

# Test report

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**DANISH  
TECHNOLOGICAL  
INSTITUTE**

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Page 1 of 4  
No. of Encl.: 1  
Init.: AGS  
Cosign.: DECR

**Customer:** E-AT ApS  
Solvangsvej 16  
4681 Herfølge

**Samples:** Free standing VentGuard Ventilation Coating (SC50) samples (see page 2)

**Sampling:** The samples have been received here on 09 October 2019

**Period:** The testing has been carried out on 24 October 2019

**Procedure:** ASTM D2370, 2016 Standard Test Method for Tensile Properties of Organic Coating

**Test performed by:** Afshin Ghanbari-Siahkali, Senior Specialist, Ph.D.

**Result:** See page 4

**Storage:** According to the general terms and conditions of The Danish Technological Institute

**Remarks:** The name of customer in the report has been changed. The name of coating is corrected from VC50 to SC50.  
*Revised date 02 December 2019. This report replaces all previous reports concerning this test.*

**Conditions:** 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. The customer may not mention or refer to Danish Technological Institute or Danish Technological Institute's employees for advertising or marketing purposes unless Danish Technological Institute has granted its written consent in each case

**Place:** Danish Technological Institute, Taastrup, Plastics and Packaging Technology

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## Test

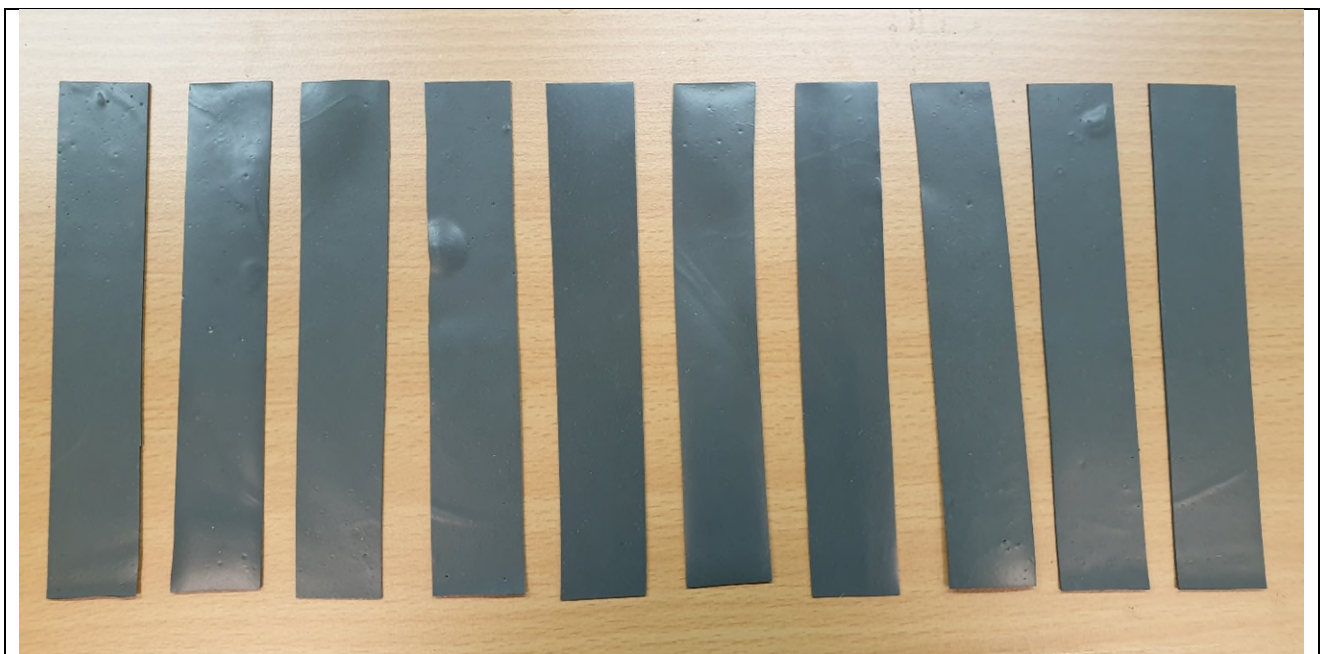
Determination of tensile properties

## Test method

ASTM D 2370, 2016                      Standard Test Method for Tensile Properties of Organic Coating

## Samples

The free standing VentGuard Ventilation Coating (SC50) samples are shown in Fig. 1 were received at the DTI-laboratory on 9 October 2019.



