:

- The floor drain trap seal protection device had no problems coping with pressure (pressure from the drain installation and out through floor drain trap seal protection devices) from drain installation. In turn, the valve opened by the small negative pressure (suction from the drain installation through the floor drain trap seal protection devices).
- In DS 432, section 4.8 states that traps should be able to handle both 400 pa pressure or vacuum. This floor drain trap seal protection devices work without water and if it is to be used in drainage systems, the user must be aware that it only works against pressure and that the valve can be open briefly, if larger deposits must pass through the valve.
- The floor drain trap seal protection device meets the requirements for water flow in horizontal position and has a satisfactory self-cleaning ability.
- In terms of ensuring the retention, it is recommended that the product can be purchased with a fastening device, for example, a line of suitable material such as the floor drain trap seal protection devices can placed again if it moves up.

Danish Technological Institute, Pipe Centre

October the 19th 2016

Stig Clausen

Consultant

Ulrik Hindsberger

Centre Manager



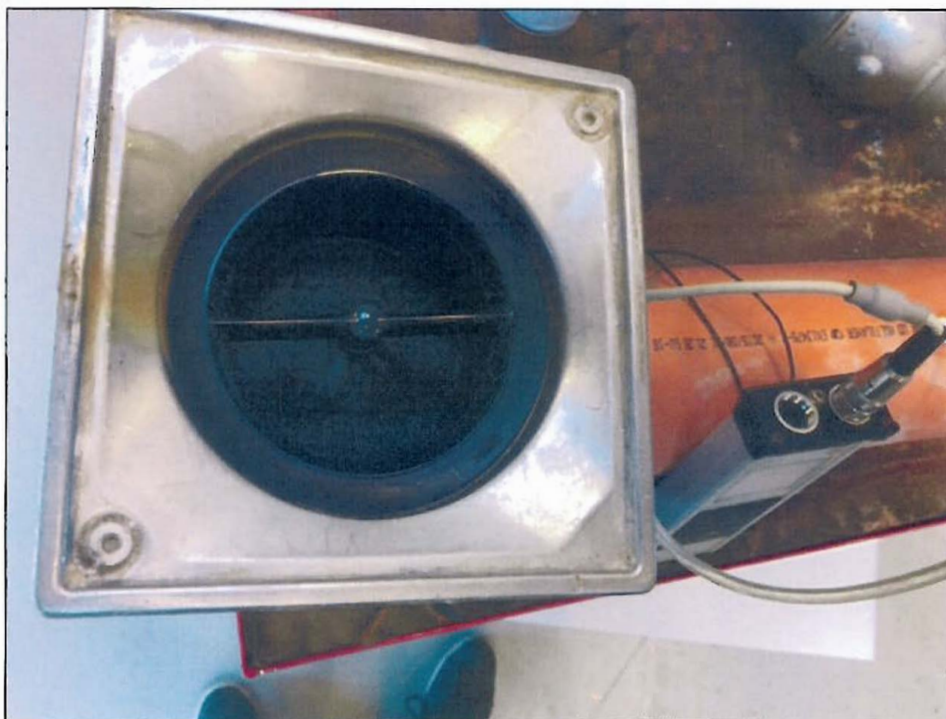
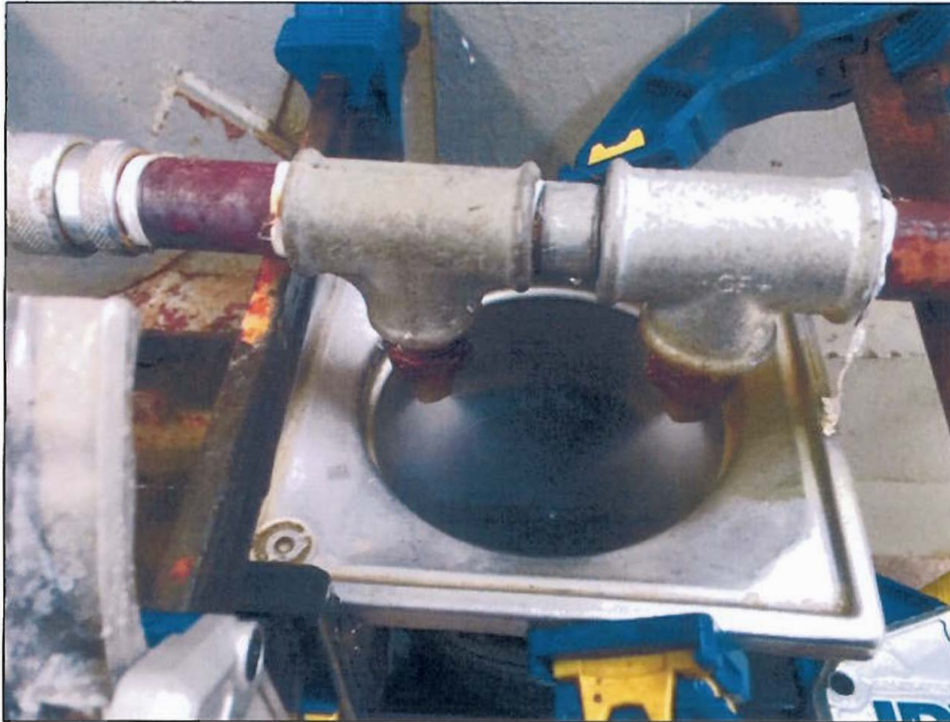
Appendix 1: Photographs of test samples and photos of test



The testing is only valid for the tested specimen. The test report may only be extracted, if the laboratory has approved the extract.



Appendix 1: Photographs of test samples and photos of test (continued)



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Appendix 1: Photographs of test samples and photos of test (continued)



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