



TEST REPORT

Natural stone – Water absorption

REPORT Nº: **232961PN003** DATE: **07-06-2023** PAGE: **1/2**

PETITIONER: **Loimaan Kivi Oy**  
**Palininkatu 2. 32200 Loimaa. (Finland)**

SAMPLE IDENTIFICATION:

Date of delivery **10-01-2023**  
Description **6 cubic specimens of nominal dimensions 50x50x50 mm**  
Commercial name \* **Varpaisjärven Musta / Varpaisjärvi Black Diabas**  
Petrographic definition \* **Diabase**  
Place of quarrying \* **Hetelammentie 20 Varpaisjärvi N63.423936, E27.882752**  
Supplier \* **Loimaan Kivi Oy**  
Sampled by \* **Mikko Paljakka (30-11-2022)**

\* Information declared by the petitioner

TEST METHOD: **EN 13755:2008 Natural stone test methods. Determination of water absorption at atmospheric pressure**

Deviations –  
Specimen preparation –  
Place of testing **Centro Tecnológico del Mármol**  
Dates of testing **17-05-2023 / 26-05-2023**





## TEST REPORT

### Natural stone – Water absorption

REPORT Nº: **232961PN003**

DATE: **07-06-2023**

PAGE: **2/2**

#### RESULTS:

Specimen

Water absorption,  $A_b$  (%)

Mean value of water absorption,  $\bar{A}_b$

01	02	03	04	05	06
0,1	0,1	0,1	0,1	0,1	0,1
0,1 %					

Remarks: The uncertainties are calculated and at the client's disposal  
The results are expressed to the nearest 0,1 %

#### DISCLAIMER:

The laboratory is not responsible for the sampling or for the information declared by the client. The results refer only to the sample received at the laboratory, on the expressed date.  
This report shall not be reproduced, except in full, without the written consent of the laboratory.

Digitally signed by

Antonio Molina  
Director Técnico

## Natural stone – Apparent density and open porosity

REPORT Nº: **232961PN004A** DATE: **07-06-2023**PAGE: **1/2**PETITIONER: **Loimaan Kivi Oy**  
**Palininkatu 2. 32200 Loimaa. (Finland)**

## SAMPLE IDENTIFICATION:

Date of delivery **10-01-2023**

Description **6 cubic specimens of nominal dimensions 50x50x50 mm**

Commercial name \* **Varpaisjärven Musta / Varpaisjärvi Black Diabas**

Petrographic definition \* **Diabase**

Place of quarrying \* **Hetelammentie 20 Varpaisjärvi N63.423936, E27.882752**

Supplier \* **Loimaan Kivi Oy**

Sampled by \* **Mikko Paljakka (30-11-2022)**

\* Information declared by the petitioner

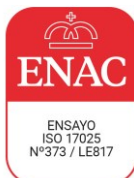
TEST METHOD: **EN 1936:2007 Natural stone test methods. Determination of real density and apparent density, and of total and open porosity. Section 8.1**

Deviations –

Specimen preparation –

Place of testing **Centro Tecnológico del Mármol**

Dates of testing **24-04-2023 / 28-04-2023**





TEST REPORT

Natural stone – Apparent density and open porosity

REPORT Nº: **232961PN004A** DATE: **07-06-2023**

PAGE: **2/2**

RESULTS:

Specimen	07	08	09	10	11	12
Apparent density, $\rho_b$ (kg/m <sup>3</sup> )	3080	3080	3070	3080	3070	3080
Open porosity, $p_o$ (%)	0,2	0,3	0,3	0,3	0,3	0,3
Mean value of apparent density, $\bar{\rho}_b$	3080 kg/m <sup>3</sup>					
Mean value of open porosity, $\bar{p}_o$	0,3 %					

Remarks: The uncertainties are calculated and at the client's disposal  
The results of density are expressed to the nearest 10 kg/m<sup>3</sup>  
The results of porosity are expressed to the nearest 0,1 %

DISCLAIMER:

The laboratory is not responsible for the sampling or for the information declared by the client. The results refer only to the sample received at the laboratory, on the expressed date.  
This report shall not be reproduced, except in full, without the written consent of the laboratory.

