

Test laboratory for the fire behavior of building materials, Dipl.-Ing. (FH) Andreas Hoch  
Testing, supervising and certifying body, authorized by the building supervision authority

## **TEST REPORT PZ-Hoch-171244**

**for the proof of Fire behaviour according to DIN 4102, part 1**  
**Translation of the German test report – no guarantee for translation of technical terms**

<b>company</b>	<b>Artimo Textiles</b> De Meeten 53 4706 NK Roosendaal The Netherlands
<b>description of samples</b>	fabric consisting of 100% Polyester FR in 3 different colours
<b>name of the material</b>	<b>NIMA</b>
<b>sampling</b>	by the company itself
<b>content of request</b>	Proof of flammability to classify building materials to class B1 "schwerentflammbar" according to DIN 4102, part 1
<b>validity of test report</b>	31.10.2022
<b>result</b>	<b>The examined product meets in any colour the requirements of class B1 for "schwerentflammbare" (hardly flammable) building materials according to DIN 4102, part 1 (May 1998), suspended freely or with distance of &gt;40 mm to same or other plain materials.</b>

This test report includes 5 pages and 6 enclosures.

Remark: If the above mentioned building material is not used as product according to MBO § 2, Abs. 9, Ziffer 1, there is no need for a general building supervisory test report.

This test report is not valid if the examined building material is used as product in the meaning of state building prescriptions (MBO § 17, Abs. 3).

This test report does not replace an eventually necessary proof of applicability concerning building supervisory or building laws in the meaning of state building prescriptions. This has to be verified by:

- "allgemeine bauaufsichtliche Zulassung" (general building inspectorate approval ) or by
- „allgemeines bauaufsichtliches Prüfzeugnis" (general building inspectorate certificate) or by
- "Zustimmung im Einzelfall" (exceptional approval)

This test report can underlie building supervisory procedures

- for regular building products for the prescribed proofs of conformity
- for non-regular building products for the needed proofs of applicability.

This test report must not be published and copied without preceding agreement of the test laboratory and if agreed, only during validity and unchanged concerning appearance and contents.

## 1. Description of test material in condition as delivered

**PN 26353: NIMA** colour: white  
-fabric consisting of 100% Polyester FR- / The inner layer is black.  
There is no difference between side A and side B.  
characteristic values determined by the test laboratory:  
area weight: about 242 g/m<sup>2</sup> thickness: about 0,48 mm

**PN 26354: NIMA** colour: black  
-fabric consisting of 100% Polyester FR- / The inner layer is black.  
There is no difference between side A and side B.  
characteristic values determined by the test laboratory:  
area weight: about 246 g/m<sup>2</sup> thickness: about 0,50 mm

**PN 26355: NIMA** colour: red  
-fabric consisting of 100% Polyester FR- / The inner layer is black.  
There is no difference between side A and side B.  
characteristic values determined by the test laboratory:  
area weight: about 243 g/m<sup>2</sup> thickness: about 0,49 mm

The testing laboratory is not provided with further details concerning composition of the tested building materials. Samples are deposited.

## 2. Preparation of samples

The samples were kept in climate chamber 23/50 until they reached constant weight.

## 3. Arrangement of samples mounting: freely suspended

#9613:	flaming side A in warp direction	black
#9614:	flaming side B in weft direction	black
#9615:	flaming side B in weft direction	white
#9616:	flaming side B in weft direction	red

