



FIRE AND RESCUE DEPARTMENT UNDER THE MINISTRY OF THE INTERIOR OF
THE REPUBLIC OF LITHUANIA
FIRE RESEARCH CENTRE
PRODUCTS RESEARCH DIVISION

1. Introduction

This classification report defines the classification assigned to the mineral wool mats “M-16” and „M-17“ in accordance with procedures given in LST EN 13501-1:2019

CLASSIFICATION OF REACTION TO FIRE IN ACCORDANCE WITH LST EN 13501-1:2019

Customer: OJSC “Glassworks “Neman”
8 Korzuka str., Berezovka, 231306, Lida district, Grodno region
Republic of Belarus
Ph. +375 154 561 435

Prepared by: Fire Research Centre
Švitrigailos str. 18, LT-03223 Vilnius, Lithuania

Product name: Mineral wool mats “M-16” and „M-17“

Classification report No.: 20-10.2019.24

Issue number: Exemplar No. 2 (*Classification report was prepared only in English*)

Date of issue: 23 May 2019

Base: Contract of work performance No. 57-24 (2GB/1KL) of 20th of March 2019.
Request, reg. No. 55-45/19.

This classification report consists of three pages and may only be used or reproduced in its entirety.

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2. Details of classified product

2.1 General

The products, mineral wool mats “M-16“ and „M-17“, are defined as a thermal insulation of buildings.

2.2 Product description

In accordance with declaration of manufacturer organic binder content by mass (LOI) (3,0 – 6,0) %, thickness 50 mm – 150 mm, density of mats “M-16” 14,5 kg/m³ – 16 kg/m³, density of mats “M-17” 16 kg/m³ – 18 kg/m³.

Tests according to standards LST EN ISO 1716:2018 and LST EN ISO 1182:2010 were performed to the product “M-17” which has higher amount of organic content (% and kg/m³) (determined nominal organic binder content by mass (LOI) 5,9 %, production date 05-03-2019 (test report No. 1918 of 20th of May 2019 of VGTU “Institute of building materials, Laboratory of thermal insulating materials and acoustics”).

3. Reports and results in support of classification

3.1 Reports

Name of Laboratory	Name of sponsor	Report ref. no.	Test method and date Field of application rules and date
Fire Research Centre Products Research Division	OJSC “Glassworks “Neman”	20-15.2019.2	LST EN ISO 1716:2018
Fire Research Centre Products Research Division	OJSC “Glassworks “Neman”	20-5.2019.1	LST EN ISO 1182:2010

3.2 Results

Test method	Parameter	No. tests	Results	
			Continuous parameter – mean (m)	Compliance with parameters
LST EN ISO 1182	$\Delta T \leq 30 \text{ }^\circ\text{C}$ $\Delta m \leq 50 \text{ } \%$ $t_f = 0 \text{ s}$	5	1 5 0	Compliant Compliant Compliant
LST EN ISO 1716	$\text{PCS} \leq 2,0 \text{ MJ/kg}$	3	1,2	Compliant

4. Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with LST EN 13501-1:2019 chapter 11.

4.2 Classification

The product, mineral wool mats “M-16“ and „M-17“, in relation to its reaction to fire behaviour is classified:

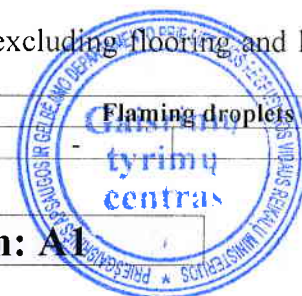
A1

The format of reaction to fire classification construction products excluding flooring and linear pipe thermal insulation products is:

Fire behaviour	Smoke production	Flaming droplets
A1	-	-

i.e. A1

Reaction to fire classification: A1



4.3 Field of application

This classification is valid for in chapter 2.2 listed product parameters and additionally for following product parameters:

- dimensions and form of the mats are unrestricted.

5. Limitations

This classification document does not represent type of approval or certification of the product.

