

Test Report n. 23RP01680 del 16/06/2023

Customer: **TIBOLDO GRANITI SRL, LOCALITA' CASE BISDONIO – 10085 PONT CANAVESE (TO)**

Sampling date: **undeclared**
 Sampling place: **customer establishment**

Date of receipt: **02/05/2023**
 Sampling done by: **customer**
 Picked up/delivered from: **customer**

Date of acceptance: **03/05/2023**
 Test date: **from 05/05/2023 to 16/06/2023**

Object: **Tests for CE marking according to:
 EN 1469 - Natural stone slabs used as cladding for interior and exterior wall finishes
 EN 12058 - Natural stone slabs used for internal and external flooring and stairs**

Note: the italian version of the present test report exist

Sample	Customer ID	Sample description
23DM11025	GNEISS - GRANITE #	SLABS AND CUBES OF NATURAL STONE

**DM 06/09/1994 GU n. 288 10/12/1994 All. 1 Met. B (PROP07-E1R0)
 Verification of the presence or absence of asbestos in samples of massive material using ESEM/EDS §**

Reference	Parameters	Unit of measure	Result
23DM11025	Asbestos detected	presence/absence	absent

(UNI EN 13755 :2008) Determination of water absorption at atmospheric pressure
TEST DATA:

Surface finish of the samples:	saw surface
Number of samples:	6
Sample conditioning:	In a ventilated oven at 70 ± 5 °C up to constant mass

TEST RESULTS:

Sample n°	Sample size [mm]			Absorption A_b [%]
	L	b	h	
23DM11025/01	50.9	50.5	50.4	0.2
23DM11025/02	50.9	50.4	50.3	0.2
23DM11025/03	50.5	50.3	50.7	0.2
23DM11025/04	50.9	50.3	50.4	0.3
23DM11025/05	50.9	50.5	50.5	0.2
23DM11025/06	50.9	50.4	50.5	0.2
Average value				0.2
Measurement uncertainty				$\pm 0,1$

NOTE: measurement uncertainty reported in extended form with $k = 2.57$ corresponding to a confidence level of 95%

Test Report n. **23RP01680** del **16/06/2023**
(UNI EN 1936:2007) Determination of the apparent density and open porosity

Surface finish of the samples:	Saw surface #
Number of samples:	6
Sample conditioning:	In a ventilated oven at 70 ± 5 °C up to constant mass

Sample n°	Sample dimensions [mm]			Apparent density ρ_b [kg/m ³]	Open porosity p_o [%]
	L	b	h		
23DM11025/01	50.9	50.5	50.4	2730	0.6
23DM11025/02	50.9	50.4	50.3	2740	0.6
23DM11025/03	50.5	50.3	50.7	2760	0.6
23DM11025/04	50.9	50.3	50.4	2700	0.7
23DM11025/05	50.9	50.5	50.5	2730	0.6
23DM11025/06	50.9	50.4	50.5	2740	0.6
Average value				2730	0.6

UNI EN 14157 :2017) Determination of resistance to abrasion

Direction of footprint relative to the planes of anisotropy:	Orthogonal to the surface of use
Surface finish of the samples:	not declared
Samples number:	6
Samples dimensions [mm]:	180x90x30mm
Conditioning of Samples:	In a ventilated oven at 70 ± 5 °C up to constant mass
Test method:	Method A
Calibration value1 [mm]:	+0.4

Sample n°	Furrow width [mm]	Correct furrow width [mm] ¹
23DM11025/07	18.2	18.5
23DM11025/08	17.0	17.5
23DM11025/09	17.2	17.5
23DM11025/10	17.7	18.0
23DM11025/11	17.4	18.0
23DM11025/12	18.1	18.5
Average value		18.0
Measurement uncertainty		± 1.0
Maximum expected value		19.1

NOTE: measurement uncertainty reported in extended form with k = 2.57 corresponding to a confidence level of 95%

Test Report n. **23RP01680** del **16/06/2023**
(UNI EN 12372:2022) Flexural strength under concentrated load

- Load application speed:	0.24 MPa/s
- Surface finish:	saw surface
- Load application direction:	orthogonal to the usage surface

Sample	Size (mm)				Breaking load (N)	Type of break (1)	Flexural strength (MPa)
	n.	Total length L	Support distance l	b			
23DM11025/13	180.1	148.0	90.5	29.0	4907		14.3
23DM11025/14	180.2	148.0	90.7	28.6	5365		16.1
23DM11025/15	180.2	148.0	90.2	30.6	6319		16.6
23DM11025/16	180.1	148.0	90.4	30.3	4835		12.9
23DM11025/17	180.0	148.0	90.6	28.8	3372	1	10.0
23DM11025/18	179.5	148.0	90.7	30.4	6308		16.7
23DM11025/19	180.1	148.0	90.5	28.8	4225	1	12.5
23DM11025/20	179.6	148.0	90.8	29.3	5316		15.1
23DM11025/21	181.0	148.0	90.4	30.6	5895		15.5
23DM11025/22	180.1	148.0	90.4	29.8	5832		16.1
Average Flexural Strength (MPa):							14.6 ± 1.3

number of specimens:	10
Mean Flexural Strength (MPa)	14.6 ± 1.3
standard deviation (MPa)	2.2
Coefficient of variation	0.1
Logarithmic mean	2.67
log standard deviation (MPa)	0.16
Minimum value (MPa)	10.0
Maximum value (MPa)	16.7
Minimum expected value (MPa)	10.2
KS quantile factor	2.10

