



AIR PERMEABILITY TEST

EN 1026 – WINDOWS AND DOORS – AIR PERMEABILITY



**TEKNOLOGISK
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CPR 1235



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DETERMINATION OF AIR PERMEABILITY

Report no.: 855718-S

Performed for:

Dolle A/S
Vestergade 47
7741 Frøstrup

Performed by:

Teknologisk Institut
Kongsvang allé 29
8000 Aarhus C

Pages: 9 (incl. frontpage & appendices)

Appendices: 1 (1-page total)

28. June 2019

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Test report

- Client:** Dolle A/S
Vestergade 47
7741 Frøstrup
- Material:** Hatch door, Model EI45, 800 x 700 mm.
- Sampling:** The test material was delivered by Dolle and received at the Danish Technological Institute on 2019-06-28. The test material was labelled 855718-S by the laboratory.
- Period:** The testing was carried out 2019-06-28.
- Method** EN 14351-1:2006 Windows and doors – Product standard, performance characteristics -
+A2:2016: Part 1: Windows and external pedestrian doorsets.
EN 1026:2016: Windows and doors – Air permeability – Test method
- Result:** Classification of the test specimen according to EN 14351-1 4.2, 4.5 and 4.14 and the standards mentioned below:
- Air permeability: **Class 4** at ± 600 Pa
EN 12207 – Windows and doors Air permeability - Classification
- Storage:** As the test is destructive and non-reproducible the samples have been re-moved immediately after ending the test.
- Terms:** Accredited testing was carried out in compliance with international requirements (EN/ISO/IEC 17025:2005) and in compliance with Danish Technological Institute's General Terms and Conditions regarding Commissioned Work accepted by Danish Technological Institute. The test results apply to the tested products only. This report may be quoted in extract only if the laboratory has granted its written consent.
- Location:** 2019-06-28, Danish Technological Institute, Building & Construction, Aarhus


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Test information

Description of test specimen

The test specimen is a hatch door, that consist of a wooden frame and a white door. The gasket-system consist of one type of sealing strips, a white Q-LON sealing strip. See figure 1 and 2 for details.