Digitally signed by

Antonio Molina  
Director Técnico

**Natural stone – Abrasion resistance (Capon method)**REPORT Nº: **232961PN006**DATE: **07-06-2023**PAGE: **1/2**

PETITIONER: **Loimaan Kivi Oy**  
**Palininkatu 2. 32200 Loimaa. (Finland)**

## SAMPLE IDENTIFICATION:

Date of delivery **10-01-2023**

Description **6 polished slabs of 150x150x30 mm**

Commercial name \* **Varpaisjärven Musta / Varpaisjärvi Black Diabas**

Petrographic definition \* **Diabase**

Place of quarrying \* **Hetelammentie 20 Varpaisjärvi N63.423936, E27.882752**

Supplier \* **Loimaan Kivi Oy**

Sampled by \* **Mikko Paljakka (30-11-2022)**

Planes of anisotropy \* **–**

\* Information declared by the petitioner

TEST METHOD: **EN 14157:2017 Natural stone test methods. Determination of the abrasion resistance. Section 3**

Deviations **–**

Specimen preparation **–**

Calibration factor **0,1 mm**

Place of testing **Centro Tecnológico del Mármol**

Dates of testing **31-05-2023 / 02-06-2023**





## TEST REPORT

### Natural stone – Abrasion resistance (Capon method)

REPORT Nº: **232961PN006**

DATE: **07-06-2023**

PAGE: **2/2**

#### RESULTS:

Specimen	13	14	15	16	17	18
Groove lengths (mm)	10,5	11,5	11,0	13,0	10,0	12,5
	10,0	12,0	12,5	13,0	10,0	11,0
Mean value of groove length	12,0 mm					
Standard deviation	1,2 mm					
Higher expected value, $E_H$	15,0 mm					

#### Remarks:

The uncertainties are calculated and at the client's disposal  
The results are expressed to the nearest 0,5 mm  
According to EN 14157, only the biggest grooves of each specimen are considered

#### DISCLAIMER:

The laboratory is not responsible for the sampling or for the information declared by the client. The results refer only to the sample received at the laboratory, on the expressed date.  
This report shall not be reproduced, except in full, without the written consent of the laboratory.

Digitally signed by

Antonio Molina  
Director Técnico

**Natural stone – Frost resistance (technological test)**

REPORT Nº: **232961PN008B** DATE: **07-06-2023**

PAGE: **1/4**

PETITIONER: **Loimaan Kivi Oy**  
**Palininkatu 2. 32200 Loimaa. (Finland)**

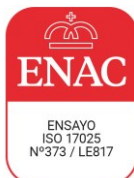
SAMPLE IDENTIFICATION:

Date of delivery **10-01-2023**  
Description **2 sets of 10 specimens of nominal dimensions 300x50x50 mm**  
Commercial name \* **Varpaisjärven Musta / Varpaisjärvi Black Diabas**  
Petrographic definition \* **Diabase**  
Place of quarrying \* **Hetelammentie 20 Varpaisjärvi N63.423936, E27.882752**  
Supplier \* **Loimaan Kivi Oy**  
Sampled by \* **Mikko Paljakka (30-11-2022)**  
Planes of anisotropy \* **Rift identified with two crossed yellow lines**

\* Information declared by the petitioner

TEST METHOD: **EN 12371:2010 Natural stone test methods. Determination of frost resistance. Section 7.3.1**

Deviations **–**  
Specimen preparation **–**  
Conditioning **Drying in oven at 70±5°C to constant mass**  
Load direction **Perpendicular to the rift**  
Place of testing **Centro Tecnológico del Mármol**  
Dates of testing **03-04-2023 / 01-06-2023**



Natural stone – Frost resistance (technological test)

REPORT Nº: **232961PN008B** DATE: **07-06-2023**

PAGE: **2/4**

RESULTS:

Set 1 (not subjected to freeze-thaw cycles)

Specimen	49	50	51	52	53	54	55	56	57	58
Breaking thickness, $h$ (mm)	50,3	50,3	50,1	50,0	50,4	50,1	50,2	50,3	50,1	50,3
Breaking width, $b$ (mm)	50,1	50,2	50,3	50,2	50,2	50,3	50,1	49,9	50,2	50,1
Span, $l$ (mm)	250,0	250,0	250,0	250,0	250,0	250,0	250,0	250,0	250,0	250,0
Load increase (MPa/s)	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25
Breaking load, $F$ (N)	7430	7090	7590	7510	7680	7250	7840	7670	8010	7680
Distance fracture to centre (mm)	14,4	4,1	3,9	8,9	2,4	8,6	8,5	3,6	10,1	8,1
Flexural strength, $R_{tf}$ (MPa)	22,0	20,9	22,6	22,4	22,6	21,6	23,3	22,8	23,9	22,7

Set 2 (subjected to 56 freeze-thaw cycles)