## 4. Date of test CW 45 in 2017

**5. Results** The test has been examined according to DIN 4102 (Mai 1998)

line no	Measurement	Result with the tested specimen				Dim.
	Test number	#9613	#9614	#9615	#9616	
	flaming direction / side	warp / A	weft / B	weft / B	weft / B	
	<u>colour of fabric</u>	<u>black</u>		<u>white</u>	<u>red</u>	
1	<u>Number of specimen arrangement</u> acc. to. DIN 4102/T15, schedule 1	1	1	1	1	
2	<u>Maximum flame height above bottom</u> edge of the specimen	30	30	30	30	cm
3	Time <sup>1)</sup>	0:02	0:02	0:02	0:02	min:s
4	<u>Burn through / melting</u> Time <sup>1)</sup>	0:04	0:03	0:03	0:03	min:s
	<u>Observations on the back side of the specimen</u>					
5	Flames / Glowing Time <sup>1)</sup>	./.	./.	./.	./.	min:s
6	Change of colour Time <sup>1)</sup>	./.	./.	./.	./.	min:s
7	<u>Falling of burning droplets</u> Start <sup>1)</sup>	./.	./.	./.	./.	min:s
8	<u>Extent</u> sporadic falling of burning droplets <sup>2)</sup>	./.	./.	./.	./.	
9	continuous falling of burning droplets <sup>2)</sup>	./.	./.	./.	./.	min:s
10	<u>Falling of burning droplets</u> Start <sup>1)</sup>	./.	./.	./.	./.	min:s
11	<u>Extent</u> sporadic falling of burning droplets <sup>2)</sup>	./.	./.	./.	./.	
12	continuous falling of burning droplets <sup>2)</sup>	./.	./.	./.	./.	
13	<u>After flame time at the bottom of the sieve (max.)</u>	./.	./.	./.	./.	min:s
14	<u>Impairment of the burner by dropping or falling material:</u> Time <sup>1)</sup>	./.	./.	./.	./.	min:s
15	<u>Premature end of test</u> Final occurrence of burning at the specimen <sup>1)</sup>	./.	./.	./.	./.	min:s
16	Time of eventually end of test <sup>1)</sup>	./.	./.	./.	./.	min:s
17	<u>After flame after end of test</u> Time <sup>1)</sup>	./.	./.	./.	./.	min:s
18	Number of specimen	./.	./.	./.	./.	
19	Front side of specimen <sup>2)</sup>	./.	./.	./.	./.	
20	Back side of specimen <sup>2)</sup>	./.	./.	./.	./.	
21	flame length	./.	./.	./.	./.	cm

line no.	Measurement	Result with the tested specimen				Dim.
	Test number	#9613	#9614	#9615	#9616	
	flaming direction / side	warp / A	weft / B	weft / B	weft / B	
	<u>Afterglow after end of test</u>	./.	./.	./.	./.	min:s
22	Time <sup>1)</sup>	./.	./.	./.	./.	
23	Number of specimen	./.	./.	./.	./.	
	<u>Place of appearance</u>	./.	./.	./.	./.	
24	Lower half of the specimen <sup>2)</sup>	./.	./.	./.	./.	
25	Upper half of the specimen <sup>2)</sup>	./.	./.	./.	./.	
26	Front side of specimen <sup>2)</sup>	./.	./.	./.	./.	
27	Back side of specimen <sup>2)</sup>	./.	./.	./.	./.	
	<u>Density of smoke</u>					% * min
28	≤ 400 % * min	1	1	1	1	
29	> 400 % * min <sup>4)</sup>	./.	./.	./.	./.	
30	Diagram: encl. no.	1	2	3	4	
31	<u>Residual lengths: individual value <sup>3)</sup></u>					
	Specimen 1	66	69	66	70	cm
	Specimen 2	67	61	63	64	cm
	Specimen 3	67	56	64	67	cm
	Specimen 4	60	62	61	66	cm
32	<u>Average value, individual test <sup>3)</sup></u>	<b>65</b>	<b>62</b>	<b>64</b>	<b>67</b>	
33	<u>Photo of specimen in enclosure no.</u>	1	2	3	4	
34	<u>Flue gas temperature</u>	112	116	117	116	°C
35	Maximum of average value Time <sup>1)</sup>	09:39	09:57	09:09	09:45	min:s
36	Diagram: encl. no.	1	2	3	4	
37	Remarks: - none -					

