

## Determination of water vapour permeability acc. to EN 13469

Test report no.: R-151/17

**Applicant:** K-Flex Polska Sp. z o.o. Wielenin Kolonia 50b, 99-210 Uniejów

**Product name:** K-FLEX ST

**Material designation:** Production day / Code: 04874041971 P

**Material description:** (acc. to indication) Tube for thermal insulation made of flexible rubber foam with closed cells and skins on both sides; Colour: black; Nominal thickness: 19 mm; inner diameter: 28 mm;

**Origin of the material:** Sampling by FIW München in the plant Uniejów on 21.06.2017.  
Samples were sent by applicant on 10.07.2017 to the FIW München.  
Goods receipt no.: E3319

**Test procedure:** Determination of water vapour permeability in accordance with EN 13469:2013.  
Test conditions according to clause 5: (23°C, 0/50% r. h.)  
Specimen: tube Length: 230 mm  
Comment:  $\mu_{\text{tube}} = (2 \cdot \pi \cdot l \cdot \delta_L \cdot \Delta p) / (G \cdot \ln((D_r + 2 \cdot d) / D_i))$

**Conditioning:** ---

**Period of testing:** August - October 2017

**Results:** The water vapour diffusion resistance index  $\mu_{\text{tube}}$  has been tested at five specimens with an mean density of 51 kg/m<sup>3</sup>.

specimen no.	inner diameter D <sub>i</sub> mm	thickness d mm	density kg/m <sup>3</sup>	water vapour resistance index $\mu_{\text{tube}}$	water vapour permeability $\delta$ kg/(m·s·Pa)
1	28.0	17.9	50.3	10380	$2.00 \cdot 10^{-14}$
2	28.0	17.9	50.2	10210	$2.04 \cdot 10^{-14}$
3	28.0	17.8	51.1	9800	$2.12 \cdot 10^{-14}$
4	28.0	17.7	51.0	10360	$2.01 \cdot 10^{-14}$
5	28.0	17.8	50.5	10610	$1.96 \cdot 10^{-14}$
<b>arithmetic mean</b>	<b>28</b>	<b>18</b>	<b>51</b>	<b>10300</b>	<b><math>2.0 \cdot 10^{-14}</math></b>

**Remarks:** The measured values are applicable only for the tested specimens with thickness d, inner diameter D<sub>i</sub> and chosen test conditions as specified above.

Gräfelfing, 09.01.2018

Department specialist



Dipl.-Ing. (FH) Stefan Kutschera



Examiner



Michael Zimmermann

Results relate only to the items tested.

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