Specimen	19	20	21	22	23	24	25	26	27	28
Breaking thickness, $h$ (mm)	50,3	50,3	50,2	50,3	50,2	50,0	50,0	50,3	50,2	50,2
Breaking width, $b$ (mm)	50,2	50,2	50,0	50,3	50,0	50,1	50,0	50,1	50,2	50,2
Span, $l$ (mm)	250,0	250,0	250,0	250,0	250,0	250,0	250,0	250,0	250,0	250,0
Load increase (MPa/s)	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25
Breaking load, $F$ (N)	6870	6950	6570	6770	7280	7340	7090	7360	7120	7370
Distance fracture to centre (mm)	2,3	5,8	2,4	13,7	7,0	9,0	2,4	8,9	18,5	6,9
Flexural strength, $R_{tf}$ (MPa)	20,4	20,5	19,5	20,0	21,7	22,0	21,2	21,8	21,1	21,8





## TEST REPORT

### Natural stone – Frost resistance (technological test)

REPORT Nº: **232961PN008B** DATE: **07-06-2023**

PAGE: **3/4**

Mean value of flexural strength,  $F_0$

**22,5 MPa**

Standard deviation,  $s$

**0,8 MPa**

Mean value of flexural strength after 56 cycles,  $F_{56}$

**21,0 MPa**

Standard deviation,  $s$

**0,9 MPa**

Decrease of flexural strength after 56 cycles

**7,0 %**

Remarks: The uncertainties are calculated and at the client's disposal

The sample received consisted of 20 undifferentiated specimens. The separation between the two sets of 10 specimens to be tested, was carried out at random by the laboratory

#### DISCLAIMER:

The laboratory is not responsible for the sampling or for the information declared by the client. The results refer only to the sample received at the laboratory, on the expressed date.

This report shall not be reproduced, except in full, without the written consent of the laboratory.

Digitally signed by

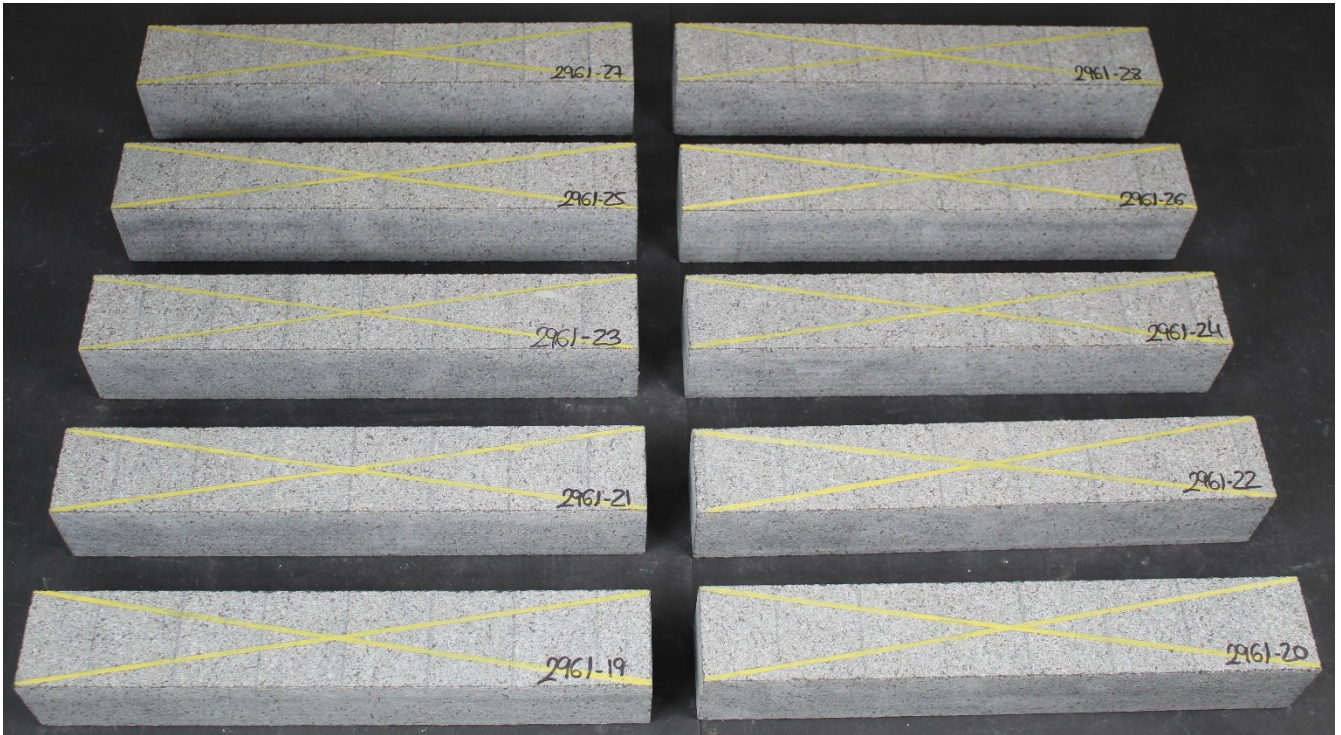
Antonio Molina  
Director Técnico

Natural stone – Frost resistance (technological test)