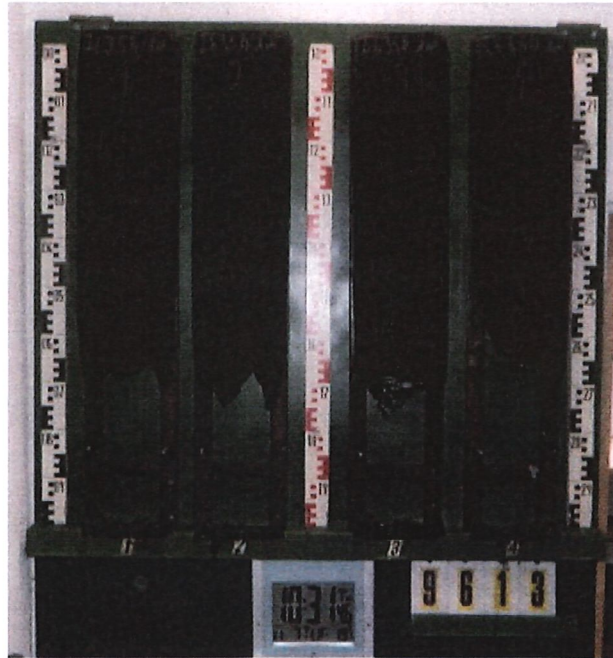
<sup>1)</sup> indication of times: from the begin of testing procedure <sup>2)</sup> checked off if applicable

<sup>3)</sup> indication of carrier/foam layer separated in case of fire-proofing agents