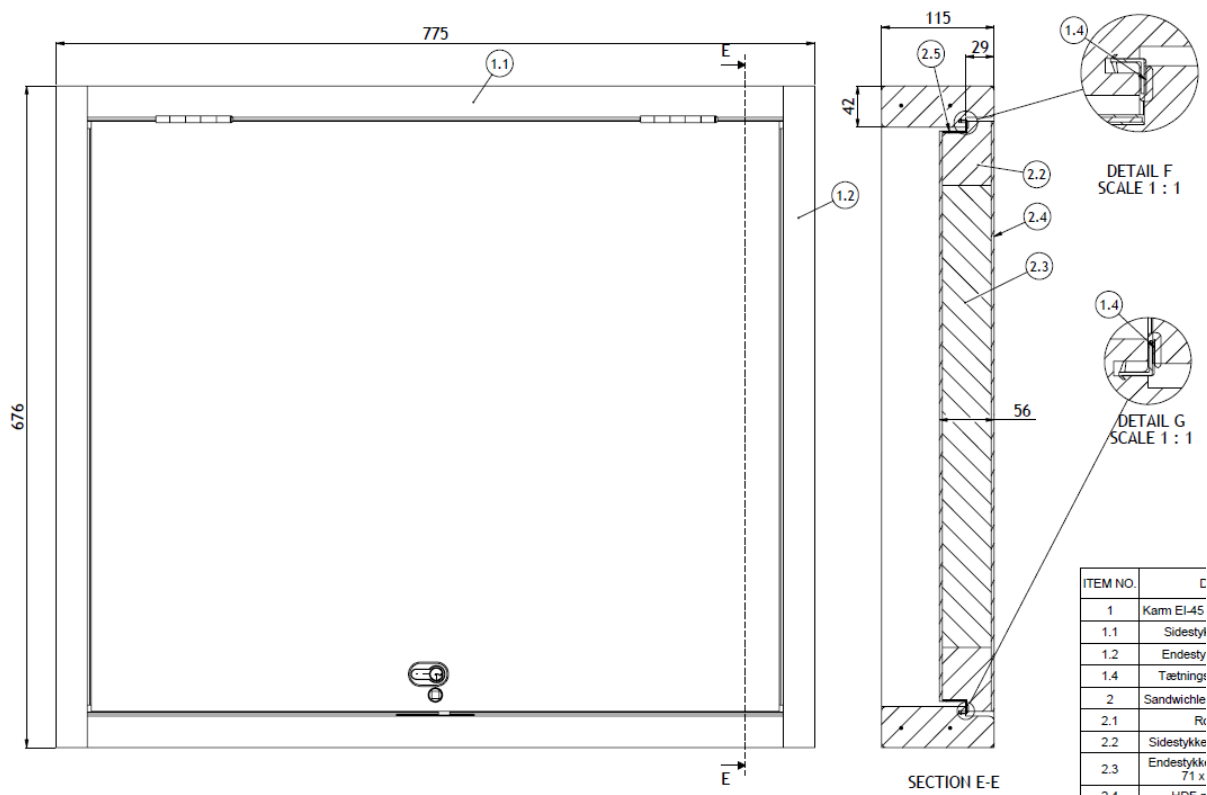


Figure 1: Drawing (Dolle, 2019)

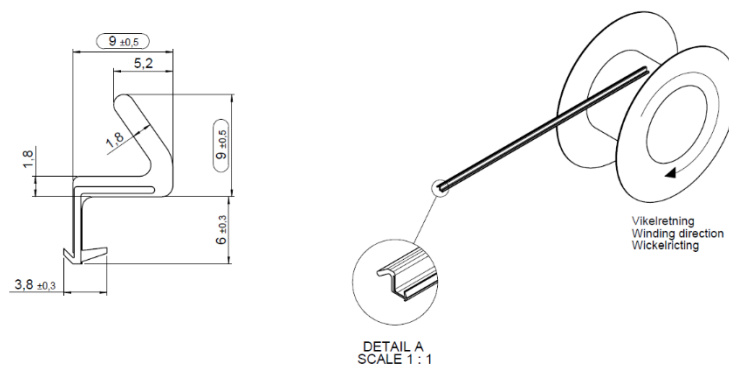


Figure 2: B-B Drawing (Dolle, 2018)



The client has provided the following information about the construction of the test specimen:

Product name	EI45
Width x height	775 x 676 mm
Gasket 1	White Q-LON, see Figure 2
Hatch Door	Wooden frame 703 x 603 mm -infilled with Mineral wool

Before testing a subframe was prepared and mounted around the element by the client. The subframe does not hinder the normal functioning of the element. The test conditions and the dimensions of the test specimen are measured by the laboratory and are given in the table below.

Closing condition, according to EN 12519 Windows and pedestrian doors - Terminology, during test: Locked

Width [mm]	Height [mm]	Area [m ²]	Length of joint [m]	Temperature [°C]	Relative humidity [%]	Atmospheric pressure [hPa]
67,6	77,6	0.525	2.612	23,79	46,5	1021.9