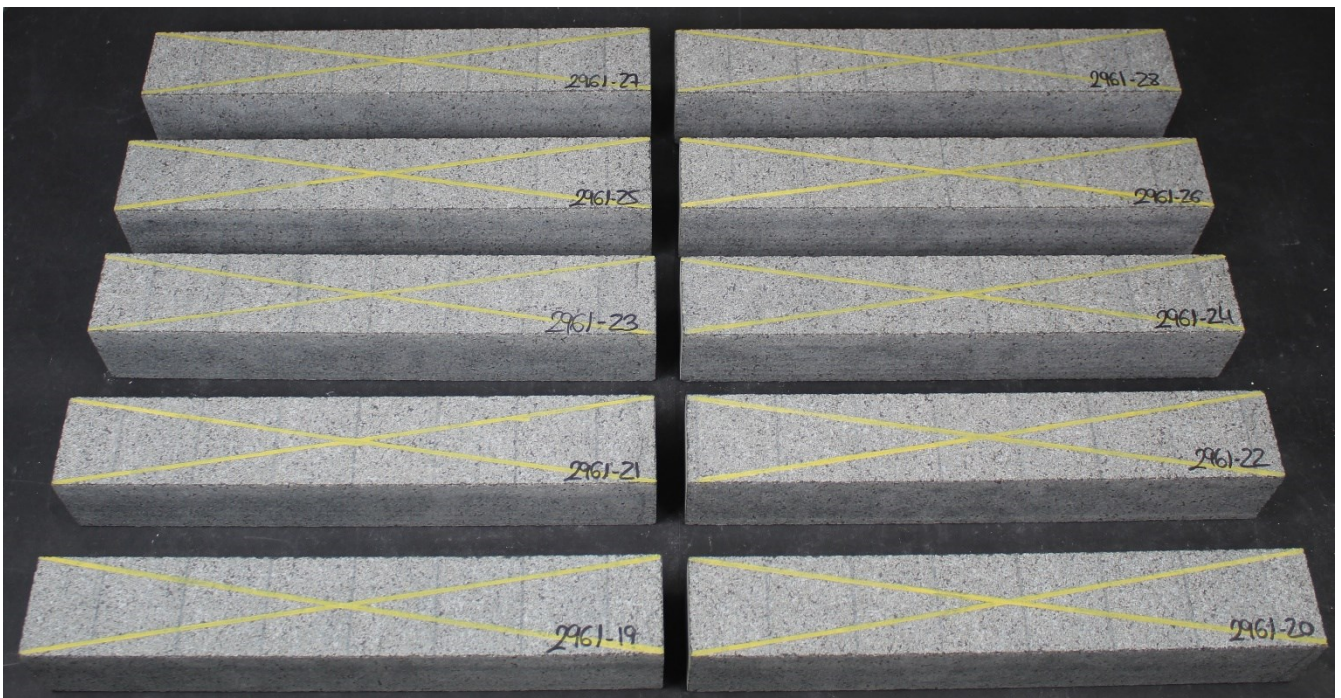
REPORT Nº: 232961PN008B DATE: 07-06-2023

PAGE: 4/4

Set 2 before freeze-thaw cycles



Set 2 after 56 freeze-thaw cycles



## Natural stone – Frost resistance (technological test)

REPORT Nº: **232961PN008D** DATE: **07-06-2023**PAGE: **1/4**PETITIONER: **Loimaan Kivi Oy**  
**Palininkatu 2. 32200 Loimaa. (Finland)**

## SAMPLE IDENTIFICATION:

Date of delivery **10-01-2023**

Description **2 sets of 10 cubic specimens of nominal dimensions 70x70x70 mm**

Commercial name \* **Varpaisjärven Musta / Varpaisjärvi Black Diabas**

Petrographic definition \* **Diabase**

Place of quarrying \* **Hetelammentie 20 Varpaisjärvi N63.423936, E27.882752**

Supplier \* **Loimaan Kivi Oy**

Sampled by \* **Mikko Paljakka (30-11-2022)**

Planes of anisotropy \* **Rift identified with two crossed yellow lines**

\* Information declared by the petitioner

TEST METHOD: **EN 12371:2010 Natural stone test methods. Determination of frost resistance. Section 7.3.1**