NOTE:

1) The fracture occurred at more than 15% of the distance between the support cylinders and the centerline

Test Report n. **23RP01680** del **16/06/2023**

(UNI EN 12371 :2010) Determination of frost resistance *
by modifying the flexural strength under concentrated load (UNI EN 12372:2022)

TEST DATA:

Sample number:	10
Test type:	Identification
Number of freeze/thaw cycles:	56
Surface finish of the samples:	saw surface
Conditioning of specimens:	In a ventilated oven at 70 ± 5 °C up to constant mass
Load application speed [MPa/s]:	0.25 MPa/s
Load axis orientation:	orthogonal to the usage surface

TEST RESULTS:

VISUAL INSPECTION AT THE END OF THE FREEZE/THAW CYCLES		
Samples n°	Freeze/thaw behaviour	Legend (see paragraph 7.3.2.1 of UNI EN 12371:2010)
23DM11025/23	0	0: specimen intact
23DM11025/24	0	1: minor damage (minor rounding of corners and edges) that do not compromise the integrity of the specimen
23DM11025/25	0	
23DM11025/26	0	2: one or several minor cracks (≤ 0.1 mm wide) or detachment of small fragments (≤ 30 mm ² per fragment)
23DM11025/27	0	
23DM11025/28	0	3: one or several cracks, holes or detachments of fragments greater than those defined in point "2" of the scale, or alterations of the material in the veins, or the specimen shows significant signs of crumbling or decay
23DM11025/29	0	
23DM11025/30	0	
23DM11025/31	0	4: specimen with major cracks or broken into two or more pieces or disintegrated
23DM11025/32	0	

Test Report n. **23RP01680** del **16/06/2023**

SAMPLE	SIZE (mm)				Breaking load (N)	type of break (1)	Flexural strength (MPa)
	n.	Total length L	Support distance l	b			
23DM11025/23	180.1	147.0	90.4	28.8	4866		14.3
23DM11025/24	180.2	147.0	90.3	29.1	3929	1	11.4
23DM11025/25	180.3	147.0	91.1	30.1	4944		13.2
23DM11025/26	180.1	147.0	90.2	28.9	5482		16.1
23DM11025/27	179.9	147.0	90.2	29.5	5424		15.3
23DM11025/28	179.7	147.0	90.5	29.7	4564		12.6
23DM11025/29	180.2	147.0	90.4	30.3	4989		13.3
23DM11025/30	179.5	147.0	90.6	30.3	4877		13.0
23DM11025/31	180.5	147.0	90.8	28.6	4497		13.4
23DM11025/32	180.6	147.0	90.5	29.4	4136	1	11.7
Average Flexural Strength (MPa):							13.4 ± 0.7

number of specimens:	10
Mean Flexural Strength (MPa)	13.4 ± 0.7
Change in average flexural strength R _{tf} following freeze-thaw cycles (%)	-8.1
standard deviation (MPa)	1.5
Coefficient of variation	0.1
Logarithmic mean	2.59
log standard deviation (MPa)	0.11
Minimum value (MPa)	11.4
Maximum value (MPa)	16.1
Minimum expected value (MPa)	10.6
KS quantile factor	2.10

NOTE:

1) The fracture occurred at more than 15% of the distance between the support cylinders and the centerline

 2) measurement uncertainty reported in extended form with $k = 2.57$ corresponding to a confidence level of 95%

Test Report n. **23RP01680** del **16/06/2023**

**(UNI EN 14066 :2010) Determination of resistance to accelerated aging by thermal shock *
by modifying the flexural strength under concentrated load (UNI EN 12372:2022)**

TEST DATA:

Sample number:	10
Test type:	Identification
Number of thermal shock cycles:	20
Surface finish of the sample:	Saw surface
Conditioning of specimens:	In a ventilated oven at 70 ± 5 °C up to constant mass
Load application speed [MPa/s]:	0.25 MPa/s
Load axis orientation:	orthogonal to the usage surface

Sample n°	Specimen size [mm]			Open porosity before thermal shock p0 (%)	Open porosity after thermal shock pf (%)	Open porosity variation Δp (%)
	L	b	h			
23DM11025/33	180.3	90.4	28.7	0.6	0.7	18.5
23DM11025/34	180.6	90.6	29.1	0.6	0.7	18.6
23DM11025/35	180.7	91.1	30.1	0.6	0.7	16.4
23DM11025/36	181.1	90.3	28.7	0.6	0.8	26.7
23DM11025/37	181.1	90.6	29.5	0.6	0.7	19.3
23DM11025/38	181.5	90.3	30.0	0.6	0.7	9.3
23DM11025/39	180.5	90.7	29.8	0.6	0.7	15.7
23DM11025/40	180.4	90.6	29.8	0.6	0.9	44.7
23DM11025/41	179.8	90.6	29.1	0.6	0.7	24.8
23DM11025/42	181.7	90.5	28.9	0.6	0.7	16.5
Average value				0.6	0.7	21.1