Classification Report prepared by:

Chief Specialist
Aurelija Kindurienė



Classification Report approved by:

Chief Specialist
Andrejus Jefimovas





FIRE AND RESCUE DEPARTMENT UNDER THE MINISTRY
OF THE INTERIOR OF THE REPUBLIC OF LITHUANIA

**FIRE RESEARCH CENTRE
PRODUCTS RESEARCH DIVISION**



BANDYMAI
ISO/IEC 17025

Nr. LA. 01.032

**TEST REPORT
No. 20-5.2019.1**

DATE OF ISSUE	23 May 2019
TEST METHOD	LST EN ISO 1182:2010 Reaction to fire tests for products – Non-combustibility test (ISO 1182:2010)
CUSTOMER	OJSC “Glassworks “Neman” 8 Korzuka str., Berezowka, 231306, Lida district, Grodno region Republic of Belarus Ph. +375 154 561435
OBJECT	Mineral wool mats “M-17”. In accordance with declaration of manufacturer organic binder content by mass (LOI) (3,0 – 6,0) %, density 16 kg/m ³ – 18 kg/m ³ , thickness 75 mm. Determined nominal organic binder content by mass (LOI) 5,9 %, production date 05-03-2019 (test report No. 1918 of 20 th of May 2019 of VGTU “Institute of building materials, Laboratory of thermal insulating materials and acoustics”).
PRODUCER	OJSC “Glassworks “Neman”
BASE	Contract of work performance No. 57-24 (2GB/1KL) of 20 th of March 2019. Request, reg. No. 55-45/19.
ISSUE	Exemplar No. 2 (<i>Test report was prepared only in English</i>)
TEST DATE	22 May 2019
TEST PLACE	Miško str. 7, Valčiūnai vil., LT-13221, Vilnius distr., Lithuania

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ORDER OF OBJECT SAMPLING

Sampling report No. 129-VAG. Object was selected on 14th of March 2019 in OJSC "Glassworks "Neman", 8 Korzuka str., Berezovka, Lida district, Grodno region, Republic of Belarus by expert of VĮ "SPSC" V. Gauronskis and representative of OJSC "Glassworks "Neman" Zhuk N. A.

DATE OF OBJECT DELIVERY

19 March 2019

SPECIMENS PREPARATION

Specimens were prepared by specialist of FRC PRD in accordance with requirements of LST EN ISO 1182:2010 5 chap.

SPECIMENS CONDITIONING

Conditioning time: longer than 2 weeks, relative humidity: $(50 \pm 5) \%$, ambience temperature: $(23 \pm 2) ^\circ\text{C}$. The specimens were dried for 22 hours in the ventilated drying oven at $60 ^\circ\text{C}$ temperature. Before the test, the specimens were cooled in a desiccator to an ambience temperature.

TEST CONDITIONS

Test conditions are given in Table 1.

Table 1

Test date	Specimens No.	Ambience temperature before tests [$^\circ\text{C}$]	Ambience temperature after tests [$^\circ\text{C}$]	Relative humidity [%]
22-05-2019	1-5	24	24	62

CALIBRATION RESULTS

Furnace and furnace wall temperature measurements results are given in Annex A.

DETERMINED PARAMETER

Mass loss, sustaining flaming, increasing of temperature.

TEST RESULTS

Test results are given in Table 2.

Table 2

Measured parameters	Test No.					
	1	2	3	4	5	Average
Mass loss, %	5,7	5,2	4,7	6,9	4,3	5
Sustaining flaming, s	0	0	0	0	0	0
Increasing of furnace temperature, $^\circ\text{C}$	1,1	1,2	1,1	1,1	0,8	1

DEFLECTION FROM TEST METHOD

No deflection from test method.

TEST OBSERVATIONS

All specimens changed their form (shrank).

DECLARATION

The test results relate only to the behaviour of the test specimen of a product under particular conditions of the test, they are not intended to be the sole criterion for assessing the potential fire hazard in use.

Tests were performed by
Chief Specialist

Report prepared by
Chief Specialist

Report approved by:
Technical Manager

Chief Specialist


Andrejus Jefimovas

Aurelija Kinduriene

Vitold Kostiukevich

Andrejus Jefimovas



Annex A

Table A.1 Furnace wall temperature measurements results

Readings position	Furnace wall temperature, °C			T _{avg.level} , °C	T _{dev.level} , %
	1 axis	2 axis	3 axis		
a level (+ 30 mm)	781,8	790,1	787,7	786,533 ⁽³⁾	0,774
b level (0 mm)	793,1	792,1	802,7	795,967	0,416
c level (- 30 mm)	789,2	797,1	800,2	795,500 ⁽³⁾	0,357
				792,667	0,52 ⁽²⁾
T _{avg.axis} , °C	788,033	793,100	796,867	792,667	
T _{dev.axis} , %	0,585	0,055	0,530	0,39 ⁽¹⁾	

(1) - T_{avg.dev.axis} < 0,5 %;