Deviations **–**

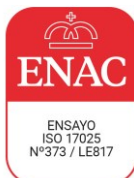
Specimen preparation **–**

Conditioning **Drying in oven at 70±5°C to constant mass**

Load direction **Perpendicular to the rift**

Place of testing **Centro Tecnológico del Mármol**

Dates of testing **03-04-2023 / 31-05-2023**



**Natural stone – Frost resistance (technological test)**

REPORT Nº: **232961PN008D** DATE: **07-06-2023**

PAGE: **2/4**

RESULTS:

Set 1 (not subjected to freeze-thaw cycles)

Specimen	39	40	41	42	43	44	45	46	47	48
Average width of faces, $\bar{l}$ (mm)	71,7	71,4	71,7	71,8	71,6	71,4	71,5	71,5	71,7	71,5
Height, $h$ (mm)	70,4	70,4	70,6	70,5	70,2	70,5	70,5	70,2	70,2	70,6
Breaking load, $F$ (kN)	1800	1800	1840	1680	1840	1830	1650	1680	1920	1650
Compressive strength, $R$ (MPa)	351	353	358	326	360	359	323	327	373	322

Set 2 (subjected to 56 freeze-thaw cycles)

Specimen	29	30	31	32	33	34	35	36	37	38
Average width of faces, $\bar{l}$ (mm)	71,6	71,7	71,6	71,5	71,5	71,5	71,7	70,8	71,9	71,9
Height, $h$ (mm)	71,7	71,8	71,8	71,9	70,5	70,4	70,4	70,4	70,4	70,0
Breaking load, $F$ (kN)	1260	1520	1860	1620	1690	1690	1770	1720	1680	1130
Compressive strength, $R$ (MPa)	245	295	362	317	330	330	345	342	324	219



## TEST REPORT

### Natural stone – Frost resistance (technological test)

REPORT Nº: **232961PN008D** DATE: **07-06-2023**

PAGE: **3/4**

Mean value of compressive strength,  $R_0$

**345 MPa**

Standard deviation,  $s$

**19 MPa**

Mean value of compressive strength after 56 cycles,  $R_{56}$

**311 MPa**

Standard deviation,  $s$

**46 MPa**

Decrease of compressive strength after 56 cycles

**10,0 %**

Remarks: The uncertainties are calculated and at the client's disposal

The sample received consisted of 20 undifferentiated specimens. The separation between the two sets of 10 specimens to be tested, was carried out at random by the laboratory

#### DISCLAIMER:

The laboratory is not responsible for the sampling or for the information declared by the client. The results refer only to the sample received at the laboratory, on the expressed date.

This report shall not be reproduced, except in full, without the written consent of the laboratory.

Digitally signed by

Antonio Molina  
Director Técnico

## Natural stone – Frost resistance (technological test)

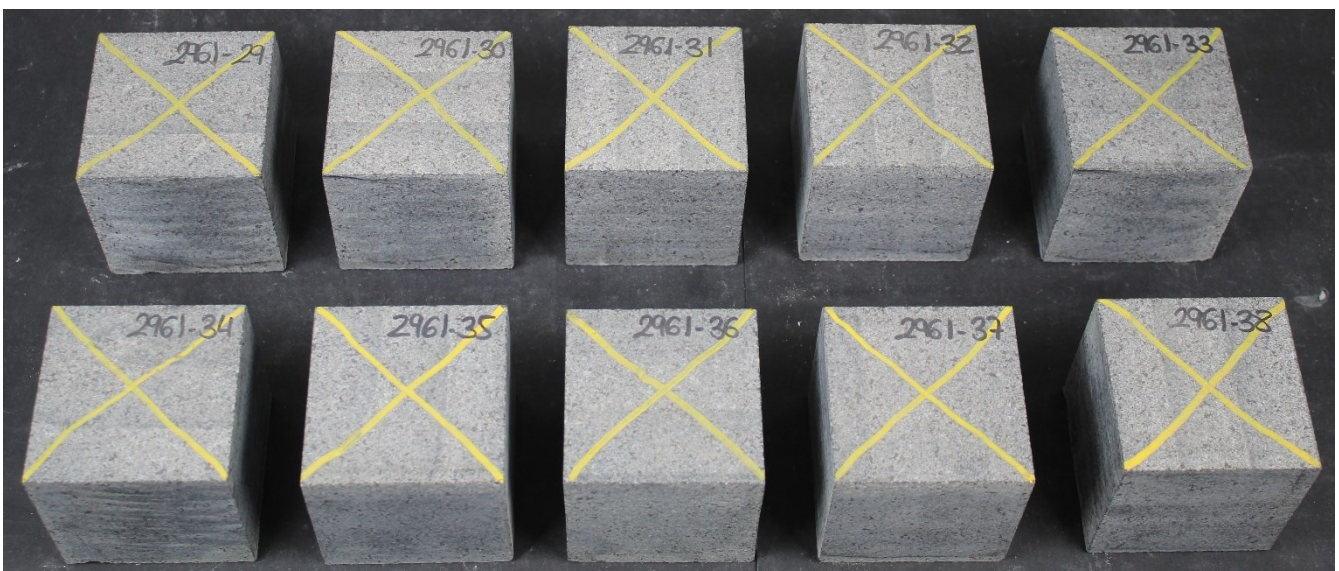
REPORT Nº: 232961PN008D DATE: 07-06-2023