Test Report n. **23RP01680** del **16/06/2023**

SAMPLE	Size (mm)				Breaking load (N)	type of breakage (1)	Flexural strength (MPa)
	n.	Total length L	Support distance l	b			
23DM11025/33	180.3	147.0	90.4	28.7	3830	1	11.3
23DM11025/34	180.6	147.0	90.6	29.1	5140		14.8
23DM11025/35	180.7	147.0	91.1	30.1	3970	1	10.6
23DM11025/36	181.1	147.0	90.3	28.7	5890		17.4
23DM11025/37	181.1	147.0	90.6	29.5	5900		16.5
23DM11025/38	181.5	147.0	90.3	30.0	5190		14.1
23DM11025/39	180.5	147.0	90.7	29.8	4280		11.7
23DM11025/40	180.4	147.0	90.6	29.8	5140		14.1
23DM11025/41	179.8	147.0	90.6	29.1	5930		17.0
23DM11025/42	181.7	147.0	90.5	28.9	6110		17.8
Average Flexural Strength (MPa):							14.5 ± 1.2

number of specimens:	10
Mean Flexural Strength (MPa)	14.5 ± 1.2
Change in average flexural strength R _{tf} following freeze-thaw cycles (%)	-0.5
standard deviation (MPa)	2.70
Coefficient of variation	0.2
Logarithmic mean	2.66
log standard deviation (MPa)	0.19
Minimum value (MPa)	10.6
Maximum value (MPa)	17.8
Minimum expected value (MPa)	9.6
KS quantile factor	2.10

NOTE:

1) The fracture occurred at more than 15% of the distance between the support cylinders and the centerline

2) measurement uncertainty reported in extended form with k = 2.57 corresponding to a confidence level of 95%

Test Report n. **23RP01680** del **16/06/2023**
(UNI EN 1926 :2007) Determination of uniaxial compressive strenght
DATI DI PROVA:

Number of specimen:	10
Surface finish:	Sawn
Sample conditioning:	In a ventilated owen at 70 ± 5 °C up to constant mass
Load application speed [MPa/s]:	1.0 MPa/s
Load axis orientation:	orthogonal to the usage surface

Specimen	Dimensions (mm)		Surface (mm ²)	Breaking load (kN)	Compressive strenght (MPa)	
	n.	l _M				h _M
23DM11025/43		50.4	51	2540	353	139.0
23DM11025/44		50.3	51	2530	391	154.7
23DM11025/45		50.4	51	2540	339	133.5
23DM11025/46		50.5	50	2550	357	140.1
23DM11025/47		50.4	51	2540	319	125.8
23DM11025/48		50.6	50	2560	335	130.9
23DM11025/49		50.5	51	2550	403	157.9
23DM11025/50		50.6	50	2560	331	129.3
23DM11025/51		50.3	51	2530	334	131.8
23DM11025/52		50.4	50	2540	391	154.1
Average compressive strength (MPa):					140 ± 11 MPa	

number of specimens:	10
mean value (MPa)	140 ± 11 MPa
standard deviation	12 MPa
coefficient of variation	0.09

Note: measurement uncertainty reported in extended form with k = 2.57 corresponding to a confidence level of 95%

Geotechnical Department – The Director

Dr. Geol. Massimo Bonato


Disclaimer:

Document signed with digital signature D lgs n. 82 del 7 marzo 2005 e s.m.i.

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 >> Extended Uncertainty U, K factor = 2 (confidence level of 95 %) unless otherwise indicated - § test carried out by an external laboratory qualified in accordance with PG010 - N.A. not applicable. Sample storage time: the samples are kept in the laboratory 30 days after the issue of the test report (except for the products available that are eliminated at the end of the analysis or at expiry). For storage longer than a month, a specific request must be made. Record keeping time: the laboratory keeps a copy of the test reports for a period of 4 years and a copy of the records relating to the analyzes for 4 years, except for special customer requests; all documents relating to the tests for product homologation are kept for 10 years. Unless otherwise specified, any conformity / non-conformity judgments reported refer to the analyzed parameters and are based on the comparison of the value with the reference values without considering the confidence interval of the measurement.

Information provided by the customer. If both the description of the sample and the sampling are attributable to the customer, all the other data associated with the sampling are also provided by him. **If the sampling is not carried out by the laboratory, the results obtained are considered to refer to the sample as received and the laboratory declines its responsibility for the results calculated considering the sampling data provided by the Customer.**

* Test not accredited by ACCREDIA

Test report 23RP01680 end



Tiboldo Graniti S.R.L.
Località Case Bisdonio snc - 10085 Pont Canavede (TO)

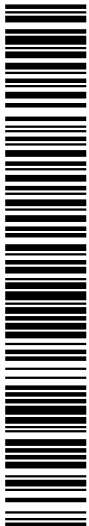
CLASSIFICAZIONE DI REAZIONE AL FUOCO IN ACCORDO ALLA NORMA EN 13501-1:2018

Classification of reaction to fire in accordance with EN 13501-1:2018

Il presente rapporto di classificazione definisce la classificazione assegnata al prodotto denominato GNEISS GRANITO, in conformità ai procedimenti riportati nella norma EN 13501-1:2018

This classification report defines the classification assigned to the named product GNEISS GRANITO, in accordance with the procedures indicated in EN 13501-1:2018

- Numero di rapporto di classificazione:** N2999/23
- Classification report number:
- Nome o modello del prodotto ⁽¹⁾:** GNEISS GRANITO
- Product name or model ⁽¹⁾:
- Data di emissione:** 2023-07-11
- Date of issue:



ROT303520230N2999_23

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DETTAGLI DEL PRODOTTO CLASSIFICATO

Details of the classified product

- Descrizione del prodotto:

- Product description:

Il prodotto GNEISS GRANITO, è definito come pietra naturale granito e la sua classificazione è valida solo per le seguenti modalità di impiego:

The product GNEISS GRANITO, is defined as Granite natural stone and its classification is valid only for the following methods of use:

- rivestimento

- coating

Il prodotto GNEISS GRANITO, è descritto in modo dettagliato nei rapporti di prova a sostegno di questa classificazione e che sono indicati nella terza pagina di questo rapporto di classificazione

The product GNEISS GRANITO, is described in detail in the test reports to support this classification and is indicated on the third page of this classification report

NORME DI RIFERIMENTO

Standard reference

EN 13501-1:2018 - Classificazione al fuoco dei prodotti e degli elementi da costruzione - Parte 1:
Classificazione in base ai risultati delle prove di reazione al fuoco

EN 13501-1:2018 - Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

EN ISO 1182:2020 - Prove di reazione al fuoco dei prodotti - Prova di non combustibilità

EN ISO 1182:2020 - Reaction to fire tests for products - Non-combustibility test

EN ISO 1716:2018 - Prove di reazione al fuoco dei prodotti - Determinazione del potere calorifico superiore

EN ISO 1716:2018 - Reaction to fire tests for products -- Determination of the gross heat of combustion (calorific value)

REGOLA DECISIONALE

Decision rule

La classificazione del campione è ottenuta dalla semplice accettazione dei dati ricavati dai test di laboratorio, escludendo i valori di incertezza di misura associata.

The classification of the sample is obtained by simply accepting the data obtained from the laboratory tests, excluding the associated measurement uncertainty values.



RAPPORTO DI PROVA E RISULTATI DEI TEST

Test report and test results

Nome del laboratorio <i>name of laboratory</i>	Nome del committente <i>name of sponsor</i>	N° rapporto di prova <i>test report n°</i>	Metodo test <i>test method</i>
t ² i - trasferimento tecnologico e innovazione s.c.a r.l.	Tiboldo Graniti S.R.L.	N2999/23	EN ISO 1182:2020
t ² i - trasferimento tecnologico e innovazione s.c.a r.l.	Tiboldo Graniti S.R.L.	N3000/23	EN ISO 1716:2018

Metodo di prova <i>test method</i>	Parametro <i>parameter</i>	Numero prove <i>Number of tests</i>	Risultati / <i>results</i>	
			Parametri continui / media <i>continuous parameter/average</i>	Conformità <i>compliance</i>
EN ISO 1182	ΔT	5	0,9	(-)
	Δm	5	0,2	(-)
	t_f	5	0,0	No
EN ISO 1716	PCS (MJ/Kg)	3	-0,10	(-)

* FDP: gocce o particelle accese / flaming droplet particles



CLASSIFICAZIONE

Classification

Questa classificazione è stata eseguita in accordo con la norma EN 13501-1:2018
This classification was performed in accordance with the EN 13501-1:2018 standard

- Classificazione:

- Classification:

Il prodotto GNEISS GRANITO, in relazione al suo comportamento alla reazione al fuoco è classificato
The product GNEISS GRANITO, in relation to its reaction to fire reaction is classified

A1 / A1_{fl}

Comportamento al Fuoco

Fire behaviour

A1 / A1_{fl}

CLASSIFICAZIONE DI REAZIONE AL FUOCO: A1 / A1_{fl}

Reaction to fire classification: A1 / A1_{fl}

CAMPO DI APPLICAZIONE

Field of application



LIMITAZIONI

Limitations

Il presente documento di classificazione non rappresenta un'approvazione di tipo o una certificazione di prodotto

This classification document does not represent a type approval or product certification

La classificazione assegnata al prodotto nel presente rapporto è appropriata per una dichiarazione di conformità del fabbricante nel contesto del sistema 3 di AVCP e della marcatura CE ai sensi del Regolamento 305/2011/UE del Parlamento Europeo e del Consiglio del 9 marzo 2011 che fissa le condizioni armonizzate per la commercializzazione dei prodotti da costruzione.

The classification assigned to the product in this report is appropriate to a declaration of conformity by the manufacturer within the context of system 3 of AVCP and CE marking under the Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products.

Il fabbricante ha rilasciato una dichiarazione documentata. Essa conferma che la progettazione dei prodotti non richiede processi, procedure o stadi specifici (per esempio nessuna aggiunta di ritardanti di fiamma, limitazione di contenuto organico o aggiunta di riempitivi) intesi a migliorare il comportamento al fuoco per ottenere la classificazione raggiunta. Di conseguenza, il fabbricante ha concluso che l'attestazione secondo il sistema 3 è appropriata.

The manufacturer has made a declaration, which is held on file. This confirms that the products design requires no specific processes, procedures or stages (e.g. no addition of flame-retardants, limitation of organic content, or addition of fillers) that are aimed at enhancing the fire performance in order to obtain the classification achieved. As a consequence the manufacturer has concluded that system 3 attestation is appropriate.

Il laboratorio di prova non ha pertanto partecipato al campionamento del prodotto per la prova sebbene sia in possesso di appropriati riferimenti, forniti dal fabbricante, per garantire la tracciabilità dei campioni sottoposti a prova.