(2) - T_{avg.dev.level} < 1,5 %;

(3) - T_{avg.level a} < T_{avg.level c}

Table A.2 Furnace wall temperature measurements results

Furnace height, mm	T _{up} , °C	T _{down} , °C	T _{avg} , °C	T _{min} , °C	T _{max} , °C
5	636,8	636,8	636,8	570	639
15	676,4	676,0	676,2	616	678
25	697,5	699,3	698,4	652	705
35	716,3	716,8	716,6	679	724
45	728,3	730,3	729,3	699	736
55	735,2	737,9	736,6	712	743
65	739,4	741,9	740,7	720	746
75	740,1	743,0	741,6	723	747
85	736,1	739,9	738,0	722	746
95	728,0	731,9	730,0	717	743
105	716,9	719,5	718,2	709	737
115	699,1	704,9	702,0	698	729
125	685,6	688,9	687,3	683	716
135	667,4	668,7	668,1	664	698
145	640,2	642,4	641,3	639	674





PRD

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**TEST REPORT****No. 20-15.2019.2**

DATE OF ISSUE	23 May 2019
TEST METHOD	LST EN ISO 1716:2018 Reaction to fire tests for products – Determination of the gross heat of combustion (calorific value) (ISO 1716:2018)
CUSTOMER	OJSC “Glassworks “Neman” 8 Korzuka str., Berezovka, 231306, Lida district, Grodno region Republic of Belarus Ph. +375 154 561 435
OBJECT	Mineral wool mats “M-17”. In accordance with declaration of manufacturer organic binder content by mass (LOI) (3,0 – 6,0) %, density 16 kg/m ³ – 18 kg/m ³ , thickness 75 mm. Determined nominal organic binder content by mass (LOI) 5,9 %, production date 05-03-2019 (test report No. 1918 of 20 th of May 2019 of VGTU “Institute of building materials, Laboratory of thermal insulating materials and acoustics”).
PRODUCER	OJSC “Glassworks “Neman”
BASE	Contract of work performance No. 57-24 (2GB/1KL) of 20 th of March 2019. Request, reg. No. 55-45/19.
ISSUE	Exemplar No. 2 (<i>Test report was prepared only in English</i>)
TEST DATE	22 May 2019
TEST PLACE	Miško str. 7, Valčiūnai vil., LT-13221, Vilnius distr., Lithuania

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SAMPLING ORDER OF OBJECT

Sampling report No. 129-VAG. Object was selected on 14th of March 2019 in OJSC "Glassworks "Neman", 8 Korzuka str., Berezovka, Lida district, Grodno region, Republic of Belarus by expert of VJ "SPSC" V. Gauronskis and representative of OJSC "Glassworks "Neman" Zhuk N. A.

DATE OF OBJECT DELIVERY

19 March 2019

SPECIMENS PREPARATION

Samples were taken from five parts of the mat randomly; mineral wool thickened by press, triturated and the powder was conditioned longer than 2 weeks. As combustion aid was used benzoic acid.

SPECIMENS CONDITIONING

Conditioning time: longer than 2 weeks;

Relative humidity: $(50 \pm 5) \%$;

Ambience temperature: $(23 \pm 2) ^\circ\text{C}$.

TEST CONDITIONS

Test conditions are given in Table 1

Table 1

Test date	Ambience temperature before tests [$^\circ\text{C}$]	Ambience temperature after tests [$^\circ\text{C}$]	Relative humidity [%]
22-05-2019	24	24	62

DETERMINED PARAMETER

Gross heat of combustion.

TEST RESULTS

Test results are given in Table 2.

Calibration coefficient of calorimeter: 13072 J/ $^\circ\text{C}$

Table 2

Gross heat of combustion, MJ/kg			
Specimen No. 1	Specimen No. 2	Specimen No. 3	Average
1,17	1,22	1,30	1,2

DEFLECTION FROM TEST METHOD

No deflection from test method.

TEST OBSERVATIONS

After test in the crucible left rests of incombustible part of sample.

DECLARATION

The test results relate only to the behaviour of the test specimen of a product under particular conditions of the test, they are not intended to be the sole criterion for assessing the potential fire hazard in use.

NOTE

For this test method the flexible accreditation procedure was applied.

Tests were performed by
Chief Specialist

Report prepared by
Chief Specialist

Report approved by:
Technical Manager

Chief Specialist


Andrejus Jefimovas
Aurelija Kinduriene
Vitold Kostiukevič
Andrejus Jefimovas