PAGE: 4/4

Set 2 before freeze-thaw cycles



Set 2 after 56 freeze-thaw cycles



Natural stone – Compressive strength

REPORT Nº: **232961PN009A** DATE: **07-06-2023**

PAGE: **1/2**

PETITIONER: **Loimaan Kivi Oy**  
**Palininkatu 2. 32200 Loimaa. (Finland)**

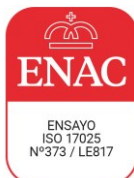
SAMPLE IDENTIFICATION:

Date of delivery **10-01-2023**  
Description **6 cubic specimens of nominal dimensions 70x70x70 mm**  
Commercial name \* **Varpaisjärven Musta / Varpaisjärvi Black Diabas**  
Petrographic definition \* **Diabase**  
Place of quarrying \* **Hetelammentie 20 Varpaisjärvi N63.423936, E27.882752**  
Supplier \* **Loimaan Kivi Oy**  
Sampled by \* **Mikko Paljakka (30-11-2022)**  
Planes of anisotropy \* **Rift identified with two crossed yellow lines**

\* Information declared by the petitioner

TEST METHOD: **EN 1926:2006 Natural stone test methods. Determination of uniaxial compressive strength**

Deviations –  
Specimen preparation –  
Conditioning **Drying in oven at 70±5°C to constant mass**  
Load direction **Perpendicular to the rift**  
Place of testing **Centro Tecnológico del Mármol**  
Dates of testing **24-05-2023 / 31-05-2023**





## TEST REPORT

### Natural stone – Compressive strength

REPORT Nº: **232961PN009A** DATE: **07-06-2023**

PAGE: **2/2**

#### RESULTS:

Specimen	39	40	41	42	43	44	45	46	47	48
Average width of faces, $\bar{l}$ (mm)	71,7	71,4	71,7	71,8	71,6	71,4	71,5	71,5	71,7	71,5
Height, $h$ (mm)	70,4	70,4	70,6	70,5	70,2	70,5	70,5	70,2	70,2	70,6
Breaking load, $F$ (kN)	1800	1800	1840	1680	1840	1830	1650	1680	1920	1650
Compressive strength, $R$ (MPa)	351	353	358	326	360	359	323	327	373	322
Average compressive strength, $\bar{R}$	345 MPa									
Standard deviation, $s$	19 MPa									
Coefficient of variation, $v$	0,05									
Lower expected value, $E$	307 MPa									

Remarks: The uncertainties are calculated and at the client's disposal

#### DISCLAIMER:

The laboratory is not responsible for the sampling or for the information declared by the client. The results refer only to the sample received at the laboratory, on the expressed date.

This report shall not be reproduced, except in full, without the written consent of the laboratory.

Digitally signed by

Antonio Molina  
Director Técnico



**Natural stone – Flexural strength**REPORT Nº: **232961PN010**DATE: **07-06-2023**PAGE: **1/2**

PETITIONER: **Loimaan Kivi Oy**  
**Palininkatu 2. 32200 Loimaa. (Finland)**

## SAMPLE IDENTIFICATION:

Date of delivery **10-01-2023**

Description **10 specimens of nominal dimensions 300x50x50 mm**

Commercial name \* **Varpaisjärven Musta / Varpaisjärvi Black Diabas**

Petrographic definition \* **Diabase**

Place of quarrying \* **Hetelammentie 20 Varpaisjärvi N63.423936, E27.882752**

Supplier \* **Loimaan Kivi Oy**

Sampled by \* **Mikko Paljakka (30-11-2022)**

Planes of anisotropy \* **Rift identified with two crossed yellow lines**

\* Information declared by the petitioner

TEST METHOD: **EN 12372:2022 Natural stone test methods. Determination of flexural strength under concentrated load**