The test laboratory has, therefore, played no part in sampling the product for the test, although it holds appropriate references, supplied by manufacturer, to provide for traceability of the samples tested.

PREPARATO DA:	RIVISTO DA:
<i>prepared by</i>	<i>revised by:</i>
Tecnico di Laboratorio	Direttore Tecnico
<i>Laboratory technician</i>	<i>Technical Director</i>
(ONGARO Tomas)	(CIBIN Alessandro)



- cliente:
- customer: **Tiboldo Graniti S.R.L.**
Località Case Bisdonio snc - 10085 Pont Canavede (TO)

- rapporto di prova n°:
- test report n°: **N2999/23**

- emesso in data:
- date issue: **2023-07-11**

- nome commerciale ⁽¹⁾:
- commercial name ⁽¹⁾: **GNEISS GRANITO**

- produttore ⁽¹⁾:
- manufacturer ⁽¹⁾: **Tiboldo Graniti S.R.L.**
Località Case Bisdonio snc - 10085 Pont Canavede (TO)

- campionamento eseguito da ⁽¹⁾:
- sampling performed by ⁽¹⁾: **Tiboldo Graniti S.R.L.**
Località Case Bisdonio snc - 10085 Pont Canavede (TO)

- luogo di esecuzione delle prove:
- place of test: **t2i - trasferimento tecnologico e innovazione s.c.a r.l.**
via Pezza Alta, 34 - 31046 Rustignè di Oderzo (TV)

Direttore Tecnico
Technical Director
Alessandro Cibir

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Rapporto di prova n° N2999/23

Test report n° N2999/23

- codice CERT: - CERT code:	N2369/23
- data di arrivo: - date of arrival:	2023-06-05
- riferimenti normativi: - normative reference	la prova è stata eseguita secondo quanto previsto dalla norma EN ISO 1182:2020 "Prove di reazione al fuoco dei prodotti - Prova di non combustibilità " <i>the test was performed in accordance with the the standard EN ISO 1182:2020 "Reaction to fire tests for products - Non-combustibility test"</i>
- deviazioni dal metodo di test: - deviation from the test method	No No
- condizionamento: - conditioning	i campioni sono stati condizionati ad una temperatura di (23 ± 2) °C ed al (50 ± 5) % di umidità relativa per 32 giorni, come previsto dalla EN 13238:2010 <i>the samples were conditioned at a temperature of (23 ± 2) ° C and at (50 ± 5)% relative humidity for 32 days, as required by EN 13238:2010</i>
- procedura di prova: - test procedure:	PPD.FUO.905
- apparecchiature: - equipment:	Non combustibility furnace TT.3994
- tecnico che ha eseguito la prova: - technician who performed the test:	Tomas Ongaro
- data delle prove: - test date:	dal 2023-07-07 al 2023-07-11 <i>from 2023-07-07 to 2023-07-11</i>



Rapporto di prova n° N2999/23

Test report n° N2999/23

- descrizione del campione ⁽¹⁾:
- *description of sample* ⁽¹⁾:

Pietra naturale granito, densità 3000 kg/m³

Granite natural stone, density 3000 kg/m³



Rapporto di prova n° N2999/23

Test report n° N2999/23

- componente ⁽¹⁾ :	FASSA SOL 3
- component ⁽¹⁾ :	FASSA SOL 3
- spessore ⁽¹⁾ :	50 mm
- thickness ⁽¹⁾ :	
- densità ⁽¹⁾ :	3000 kg/m ³
- density ⁽¹⁾ :	

- Risultati:

- results

Campione n°	Aumento massimo della temperatura della fornace (°C)		Perdita di massa (%)		Durata prolungata di fiamma (s)	
	test specimen n°	max. temperature rise furnace (°C)	mass loss (%)		duration of sustained flaming (S)	
1	0,7	± 2,28	0,2	± 0,04	0	± 0
2	0,6	± 2,23	0,2	± 0,05	0	± 0
3	1	± 2,44	0,2	± 0,05	0	± 0
4	0,6	± 2,23	0,3	± 0,06	0	± 0
5	1,4	± 2,65	0,2	± 0,05	0	± 0

I risultati di prova indicano il comportamento del materiale sottoposto a condizioni specifiche di prova; non sono da intendersi come l'unico criterio per la valutazione del potenziale rischio di contributo all'incendio del prodotto nelle condizioni di utilizzo. Salvo diversamente indicato le incertezze (U) sono espresse come incertezze estese con un fattore di copertura k=2 (livello di fiducia pari al 95%)

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use. Unless otherwise indicated, the uncertainties (U) are expressed as extended uncertainties with a coverage factor k = 2 (95% confidence level)



Rapporto di prova n° N2999/23

Test report n° N2999/23

Risultati di calibrazione in accordo alla EN ISO 1182:2020

calibration results according to EN ISO 1182:2020

- calibrazione della temperatura della parete del forno in accordo al punto 7.3.1 della EN ISO 1182:2020
- calibration of furnace wall temperature according to EN ISO 1182:2020 part 7.3.1

La deviazione media della temperatura sui tre assi verticali rispetto alla temperatura media della parete del forno $T_{avg.dev.axis}$ deve essere inferiore allo 0,5%

The average deviation of the temperature on the three vertical axes from the average furnace wall temperature $T_{avg.dev.axis}$ shall be less than 0.5 %.