<sup>4)</sup> very strong development of smoke



**„Brandschacht“-test #9613**

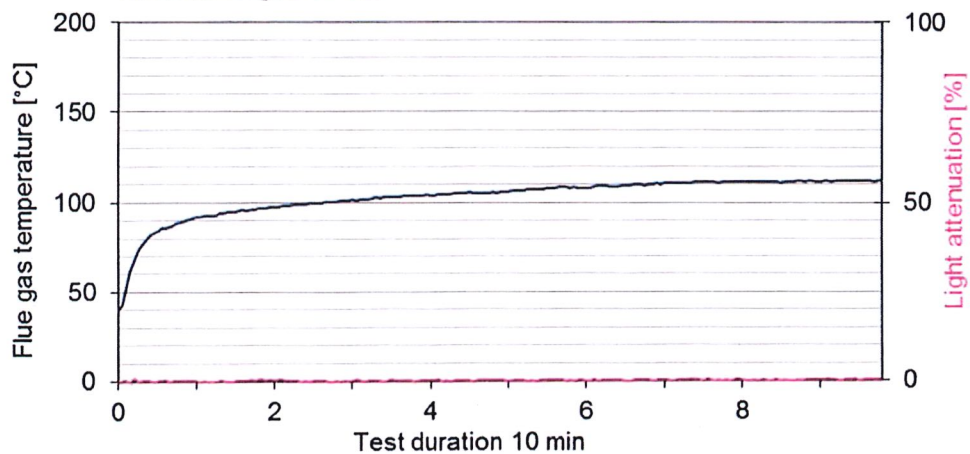


**measurement**

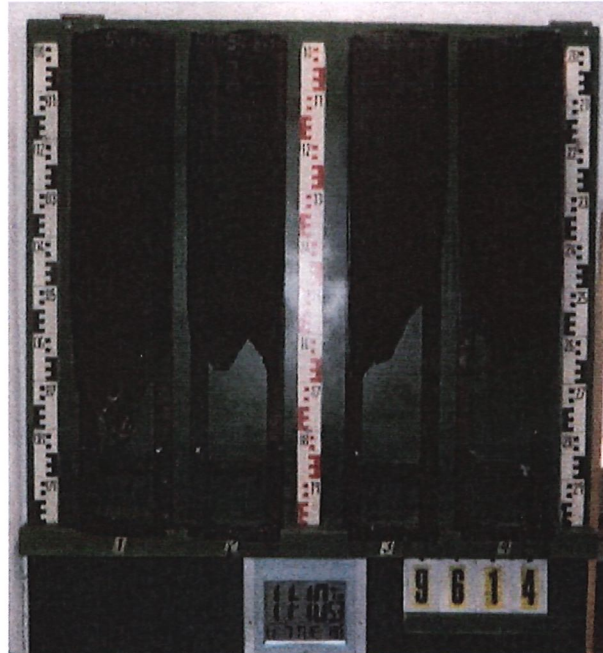
**#9613, ARTIMO, "NIMA", A+K**

Max. flue temperature: 112°C, Smoke density integral: 1%min

Residual length: 65 cm



„Brandschacht“-test #9614

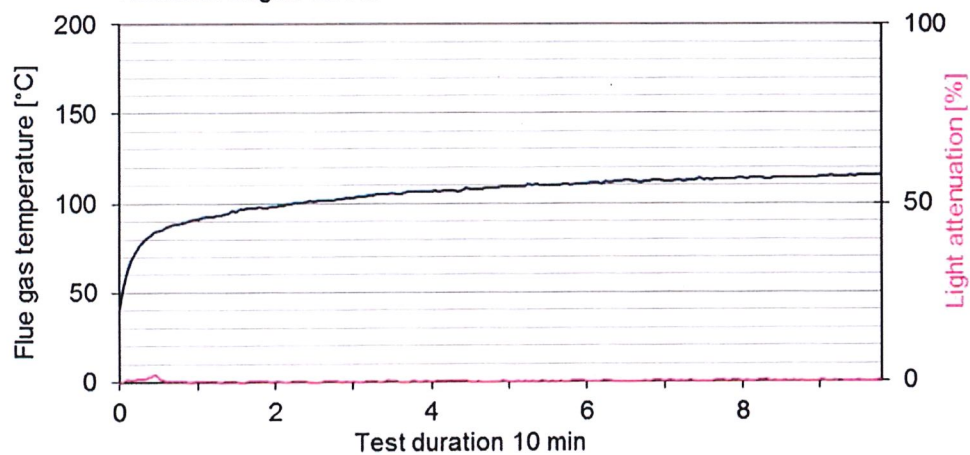


measurement

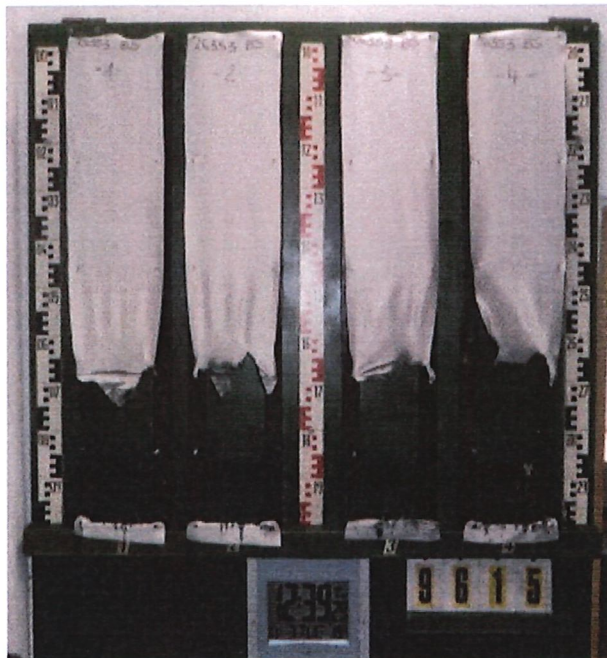
#9614, PN26354: ARTIMO, "NIMA", A+K

Max. flue temperature: 116°C, Smoke density integral: 1%/min

Residual length: 62 cm



**„Brandschacht“-test #9615**

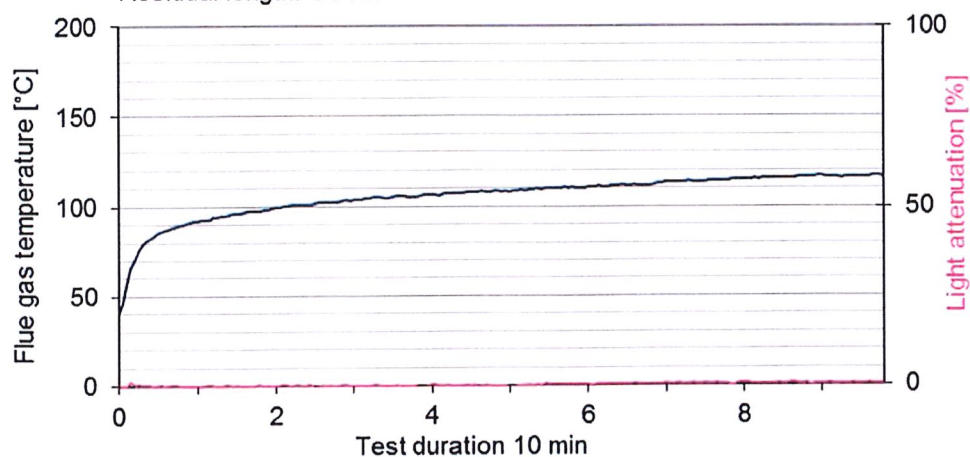


**measurement**

**#9615, PN26353: ARTIMO, "NIMA", A+K**

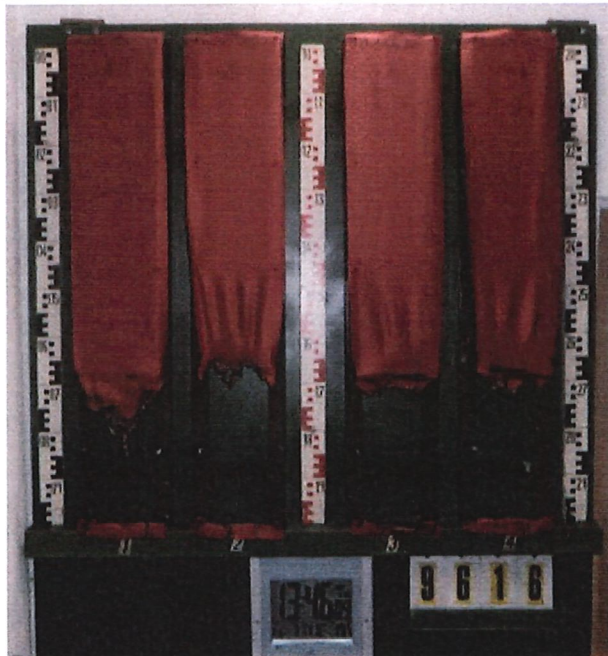