Deviations **–**

Specimen preparation **–**

Conditioning **Drying in oven at 70±5°C to constant mass**

Load direction **Perpendicular to the rift**

Place of testing **Centro Tecnológico del Mármol**

Dates of testing **29-05-2023 / 01-06-2023**





## TEST REPORT

### Natural stone – Flexural strength

REPORT Nº: **232961PN010**

DATE: **07-06-2023**

PAGE: **2/2**

#### RESULTS:

Specimen	49	50	51	52	53	54	55	56	57	58
Breaking thickness, $h$ (mm)	50,3	50,3	50,1	50,0	50,4	50,1	50,2	50,3	50,1	50,3
Breaking width, $b$ (mm)	50,1	50,2	50,3	50,2	50,2	50,3	50,1	49,9	50,2	50,1
Span, $l$ (mm)	250,0	250,0	250,0	250,0	250,0	250,0	250,0	250,0	250,0	250,0
Load increase (MPa/s)	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25
Breaking load, $F$ (N)	7430	7090	7590	7510	7680	7250	7840	7670	8010	7680
Distance fracture to centre (mm)	14,4	4,1	3,9	8,9	2,4	8,6	8,5	3,6	10,1	8,1
Flexural strength, $R_{tf}$ (MPa)	22,0	20,9	22,6	22,4	22,6	21,6	23,3	22,8	23,9	22,7
Average flexural strength, $\bar{R}_{tf}$	22,5 MPa									
Standard deviation, $s$	0,8 MPa									
Lower expected value, $E$	20,8 MPa									

Remarks: The uncertainties are calculated and at the client's disposal

#### DISCLAIMER:

The laboratory is not responsible for the sampling or for the information declared by the client. The results refer only to the sample received at the laboratory, on the expressed date.  
This report shall not be reproduced, except in full, without the written consent of the laboratory.

Digitally signed by

Antonio Molina  
Director Técnico



Natural stone – Breaking load at dowel hole

REPORT Nº: **232961PN012A** DATE: **07-06-2023**

PAGE: **1/2**

PETITIONER: **Loimaan Kivi Oy**  
**Palininkatu 2. 32200 Loimaa. (Finland)**

SAMPLE IDENTIFICATION:

Date of delivery **10-01-2023**

Description **10 slabs of nominal dimensions 200x200x30 mm with sawn surface finish (exposed face)**

Commercial name \* **Varpaisjärven Musta / Varpaisjärvi Black Diabas**

Petrographic definition \* **Diabase**

Place of quarrying \* **Hetelammentie 20 Varpaisjärvi N63.423936, E27.882752**

Supplier \* **Loimaan Kivi Oy**

Sampled by \* **Mikko Paljakka (30-11-2022)**

Planes of anisotropy \* **–**

\* Information declared by the petitioner

TEST METHOD: **EN 13364:2001 Natural stone test methods. Determination of the breaking load at dowel hole**

Deviations **–**

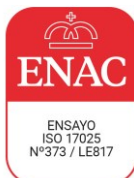
Specimen preparation **–**

Conditioning **Drying in oven at 70±5°C to constant mass**

Load direction **–**

Place of testing **Centro Tecnológico del Mármol**

Dates of testing **24-05-2023 / 31-05-2023**





## TEST REPORT

### Natural stone – Breaking load at dowel hole

REPORT Nº: **232961PN012A** DATE: **07-06-2023**

PAGE: **2/2**

#### RESULTS:

Specimen	59	60	61	62	63	64	65	66	67	68
Thickness, $d$ (mm)	30	30	30	30	30	30	30	30	30	30
Breaking thickness, $d_1$ (mm)	11,1	11,1	10,8	11,2	10,8	10,6	10,7	10,5	10,9	10,5
Breaking load, $F$ (N)	3550	2850	3250	3050	2950	3000	3350	3850	3600	2650
Maximum fracture length, $b_A$ (mm)	39,5	38,6	43,0	37,5	41,8	42,6	41,4	36,1	33,9	34,3
Mean value of breaking load, $\bar{F}$	3200 N									
Standard deviation, $s$	350 N									
Lower expected value, $E$	2501 N									
Mean value of breaking thickness, $\bar{d}_1$	10,8 mm									
Mean value of maximum fracture lengths, $\bar{b}_A$	38,9 mm									

Remarks: The uncertainties are calculated and at the client's disposal  
The results of breaking load and standard deviation are expressed to the nearest 50 N

#### DISCLAIMER:

The laboratory is not responsible for the sampling or for the information declared by the client. The results refer only to the sample received at the laboratory, on the expressed date.

This report shall not be reproduced, except in full, without the written consent of the laboratory.