Risultato della calibrazione	0,04 %
Calibration results	

La deviazione media della temperatura sui tre livelli rispetto alla temperatura media della parete del forno $T_{avg.dev.level}$ deve essere inferiore all'1,5%.

The average deviation of the temperature on the three levels from the average furnace wall temperature $T_{avg.dev.level}$ shall be less than 1.5 %.

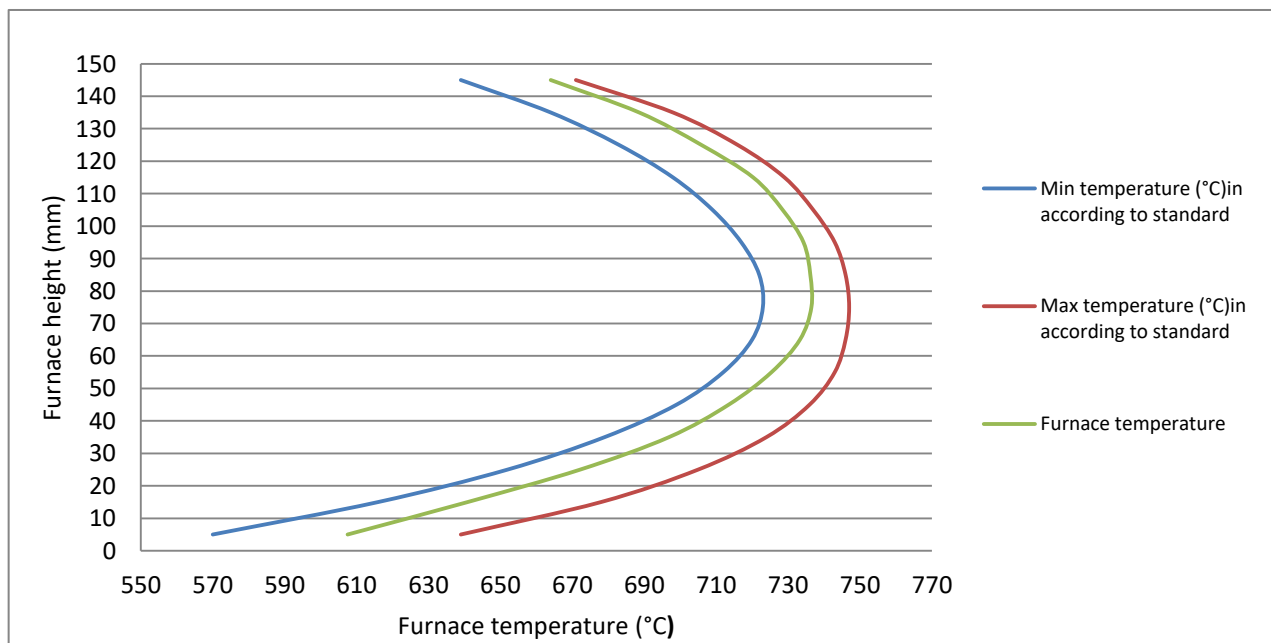
Risultato della calibrazione	0,52 %
Calibration results	

La temperatura media della parete $T_{avg.level a}$ deve essere inferiore alla temperatura media della parete $T_{avg.level c}$

The average wall temperature $T_{avg.level a}$ shall be less than the average wall temperature $T_{avg.level c}$

$T_{avg.level a}$	793,00 °C	$T_{avg.level c}$	805,00 °C
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- calibrazione della temperatura della parete del forno in accordo al punto 7.3.2 della EN ISO 1182:2020
- calibration of furnace wall temperature according to EN ISO 1182:2020 part 7.3.2





- cliente:
- customer: **Tiboldo Graniti S.R.L.**
Località Case Bisdonio snc - 10085 Pont Canavede (TO)

- rapporto di prova n°:
- test report n°: **N3000/23**

- emesso in data:
- date issue: **2023-07-11**

- nome commerciale ⁽¹⁾:
- commercial name ⁽¹⁾: **GNEISS GRANITO**

- produttore ⁽¹⁾:
- manufacturer ⁽¹⁾: **Tiboldo Graniti S.R.L.**
Località Case Bisdonio snc - 10085 Pont Canavede (TO)

- campionamento eseguito da ⁽¹⁾:
- sampling performed by ⁽¹⁾: **Tiboldo Graniti S.R.L.**
Località Case Bisdonio snc - 10085 Pont Canavede (TO)

- luogo di esecuzione delle prove:
- place of test: **t2i - trasferimento tecnologico e innovazione s.c.a r.l.**
via Pezza Alta, 34 - 31046 Rustignè di Oderzo (TV)

Direttore Tecnico
Technical Director
Alessandro Cibirin

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Rapporto di prova n° N3000/23

Test report n° N3000/23

- codice CERT: N2369/23
- CERT code:

- data di arrivo: 2023-06-05
- date of arrival:

- riferimenti normativi: la prova è stata eseguita secondo quanto previsto dalla norma EN ISO 1716:2018 "Prove di reazione al fuoco dei prodotti - Determinazione del potere calorifico superiore"
- normative reference

the test was performed in accordance with the the standard EN ISO 1716:2018 "Reaction to fire tests for products - Determination of the goss heat of combustion (calorific value)"