**Figure 1: As-received test samples for determination of tensile properties**

## Sample preparation

The test samples were prepared by the client. The test samples were conditioned at  $(23 \pm 2) \text{ }^\circ\text{C}$  /  $(50 \pm 5) \%$  RH in climate control laboratory until the time of testing.

As recommended by the standard, the thickness and the width of as-received test samples were measured at 5 different places along the test samples and an average value used for the width and thickness for the tensile test.

## Equipment

Tensile tester: Shimadzu tensile machine, model AG-X, Class 0.5 equipped with a 500 N load cell (Fig. 2)  
Calliper: Mitutoyo 0 - 150 mm, (32T11.01)  
Data logger for temperature & Humidity: ECOLOG, (32T13.60)



Figure 2: Tensile test set-up

**Test results**

All samples were kept conditioned for two weeks prior to the resistance to wear testing at (23 ±2) °C / (50 ±5) % RH.

The results are based on mean values of ten measurements (Table 1). The strain (%) is calculated by the Shimadzu tensile tester’s software (Trapezium, Version 1.03SP) based on jaw separation.

Test speed: 50 %/min.

Gauge length (Grip to Grip distance): 75 mm

Mean average dimensions: thickness: and width of each test sample is presented in Encl. 1



**Figure 3: As prepared specimens after the tensile test**

**Table 1: Summary of tensile test results**

<b>Sample ID</b>	<b>Max. Force (N)</b>	<b>Max stress (MPa)</b>	<b>Max jaw separation (mm)</b>	<b>Max Strain (%)</b>
VentGuard Ventilation Coating (SC50)	44.3 (8.0)	1.9 (0.2)	197.4 (33.9)	263.2 (45.2)

**Tensile properties of free standing VentGuard Ventilation Coating (SC50) sample**

**Tensile test acc. ASTM D2370**

Key Word	Free standing film	Product Name	VentGuard ventilation coating (VC50)
Test File Name	Tensil test ASTM D 2370_20191024_1102.xtak	Method File Name	Tensil test ASTM D 2370.xmak
Operator	AGS	Report Date	24-10-2019
Test Date	24-10-2019	Temperature	23 C
Humidity:	50 %RH	Test Mode	Single
Test Type	Tensile	Speed	50%/min
Shape	Plate	No of Batches:	1
Qty/Batch:	10	Gauge Length	75 mm

Name Parameters	Max_Force Calc. at Entire Areas	Max_Stress Calc. at Entire Areas	Max_Stroke Calc. at Entire Areas	Max_Stroke_Strain Calc. at Entire Areas
Unit	N	N/mm2	mm	%
1_1	56.68	2.05	252.686	336.91
1_2	35.21	1.83	175.554	234.07
1_3	45.42	2.07	222.961	297.28
1_4	42.13	1.64	164.679	219.57
1_5	42.67	2.04	219.898	293.20
1_6	31.84	1.39	152.648	203.53
1_7	38.04	2.18	195.786	261.05
1_8	46.37	1.80	162.504	216.67
1_9	51.43	2.03	193.323	257.76
1_10	53.05	2.10	233.792	311.72
Average	44.28	1.91	197.383	263.18
Standard Deviation	8.0	0.2	33.9	45.2
Maximum	56.68	2.18	252.686	336.91
Minimum	31.84	1.39	152.648	203.53

Name	Thickness	Width	Gauge_Length
Unit	mm	mm	mm
1_1	1.11	24.95	75.00
1_2	0.79	24.42	75.00
1_3	0.88	24.90	75.00
1_4	1.02	25.20	75.00
1_5	0.83	25.16	75.00
1_6	0.94	24.35	75.00
1_7	0.69	25.29	75.00
1_8	1.04	24.75	75.00
1_9	0.99	25.64	75.00
1_10	0.99	25.53	75.00

Tensile test of free standing film