Digitally signed by

Antonio Molina  
Director Técnico



TEST REPORT

Natural stone – Slip resistance

REPORT Nº: **232961PN020A** DATE: **07-06-2023**

PAGE: **1/2**

PETITIONER: **Loimaan Kivi Oy**  
**Palininkatu 2. 32200 Loimaa. (Finland)**

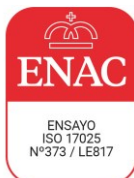
SAMPLE IDENTIFICATION:

Date of delivery **10-01-2023**  
Description **3 slabs of 300x300x50 mm**  
Surface finish \* **Polished**  
Commercial name \* **Varpaisjärven Musta / Varpaisjärvi Black Diabas**  
Petrographic definition \* **Diabase**  
Place of quarrying \* **Hetelammentie 20 Varpaisjärvi N63.423936, E27.882752**  
Supplier \* **Loimaan Kivi Oy**  
Sampled by \* **Mikko Paljakka (30-11-2022)**

\* Information declared by the petitioner

TEST METHOD: **EN 14231:2003 Natural stone test methods. Determination of the slip resistance by means of the pendulum tester**

Deviations **–**  
Specimen preparation **–**  
Slider used **76,2 x 25,4 mm**  
Place of testing **Centro Tecnológico del Mármol**  
Dates of testing **10-05-2023**





## TEST REPORT

### Natural stone – Slip resistance

REPORT Nº: **232961PN020A** DATE: **07-06-2023**

PAGE: **2/2**

#### RESULTS:

Specimen	69.1	69.2	70.3	70.4	71.5	71.6
Individual values of the slip resistance, in dry condition	60	65	54	59	65	65
Individual values of the slip resistance, in wet condition	5	5	5	5	5	5
Average slip resistance, in dry condition (SRV "dry")	61		Uncertainty		± 5	
Average slip resistance, in wet condition (SRV "wet")	5		Uncertainty		± 1	

Remarks: The expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor  $K=2$ , which for a normal distribution provides a level of confidence of about 95%

#### DISCLAIMER:

The laboratory is not responsible for the sampling or for the information declared by the client. The results refer only to the sample received at the laboratory, on the expressed date.

This report shall not be reproduced, except in full, without the written consent of the laboratory.

Digitally signed by

Antonio Molina  
Director Técnico



Centro Tecnológico  
del mármol

PN020JE2201

## TEST REPORT

### Slip resistance (slipperiness)

REPORT Nº: **232961PN020J** DATE: **07-06-2023**

PAGE: **1/2**

PETITIONER: **Loimaan Kivi Oy**  
**Palininkatu 2. 32200 Loimaa. (Finland)**

#### SAMPLE IDENTIFICATION:

Date of delivery **10-01-2023**  
Description **1 natural stone slab of 300x300x50 mm**  
Surface finish \* **Polished**  
Commercial name \* **Varpaisjärven Musta / Varpaisjärvi Black Diabas**  
Petrographic definition \* **Diabase**  
Place of quarrying \* **Hetelammentie 20 Varpaisjärvi N63.423936, E27.882752**  
Supplier \* **Loimaan Kivi Oy**  
Sampled by \* **Mikko Paljakka (30-11-2022)**

\* Information declared by the petitioner

TEST METHOD: **EN 16165:2021 Determination of slip resistance of pedestrian surfaces - Methods of evaluation. Annex C Pendulum test**

Deviations **–**  
Type of slider used **57**  
Place of testing **Centro Tecnológico del Mármol**  
Dates of testing **10-05-2023**



Asociación Empresarial de Investigación Centro  
Tecnológico del Mármol, la Piedra y Materiales  
Ctra. de Murcia s/n. 30430 Cehegín, Murcia, Spain  
Tel.: +34 968 741 500  
<http://www.ctmarmol.es/>  
email: [laboratorio@ctmarmol.es](mailto:laboratorio@ctmarmol.es)



## TEST REPORT

### Slip resistance (slipperiness)

REPORT Nº: **232961PN020J** DATE: **07-06-2023**

PAGE: **2/2**

#### RESULTS:

Test conditions	Dry	Wet
Slipperiness measured towards 0°	60	5
Slipperiness measured towards 90°	65	5
Slipperiness measured towards 45°	64	5
Value of the slipperiness, <i>PTV</i>	60	5
Uncertainty	± 1	± 1

Remarks: The expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor  $K=2$ , which for a normal distribution provides a level of confidence of about 95%

#### DISCLAIMER:

The laboratory is not responsible for the sampling or for the information declared by the client. The results refer only to the sample received at the laboratory, on the expressed date.

This report shall not be reproduced, except in full, without the written consent of the laboratory.

Digitally signed by

Antonio Molina  
Director Técnico