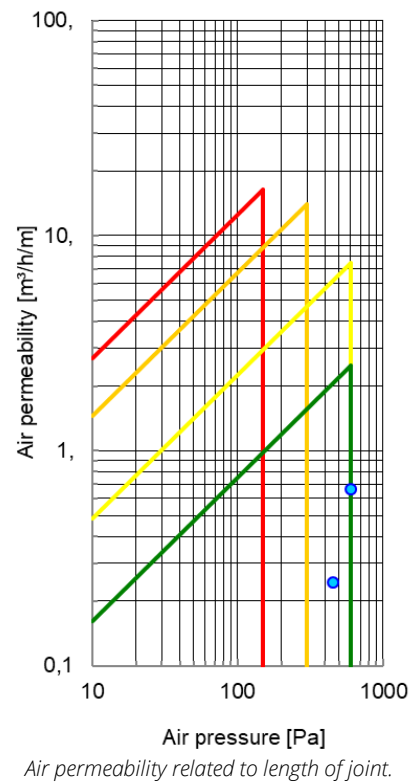
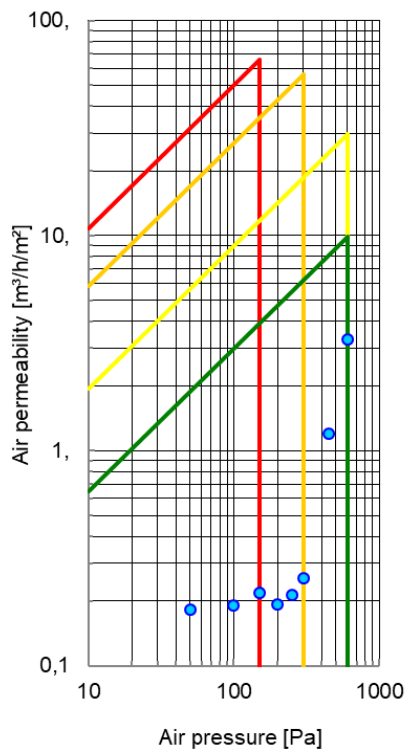
Figure 3: Specimen mounted in the test setup (DTI, 2018)



Results

Test results – Air permeability – Positive air pressure

Air pressure [Pa]	Air flow Total [m ³ /h]	Air flow Area [m ³ /h/m ²]	Air flow Length of joint [m ³ /h/m]	Class Area [-]	Class Length of joint [-]
50	0.10	0.18	0.04	4	4
100	0.10	0.19	0.04	4	4
150	0.11	0.22	0.05	4	4
200	0.10	0.19	0.04	4	4
250	0.11	0.21	0.04	4	4
300	0.14	0.26	0.05	4	4
450	0.63	1.20	0.24	4	4
600	1.73	3.29	0.66	4	4

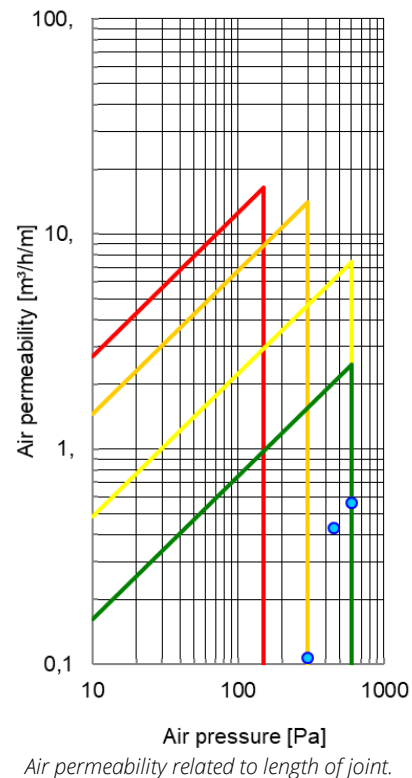
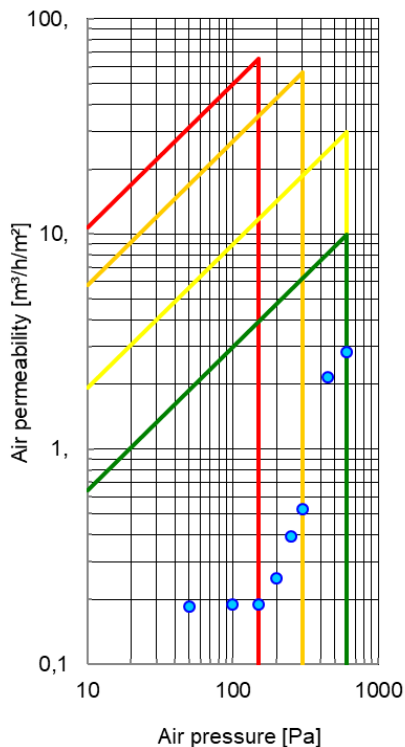


The graphs show the classification in relation to the area and the length of joint.
Classes 1-4 are indicated by red, orange, yellow and green fields respectively.