- deviazioni dal metodo di test: No
- deviation from the test method

- condizionamento: i campioni sono stati condizionati ad una temperatura di (23 ± 2) °C ed al (50 ± 5) % di umidità relativa per 30 giorni, come previsto dalla EN 13238:2010
- conditioning

the samples were conditioned at a temperature of (23 ± 2) °C and at (50 ± 5) % relative humidity for 30 days, as required by EN 13238: 2010

- procedura di prova: PPD.FUO.923
- test procedure:

- apparecchiature: Bomba calorimetrica TT. 4007
- equipment:

- tecnico che ha eseguito la prova: Tomas Ongaro
- technician who performed the test:

- data delle prove: dal 2023-07-05 al 2023-07-05
- test date: from 2023-07-05 to 2023-07-05

- equivalente in acqua E 10118,64 MJ/K
- the water equivalent E



Rapporto di prova n° N3000/23

Test report n° N3000/23

- descrizione del campione ⁽¹⁾:
- *description of sample* ⁽¹⁾:

Pietra naturale granito, densità 3000 kg/m³

Granite natural stone, density 3000 kg/m³

- tipologia di prodotto:

prodotto omogeneo



Rapporto di prova n° N3000/23

Test report n° N3000/23

- componente ⁽¹⁾: GNEISS GRANITO
- component ⁽¹⁾: GNEISS GRANITO
- tipo di componente: prodotto omogeneo
- type of component: homogeneous product
- spessore ⁽¹⁾: 50 mm
- thickness ⁽¹⁾: 50 mm
- massa volumica ⁽¹⁾: 3000 kg/m³
- density ⁽¹⁾: 3000 kg/m³

- Risultati:

- results

Campione <i>sample</i>	Potere Calorifico Superiore <i>gross calorific value</i>			
	(MJ/Kg)	U	(MJ/Km ²)	U
1	-0,07	± 0,18	---	---
2	-0,13	± 0,17	---	---
3	-0,10	± 0,17	---	---

I risultati di prova indicano il comportamento del materiale sottoposto a condizioni specifiche di prova; non sono da intendersi come l'unico criterio per la valutazione del potenziale rischio di contributo all'incendio del prodotto nelle condizioni di utilizzo. Salvo diversamente indicato le incertezze (U) sono espresse come incertezze estese con un fattore di copertura k=2 (livello di fiducia pari al 95%)

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use. Unless otherwise indicated, the uncertainties (U) are expressed as extended uncertainties with a coverage factor k = 2 (95% confidence level)

Test report n. **23RP01681** date **19/06/2023**

Customer: **TIBOLDO GRANITI SRL, LOCALITA' CASE BISDONIO – 10085 PONT CANAVESE (TO)**

Sampling date: **undeclared**
Sampling place: **customer establishment**

Date of receipt: **02/05/2023**
Sampling done by: **customer**
Picked up/delivered from: **customer**

Date of acceptance: **03/05/2023**
Test date: **from 05/05/2023 to 16/06/2023**

Object: Tests for CE marking according to:
EN 1469 - Natural stone slabs used as cladding for interior and exterior wall finishes
EN 12058 - Natural stone slabs used for internal and external flooring and stairs

Note: the italian version of the present test report exist

Sample	Customer ID	Sample description
23DM11025	GNEISS - GRANITE #	SLABS AND CUBES OF NATURAL STONE

Test report n. **23RP01681** date **19/06/2023**

UNI EN 12407

Petrographic examination on polarized light microscope (MOLP) on the specimen in thin section and verification of the appearance

Sample Description



23DM11025

Metamorphic, heterogeneous, polychromatic lithotype with medium fine grain.

Macroscopic Description

Holocrystalline, anisotropic metamorphic lithotype. The material is heterogeneous and has isooriented structures with locally deformed planes which can take on vague millimeter-sized ocular structures of a whitish green hue. Among the blasts, generally elongated and isooriented phyllosilicate individuals are recognized, alternating with clear individuals with a vitreous luster (quartz). The lithotype is speckled with opaque minerals.

According to the Rock Color Chart of the Geological Society of America, the color of the material varies between Grayish olive green 5GY 3/2, Dusky blue green 5BG 3/2, with lighter shades between Dark gray N3 and Med. light gray N6.

There are traces of surface porosity. The rock is selectively scratched with a metal blade which cuts the phyllosilicates and does not react in contact with hydrochloric acid.

Test report n. **23RP01681** date **19/06/2023**



Picture 2: gneiss as it is signed **23DM11025**. (Stereomicroscope, vision 20 mm)

Microscopic description

It is a crystalloblastic lithotype of metamorphic origin. Planes of isoorientation of the constituent phases are clearly visible in the material, even if the schistosity is poorly developed, with planes with irregular development as regards spatial dimensions and thicknesses. However, the juxtaposition of layers with different compositions is appreciable. It is also possible to identify the alternation of light minerals consisting of fish-like structures surrounded by lamellar phyllosilicate individuals. The presence of lamellar phyllosilicates and their isoorientation allows us to define the lepidoblastic material. The blasts can present anhedral crystalline forms, i.e. be devoid of crystalline habit, or subordinately subhedral (with traces of crystalline form) and more rarely be euhedral (with crystalline form). Quartz, present as an association of polycrystalline quartzes of metamorphic origin, often appears in "fish" structures, vaguely owl-like, while phyllosilicates, which have lower hardnesses, are deformed and adapted around the structure of blasts of greater hardness.

