

CLASSIFICATION REPORT

(free translation of French test report N° P117172 - DE/1)
established according to the article 5 of the Department State Order dated on 21 November 2002.

VALIDITY 5 YEARS FROM 18 November 2013**N° P117172 - DE/2**

And appendix of 6 pages

Material submitted by : ISOFLEX AB
Soldatvägen 1
78350 GUSTAFS
SWEDEN

Commercial trademark : MONIFLEX

Brief description :
Global composition : Cross wise-laminated plates of cellulose diacetate, cast and fireproofed in mass.
End-use : Insulation for railway cars and locomotives.
Mass : (13 ± 0.2) kg/m³
Thickness : (20 to 60 ± 1%) mm
Colour : Transparent

Test report : N° P117172 - DE/2 dated on 18 November 2013

Type of tests : Heat radiation test, flame spread test, dripping test.

Classification : **M1**

VALID FOR ANY APPLICATION FOR WHICH THE PRODUCT IS NOT SUBJECT TO CE MARKING.**Durability of classification (NF P 92-512 : 1986) : APPARENTLY NOT LIMITED**

In view of criteria resulting from the tests described in the appended Test Report N° P117172 - DE/2

The indicated classification prejudices in no way the conformity of the materials commercialized to the samples submitted to the tests and can in no way be considered as a certificate of qualification.

This is not a product certification according to the L115-27 article of the consumption code and to the law dated on 3rd June 1994.**Note:** It is only allowed to reproduce this unique page as an integral photocopy or the whole classification report and the annexes that contains **6 pages**.

Trappes, 18 November 2013



Responsible for test

Emilie DENIAU

TEST REPORT

(free translation of French test report N° P117172 – DE/1)
Established according to the article 5 of the department State Order dated on 21 november 2002.

VALIDITY 5 YEARS FROM 18 November 2013

N° P117172 - DE/2

And appendix of 5 pages

1. PURPOSE OF TEST

The purpose of tests to which this report relates is to determine the classification of materials, in accordance with the stipulations in the order from the Ministère de l'Intérieur, dated on 21 November 2002 relating to their reaction to fire.

2. SAMPLES SUBMITTED

Test requested by	:	ISOFLEX AB
Date of order	:	Your agreement dated 2013/10/08 on quotation n° 2013/11174.
Producer	:	ISOFLEX AB
Trademark (commercial reference)	:	MONIFLEX
Global Composition	:	Cross wise-laminated plates of cellulose diacetate, cast and fireproofed in mass.
Characteristics attested by sponsor :		
Mass	:	(13 ± 0.2) kg/m ³
Thickness	:	(20 to 60 ± 1%)
Color	:	Transparent

The test report is following next page

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For any difficulties in the interpretation of this document, please refer to original text in French
(dossier N° P117172 - DE/1) which is the only authentic one. It contains 6 pages.**

**TEST PROCEDURES AND CLASSIFICATION ON TENSE MATERIALS OR MADE SUCH (GLUED)
OF ALL THICKNESS AND FLEXIBLE MATERIALS WITH THICKNESSES OVER 5 MM
(EXCEPT FILTERING MEDIA)**

1. MAIN TEST(S) : HEAT RADIATION TESTS (NF P 92-501 : 1995)

These test consist in submitting the samples, in clearly defined conditions, to the actions of a radiating heat source and producing : ignition of the released gases, flame propagation.

The sample (30x40 cm) inclined at 45° is submitted to a clearly defined radiation, emitted by an electric radiator, whose surface is 30 mm below the surface of the test sample. The released gases pass in contact with gas ignitors located on either side of the test sample. The duration of the test is 20 minutes.

2. COMPLEMENTARY TEST(S)

FLAME SPREAD TEST (NF P 92-504 : 1995)

The standardized sample is set vertically and the propane burner flame is applied on its bottom edge. The flame spreading speed is measured between 2 marks on a distance of 25 cm along the test sample. In case of no spreading, time of flame persistence, destroyed area and flaming falling drippings are observed.

DRIPPING TEST (NF P 92-505 : 1995)

The sample is set horizontally on a grid , under the heat radiant source, whose surface is placed 30 mm above the sample. During 5 minutes, the heat source is removed from the sample in case of ignition, and re-applied when it extinguishes .

During the 5 last minutes, the heat source stays above the sample. Ignition of cotton, set 30 cm beneath the grid, by flaming or non flaming drippings is considered.