Test results – Air permeability – Negative air pressure

Air pressure [Pa]	Air flow Total [m ³ /h]	Air flow Area [m ³ /h/m ²]	Air flow Length of joint [m ³ /h/m]	Class Area [-]	Class Length of joint [-]
50	0.10	0.19	0.04	4	4
100	0.10	0.19	0.04	4	4
150	0.10	0.19	0.04	4	4
200	0.13	0.25	0.05	4	4
250	0.20	0.39	0.08	4	4
300	0.28	0.53	0.11	4	4
450	1.13	2.15	0.43	4	4
600	1.48	2.82	0.56	4	4

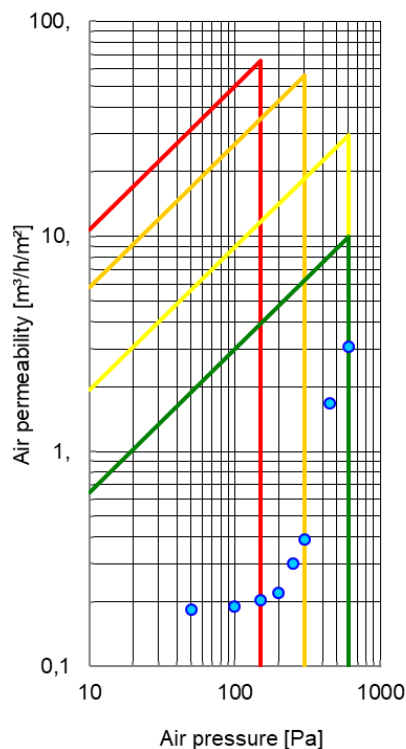


The graphs show the classification in relation to the area and the length of joint.
Classes 1-4 are indicated by red, orange, yellow and green fields respectively.

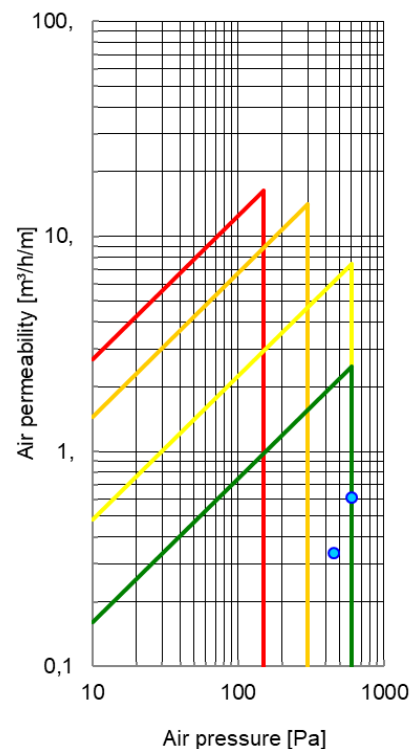


Test results - Average air permeability

Air pressure	Air flow	Air flow	Air flow	Class	Class
[Pa]	Total	Area	Length of joint	Area	Length of joint
[Pa]	[m ³ /h]	[m ³ /h/m ²]	[m ³ /h/m]	[-]	[-]
50	0.10	0.18	0.04	4	4
100	0.10	0.19	0.04	4	4
150	0.11	0.20	0.04	4	4
200	0.12	0.22	0.04	4	4
250	0.16	0.30	0.06	4	4
300	0.21	0.39	0.08	4	4
450	0.88	1.68	0.34	4	4
600	1.60	3.05	0.61	4	4



Air permeability related to area.



Air permeability related to length of joint.

The graphs show the classification in relation to the area and the length of joint.
Classes 1-4 are indicated by red, orange, yellow and green fields respectively.



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Construction Product Regulation:

The Danish Technological Institute guarantees that employees carrying out tests to be used together with harmonized standards under notification no. 1235 according to EU regulation 305/2011, article 43, satisfy all the requirements made for capability, integrity and impartiality. You find the CPR here:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:088:0005:0043:EN:PDF>

September 2017