The major constituents (>5%) are:

Quartz: Mohs hardness 7. Unequal granular with maximum dimensions equal to 0.3 mm, polycrystalline, deformed, with wavy extinction. Generates "fish" structures from development oriented to the structural lines of the material.

Phyllosilicates: Mohs hardness 2.5-3. In isooriented and often deformed laciniae with dimensions less than 1 mm. They are present predominantly as Muscovites. Biotite is rare.

In clear alternative to the quantities of quartz and phyllosilicates, in any case greater than 5%, are:

Opaque minerals: Mohs hardness 5.5-6.5. They often have euhedral habit and are mainly present as Pyrite and subordinately as Magnetite. They have a maximum size of 1 mm.

Epidotes: Mohs hardness 6.5. They are widespread in the section and present as green colored Pistacite.

The minor constituents (<5%) are:

Inosilicates: hardness 5 ÷ 6 on the Mohs scale. Mainly present as Hornblende-type amphiboles, sometimes deformed, even in weathered condition, mainly isooriented.

Chlorite: hardness 2 ÷ 3 on the Mohs scale. Predominantly as a product of alteration, elongated in lacinie, also isooriented;

Zirconia: hardness 7.5 on the Mohs scale. Diffuse as microblasts in the section.

Discontinuities: they are mainly attributable to the isoorientation of the more elongated clasts. The presence of porosity is also observed on the surface of the material.

Alteration: some mineralogical phases are products of alterations of pre-existing crystals (chlorite).

Sheet 3 of 6

Test report n. **23RP01681** date **19/06/2023**

Petrographic description* (according to EN12407 e EN12670): **GNEISS**
(Metamorphic Rocks Classification Charts) (Recommendations by IUGS Subcommittee on the Systematics of Metamorphic Rocks)

***Note:** the reading of this thin section was performed according to the EN12407 and EN 12670 standards, and therefore can be used in the context of the CE marking of the same material.



Picture 3: microscopic characteristics of sample **23DM11025**. Parallel light. Field of vision 10mm. The section is cut thicker than 30 microns, therefore the general appearance and the interference colors are not the canonical ones of the minerals under analysis. (20I, N//)

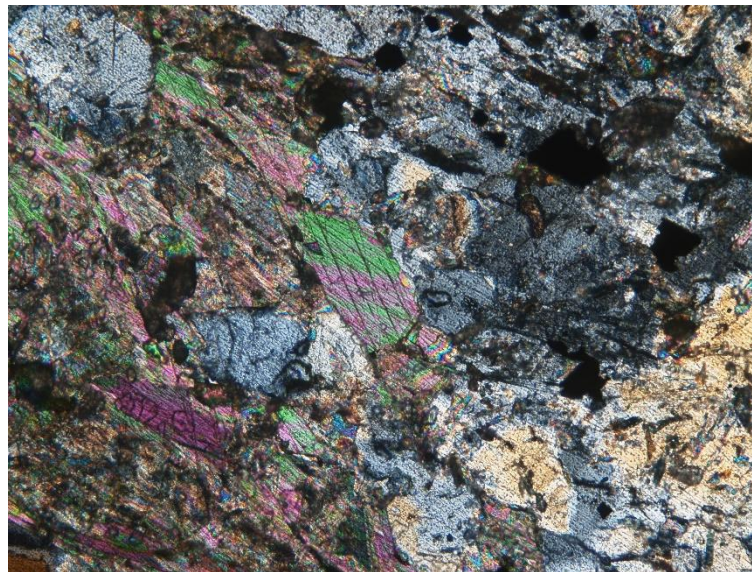


Picture 4: microscopic characteristics of sample **23DM11025**. Polarized light. Field of vision 10mm. Identical shot of picture 3: the section is cut thicker than 30 microns, therefore the general appearance and the interference colors are not the canonical ones of the minerals under analysis. (20I, NX)

Test report n. **23RP01681** date **19/06/2023**



Picture 5: microscopic characteristics of sample **23DM11025**. Parallel light. Field of vision 2 mm. The clearest mineralogical phases are made up of muscovite lacinias. In the center of the image there are two elongated crystals iso-oriented to the muscovite. Below a dark green chlorite lacinia, and just above a yellowish-green pistacitic epidote. The section is cut thicker than 30 microns, therefore the general appearance and the interference colors are not the canonical ones of the minerals in analyses. (100I, N//)



Picture 6: microscopic characteristics of sample **23DM11025**. Polarized light. Field of vision 2 mm. In the center of the image a base of amphibole (hornblende) with traces of cleavage that intersect under angles of 120 degrees. The section is cut thicker than 30 microns, therefore the general appearance and the interference colors are not the canonical ones of the minerals under analysis. (100I, NX)



Test report n. **23RP01681** date **19/06/2023**

Geotechnical Department – The Director
Dr. Geol. Massimo Bonato

Disclaimer:

Document signed with digital signature D lgs n. 82 del 7 marzo 2005 e s.m.i.

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Information provided by the customer. If both the description of the sample and the sampling are attributable to the customer, all the other data associated with the sampling are also provided by him. If the sampling is not carried out by the laboratory, the results obtained are considered to refer to the sample as received and the laboratory declines its responsibility for the results calculated considering the sampling data provided by the Customer.

Test report 23RP01680 end