

## Determination of minimum service temperature according to EN 14304:2009+A1:2013, annex B (-196 °C)

Test report No. L2-35/2018

**Applicant:** K-FLEX POLSKA Sp. z.o.o.,  
99 210 Uniejów, Poland

**Material:** K-Flex ST

**Material description:** Sheets made of flexible elastomeric foam according to  
EN 14304:2009+A1:2013  
Color: black; 26 - 50 mm thk;  
FEF-EN 14304-ST(+)85-ST(-)-160-MU7000-WS01-CL500-pH8  
Nominal thickness: 35 mm; Code: 00674061481P

**Sampling:** The material was sampled by staff of FIW München on May 09, 2018 in the  
plant Uniejów/Poland.

**Goods receipt:** WE18-4070, on May 29, 2018

### Sample preparation and testing method:

Three specimens of 150 mm x 70 mm x 30 mm have been cut in length- and in width-direction of the delivered sheets. The length and width of the specimens is measured in accordance with EN 12085:2013 and the thickness in accordance with EN 823:2013 at  $23 \pm 1$  °C. Afterwards, the specimens are cooled down to -196 °C with liquid nitrogen and the dimensions are determined in cooled state.

**Test date:** 17.12.2018

### Results:

Specimen		1	2	3	Mean value
In length direction	Length at (23 ± 1) °C in mm	151.91	153.00	151.70	
	Length at -196 °C in mm	150.02	151.52	151.18	
	<b>Dimensional Change <math>\Delta\epsilon_l</math> in %</b>	1.3	1.0	0.3	<b>0.9</b>
	Width at (23 ± 1) °C in mm	70.10	70.00	69.92	
	Width at -196 °C in mm	69.15	68.87	69.04	
	<b>Dimensional Change <math>\Delta\epsilon_b</math> in %</b>	1.4	1.6	1.3	<b>1.4</b>
	Thickness at (23 ± 1) °C in mm	33.04	32.74	32.99	
	Thickness at -196 °C in mm	32.72	32.47	32.58	
<b>Dimensional Change <math>\Delta\epsilon_d</math> in %</b>	1.0	0.8	1.3	<b>1.0</b>	
In width direction	Length at (23 ± 1) °C in mm	150.70	150.67	150.96	
	Length at -196 °C in mm	148.36	148.19	148.31	
	<b>Dimensional Change <math>\Delta\epsilon_l</math> in %</b>	1.6	1.7	1.8	<b>1.7</b>
	Width at (23 ± 1) °C in mm	69.70	70.82	71.16	
	Width at -196 °C in mm	69.26	70.04	70.59	
	<b>Dimensional Change <math>\Delta\epsilon_b</math> in %</b>	0.6	1.1	0.8	<b>0.9</b>
	Thickness at (23 ± 1) °C in mm	33.25	33.47	33.10	
	Thickness at -196 °C in mm	32.88	32.69	32.42	
<b>Dimensional Change <math>\Delta\epsilon_d</math> in %</b>	1.1	2.4	2.1	<b>1.9</b>	

### Remark

After thawing the specimens are severely deformed.

Gräfelfing, 20.12.2018

Technical-supervisor



Dipl.-Ing. R. Schreiner



Tester

A. Gurewitsch

Test results only refer to test objects

The prior written consent of our Institute is required for any publication or reference concerning part of this report.

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