Max. flue temperature: 117°C, Smoke density integral: 1%/min

Residual length: 64 cm





**„Brandschacht“-test #9616**

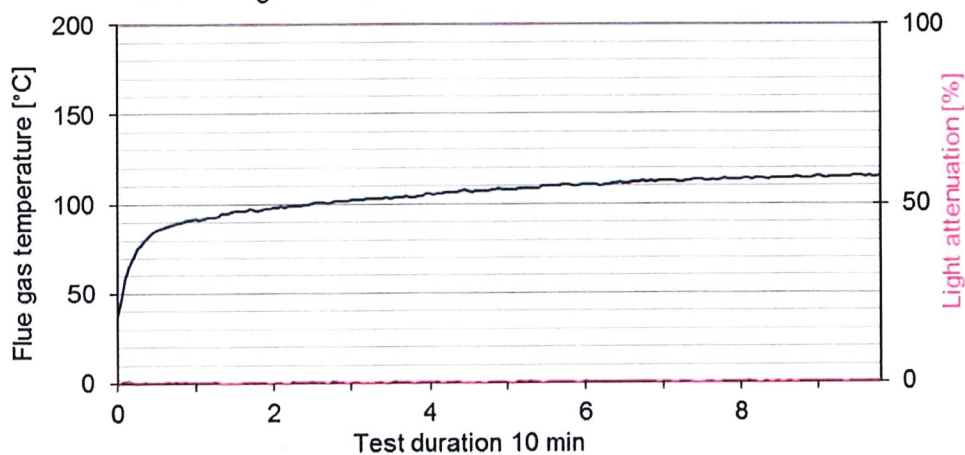


**measurement**

**#9616, PN26355: ARTIMO, "NIMA", A+K**

Max. flue temperature: 116°C, Smoke density integral: 1%/min

Residual length: 67 cm





**Test for normal flammability  
classifying B2 according to DIN 4102**

1. Description of test material in condition as delivered look at page 2

2. Preparation of samples

Out of the material there have been cut samples for the ignitability apparatus.  
The samples were kept in a climate 23/50 until they reached constant weight.