3. SAMPLES CONDITIONING

The samples submitted with standardized dimensions are kept in a conditioned enclosure (23 ± 2 °C and 50 ± 5 % RH) until their mass has stabilized. The mass is considered as stabilized when 2 succesives weighings over 24 h do not differ more than 0,1 % or 0,1g.

4. CLASSIFICATION OF MATERIALS (NFP 92-507 : 2004)

It is established according to the above test(s). Combustible materials are classified M1, M2, M3, M4.

Only the materials classified M1 without effective ignition during the heat radiant test can claim to the M0 classification.

5. DURABILITY (NFP 92-512 : 1986)

According to the NF P 92-512 this material is apparently not the subject of durability test.

6. RÉSULTS

6.1. HEAT RADIATION TEST

Thickness 20 mm	Sample 1	Sample 2	Sample 3	
First ignition time (s) exposed side (ti1)	-	-	-	
First ignition time (s) non exposed side (ti2)	-	-	-	
Total flame height Σh (cm)	0	0	0	
Total burning time ΣΔT	0	0	0	Average =
$Q = \frac{100 \times \sum H}{\pi \sqrt{\sum \Delta T}}$	0	0	0	0
Non flaming drops fall	Yes	Yes	Yes	
Flaming drops fall	No	No	No	

Thickness 30 mm	Sample 1	Sample 2	
First ignition time (s) exposed side (ti1)	-	-	
First ignition time (s) non exposed side (ti2)	-	-	
Total flame height Σh (cm)	0	0	
Total burning time ΣΔT	0	0	Average =
$Q = \frac{100 \times \sum H}{\pi \sqrt{\sum \Delta T}}$	0	0	0
Non flaming drops fall	Yes	Yes	
Flaming drops fall	No	No	

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Thickness 60 mm	Sample 1	Sample 2	Sample 3	
First ignition time (s) exposed side (ti1)	–	–	–	
First ignition time (s) non exposed side (ti2)	–	–	–	
Total flame height Σh (cm)	0	0	0	
Total burning time ΣΔT	0	0	0	Average =
$Q = \frac{100 \times \sum H}{\pi \sqrt{\sum \Delta T}}$	0	0	0	0
Non flaming drops fall	Yes	Yes	Yes	
Flaming drops fall	No	No	No	

6.2. FLAME SPREAD TEST

Thickness 20 mm	Sample 1	Sample 2	Sample 3
Flame persistence after ISO 6940 burner removal	No	No	No
Persistence period	0	0	0
Maximum period inferior or equal to 5s	Yes		
Non flaming drops fall	No	No	No
Flaming drops fall	No	No	No
Flame spreading speed superior to 2 mm/s	No	0	0

Thickness 30 mm	Sample 1	Sample 2
Flame persistence after ISO 6940 burner removal	No	No
Persistence period	0	0
Maximum period inferior or equal to 5s	Yes	
Non flaming drops fall	No	No
Flaming drops fall	No	No
Flame spreading speed superior to 2 mm/s	No	0

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Thickness 60 mm	Sample 1	Sample 2	Sample 3
Flame persistence after ISO 6940 burner removal	No	No	No
Persistence period	0	0	0
Maximum period inferior or equal to 5s	Yes		
Non flaming drops fall	No	No	No
Flaming drops fall	No	No	No
Flame spreading speed superior to 2 mm/s	No	0	0

6.3. DRIPPING TEST

Thickness 20 mm	Sample 1	Sample 2	Sample 3
Non flaming drops fall	Yes	Yes	Yes
Inflamed falling drippings	No	No	No
Cotton ignition	No	No	No

Thickness 30 mm	Sample 1	Sample 2
Non flaming drops fall	Yes	Yes
Inflamed falling drippings	No	No
Cotton ignition	No	No

Thickness 60 mm	Sample 1	Sample 2	Sample 3
Non flaming drops fall	No	No	No
Inflamed falling drippings	No	No	No
Cotton ignition	No	No	No

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7. OBSERVATIONS ABOUT TESTS

The samples were tested with edges draughtproofing.

Receipt of samples : 2013-10-22

End of tests : 12 to 13/11/2013

8. CONCLUSION AND CLASSIFICATION

In view of the results, the material with the characteristics described in the first page of this test report has the classification

M1

VALID FOR ANY APPLICATION FOR WHICH THE PRODUCT IS NOT SUBJECT TO CE MARKING.

9. CLASSIFICATION DURABILITY

APPARENTLY NOT LIMITED

Trappes, 18 November 2013



La Responsable de l'essai

Emilie DENIAU

Attention is attracted to the fact that the results obtained with the samples described in the present document are not generalizable without justification of the representativeness of samples and tests.