3. Arrangement of samples -freely suspended-

Flaming in warp and weft direction / Flaming side A and side B

4. Date of test CW 45 in 2017

5. Results

PN 26354: flaming side B in weft	edge-test						surface-test						Dim
samples no.	1	2	3	4	5	6	1	2	3	4	5	6	
ignition <sup>1)</sup>	1	1	1	1	1	1	2	--	--	--	--	--	s
reaching the mark of measurement <sup>1)2)</sup>	./.	./.	./.	./.	./.	./.	./.	--	--	--	--	--	S
max. flame height	13	13	13	14	14	14	11	--	--	--	--	--	cm
time	12	12	12	15	15	15	12	--	--	--	--	--	
self cessation of the flames end of afterflame <sup>1)</sup>	17	14	14	18	17	20	15	--	--	--	--	--	s
end of glowing <sup>1)</sup>	./.	./.	./.	./.	./.	./.	./.	--	--	--	--	--	s
flames were extinguished after <sup>1)</sup>	./.	./.	./.	./.	./.	./.	./.	--	--	--	--	--	s
smoke development (visual)	heavy						heavy						
dropping of burning material during 20 s <sup>1)</sup>	./.	./.	./.	./.	./.	-/-	./.	--	--	--	--	--	s
Appearance after test: burned out till max. height 14 cm x width 8 cm													

PN 26354: additional tests	edge-test						surface-test						Dim
samples no.	1	2	3	4	5	6	1	2	3	4	5	6	
ignition <sup>1)</sup>	1	1	1	--	--	--	2	2	2	--	--	--	s
reaching the mark of measurement <sup>1)2)</sup>	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
max. flame height	11	10	14	--	--	--	12	7	7	--	--	--	cm
time	12	3	10	--	--	--	15	15	8	--	--	--	
self cessation of the flames end of afterflame <sup>1)</sup>	37	./.	20	--	--	--	42	15	8	--	--	--	s
end of glowing <sup>1)</sup>	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
flames were extinguished after <sup>1)</sup>	./.	25	./.	--	--	--	./.	./.	./.	--	--	--	s
smoke development (visual)	heavy						heavy						
dropping of burning material during 20 s <sup>1)</sup>	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
Appearance after test: burned out till max. height 14 cm x width 8 cm													

<sup>1)</sup> time mentioned from the beginning of the test <sup>2)</sup> during 20 Sec -/- no appearance -- no information

PN 26353: additional tests	edge-test						surface-test						Dim
samples no.	1	2	3	4	5	6	1	2	3	4	5	6	
ignition <sup>1)</sup>	1	1	1	1	--	--	2	2	2	1	--	--	s
reaching the mark of measurement <sup>1)2)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
max. flame height	4	5	3	3	--	--	4	5	4	4	--	--	cm
time	4	4	4	4	--	--	4	6	4	4	--	--	
self cessation of the flames end of afterflame <sup>1)</sup>	4	5	4	4	--	--	5	7	5	5	--	--	s
end of glowing <sup>1)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
flames were extinguished after <sup>1)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
smoke development (visual)	little						little						
dropping of burning material during 20 s <sup>1)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
Appearance after test: burned out till max. height 6 cm x width 3 cm													

PN 26355: additional tests	edge-test						surface-test						Dim
samples no.	1	2	3	4	5	6	1	2	3	4	5	6	
ignition <sup>1)</sup>	1	1	1	1	--	--	2	2	2	2	--	--	s
reaching the mark of measurement <sup>1)2)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
max. flame height	5	5	4	4	--	--	5	5	5	5	--	--	cm
time	5	5	6	6	--	--	5	5	5	4	--	--	
self cessation of the flames end of afterflame <sup>1)</sup>	5	5	6	6	--	--	9	8	6	5	--	--	s
end of glowing <sup>1)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
flames were extinguished after <sup>1)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
smoke development (visual)	moderate						moderate						
dropping of burning material during 20 s <sup>1)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
Appearance after test: burned out till max. height 8 cm x width 3 cm													

<sup>1)</sup> time mentioned from the beginning of the test <sup>2)</sup> during 20 Sec    -/- no appearance    -- no information

6. Remarks and explanations to the testing procedure - none –

7. Opinion concerning the dropping of burning material

The test for normal flammability shows no burning dripping material.