

RESULTS REPORT OF TEST

 Report Nº: IE141804

PETITIONER

D. Gregorio Berná
 BATEIG PIEDRA NATURAL, S.A.
 CAMÍ DE CASTELLA 112, B.º ESTACION
 03660 NOVELDA ALICANTE NIF: A03099405

COMMENTS:
FURTHER INFORMATION:
Specimen/s:

DELIVERY NOTE Nº:	REGISTRATION DATE:	SPECIMEN IDENTIFICATION ACCORDING TO APPLICANT:	MATERIAL:	QUANTITY:	RECEPCIÓN:
72116	23/05/2014	Bateig Azul-Galaxy	Natural Stone	76 tiles	Sent by the applicant

Test/s Carried out

Nº:	DESCRIPTION	REGULATION:
1	Determination of water absorption at atmospheric pressure	UNE-EN 13755:2008
1	Determination of apparent density and open porosity	UNE-EN 1936:2007
1	Determination of the abrasion resistance	UNE-EN 14157:2005
1	Determination of uniaxial compressive strength	UNE-EN 1926:2007
1	Determination of rupture energy	UNE-EN 14158:2004
1	Determination of resistance to salt crystallisation	UNE-EN 12370:1999
1	Determination of the slip resistance by means of the pendulum tester	UNE-EN 14231:2004
1	Determination of water absorption coefficient by capillary	UNE-EN 1925:1999
1	Determination of frost resistance	UNE-EN 12371:2011

 Paterna, on Thursday 12nd of June 2014

 Signed: D^a Rocío Correoso Cano
Technician of the Natural Stone Laboratory

 Signed: Mr. José Manuel Cuevas Castell
Responsible of the Natural Stone Laboratory

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REPORT N°: IE141804
 TESTED MATERIAL: Natural Stone
 DELIVEY NOTE N°: 72116

**NATURAL STONE TEST METHODS
 DETERMINATION OF APPARENT DENSITY AND OPEN POROSITY
 UNE-EN 1936 :2007 Apdo.8.1**

Information supplied by the petitioner :

Petitioner : Bateig Piedra Natural, S.A
 Petrographic name :
 Trade name of the stone : Bateig Azul-Galaxy
 Country and place of extraction :
 Anisotropy planes :
 Surface finish : Raw
 Sampling realized by : Petitioner

	START	END
Date test	02/06/2014	03/06/2014

	Higher	Lower
Temperature	25,4	21,4

TEST RESULT

Dimensions of the specimens : 50 x 50 x 50 mm

Specimen	1	2	3	4	5	6
Apparent density (kg/m ³)	2230	2290	2260	2240	2310	2290
Open porosity (%)	13,6	13,6	13,5	13,4	13,4	13,5

	AVERAGE
Apparent density (kg/m ³)	2270
Open porosity (%)	13,5

ADDITIONAL DATA OF TEST:

COMMENTS:

REPORT N°: IE141804
 TESTED MATERIAL: Natural Stone
 DELIVEY NOTE N°: 72116

**NATURAL STONE TEST METHODS
 DETERMINATION OF UNIAXIAL COMPRESSIVE STRENGTH
 UNE-EN 1926:2007**

Information supplied by the petitioner :

Petitioner : Bateig Piedra Natural, S.A
 Petrographic name :
 Trade name of the stone : Bateig Azul-Galaxy
 Country and place of extraction :
 Anisotropy planes :
 Surface finish : Raw
 Sampling realized by : Petitioner

Registration date	23/05/2014
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	START	END
Date test	27/06/2014	30/06/2014

TEST RESULT

Specimen	1	2	3	4	5	6	7	8	9	10
Height, h (mm)	50,0	50,0	53,0	50,0	50,0	50,0	50,0	53,0	53,0	53,0
Average side (mm)	51	51	50	51	52	51	52	50	50	50
Breaking load, F(kN)	230	240	200	200	260	200	210	210	210	210
Compressive Strength (MPa)	90,5	91,6	79,2	75,9	97,7	76,5	78,9	83,6	84,2	85,3

Mean value of Compressive Strength, (MPa)	84
Standard deviation (MPa)	7
Coefficient of variation, v	0,085

ADDITIONAL DATA OF TEST:

COMMENTS:

REPORT N°: IE141804
 TESTED MATERIAL: Natural Stone
 DELIVEY NOTE N°: 72116

**NATURAL STONE TEST METHODS
 DETERMINATION OF WATER ABSORPTION COEFICIENT BY CAPILLARY
 UNE-EN 1925:1999**

Information supplied by the petitioner :

Petitioner : Bateig Piedra Natural, S.A
 Petrographic name :
 Trade name of the stone : Bateig Azul-Galaxy
 Country and place of extraction :
 Anisotropy planes :
 Surface finish : Raw
 Sampling realized by : Petitioner

	START	END
Date test	18/07/2014	18/07/2014

	Higher	Lower
Temperature	23,8	23,4

TEST RESULT

Dimensions (mm) : 50 x 50 x 50

Specimen	1	2	3	4	5	6
Dimensions (Side) (mm)	50,22	51,84	50,24	51,75	51,67	51,79
Water absorption coeficient by capillary ($\text{g}/\text{m}^2 \cdot \text{s}^{0,5}$)	11,651	13,028	11,713	12,749	13,027	13,829
Mean value of water absorption coeficient by capillary ($\text{g}/\text{m}^2 \cdot \text{s}^{0,5}$)	12,666					

ADDITIONAL DATA OF TEST:

COMMENTS:

REPORT N°: IE141804
 TESTED MATERIAL: Natural Stone
 DELIVEY NOTE N°: 72116

**NATURAL STONE TEST METHODS
 DETERMINATION OF RESISTANCE TO SALT CRYSTALLISATION
 UNE-EN 12370:1999**

Information supplied by the petitioner :

Petitioner : Bateig Piedra Natural, S.A
 Petrographic name :
 Trade name of the stone : Bateig Azul-Galaxy
 Country and place of extraction :
 Anisotropy planes :
 Surface finish : Raw
 Sampling realized by : Petitioner

	START	END
Date preparation	28/05/2014	2/06/2014
Date test	02/06/2014	27/06/2014

TEST RESULT

Specimen	1	2	3	4	5	6
Width (mm)	40,98	40,33	40,51	40,38	40,56	40,42
Thickness (mm)	40,43	40,53	41,04	41,21	41,07	41
Length (mm)	40,31	41,03	40,09	40,41	40,42	40,48
Variation of mass ΔM (%)	1,35	1,61	1,22	1,11	0,83	0,71
Mean value of variation of mass ΔM (%)	1,14					

ADDITIONAL DATA OF TEST :

COMMENTS:

The increment of the weight of the samples is probably caused by the presence of salt crystals in the porous media of the rock.

REPORT N°: IE141804
TESTED MATERIAL: Natural Stone
DELIVEY NOTE N°: 72116



Photo 1



Photo 2

REPORT N°: IE141804
 TESTED MATERIAL: Natural Stone
 DELIVEY NOTE N°: 72116

**NATURAL STONE TEST METHODS
 DETERMINATION OF WATER ABSORPTION AT ATMOSPHERIC
 PRESSURE
 UNE-EN 13755:2008**

Information supplied by the petitioner :

Petrographic name :
 Trade name of the stone : Bateig Azul-Galaxy
 Country and place of extraction :
 Petitioner : Bateig Piedra Natural, S.A
 Anisotropy planes :
 Surface finish : Raw
 Sampling realized by : Petitioner

TEST RESULT

Dimensions of the specimens (mm) : 50 x 50 x 50 mm

Registration date	23/05/2014
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	START	END
Date test	02/06/2014	05/06/2014

	Higher	Lower
Temperature	25,7	20,3

Specimen N°	1	2	3	4	5	6
Dimensions (Lade) (mm)	51,42	51,26	50,98	51,49	51,34	51,28
Water absorption (%)	5,0	4,8	5,0	5,0	4,9	4,9
Water Absorption medium (%)	4,9					

ADDITIONAL DATA OF TEST:

COMMENTS :

REPORT N°: IE141804
 TESTED MATERIAL: Natural Stone
 DELIVEY NOTE N°: 72116

**NATURAL STONE TEST METHODS
 DETERMINATION OF THE ABRASION RESISTANCE
 UNE-EN 14157:2005**

Information supplied by the petitioner :

Petitioner : Bateig Piedra Natural, S.A
 Petrographic name :
 Trade name of the stone : Bateig Azul-Galaxy
 Country and place of extraction :
 Anisotropy planes :
 Surface finish : Honed
 Sampling realized by : Petitioner

TEST RESULT

Dimensions of the specimens : 150 x 150 x 18 mm

Registration date	23/05/2014
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	START	END
Date test	11/06/2014	11/06/2014

Value of calibration	0,3
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PROBETA Specimen	1	2	3	4	5	6
Dimensions (mm)	150,14x150,06x18,83	149,95x150,26x18,78	150,14x149,92x19	149,76x150,2x19,11	150,09x150,52x18,52	150,5x148,93x19,37
Dimension of the Groove (mm)	24,5	24,5	26,0	25,0	26,0	26,0
Average Value (mm)	25,33					

ADDITIONAL DATA OF TEST :

COMMENTS :

REPORT N°: IE141804
 TESTED MATERIAL: Natural Stone
 DELIVEY NOTE N°: 72116

**NATURAL STONE TEST METHODS
 DETERMINATION OF RUPTURE ENERGY
 UNE-EN 14158:2004**

Information supplied by the petitioner :

Petitioner : Bateig Piedra Natural, S.A
 Petrographic name :
 Trade name of the stone : Bateig Azul-Galaxy
 Country and place of extraction :
 Anisotropy planes :
 Surface finish : Honed
 Sampling realized by : Petitioner

TEST RESULT

	START	END
Date preparation	26/05/2014	28/05/2014
Date test	28/05/2014	28/05/2014

TEST RESULT

Specimen	1	2	3	4	5
Width (mm)	200,09	200	199,83	200,07	199,89
Thickness (mm)	29,33	29,4	29,02	28,72	30,06
Length (mm)	199,7	199,89	200,35	199,95	199,93
Rupture Energy, W (J)	3	3	3	3	3
Average Rupture Energy (J)	3				

ADDITIONAL DATA OF TEST :

COMMENTS :

REPORT N°: IE141804
 TESTED MATERIAL: Natural Stone
 DELIVEY NOTE N°: 72116

**NATURAL STONE TEST METHODS
 DETERMINATION OF FLEXURAL STRENGTH UNDER CONCENTRATED LOAD
 UNE-EN 12372:2007**

Information supplied by the petitioner :

Petrographic name :
 Trade name of the stone : Bateig Azul-Galaxy
 Country and place of extraction :
 Anisotropy planes :
 Petitioner : Bateig Piedra Natural, S.A
 Surface finish : Saw
 Sampling realized by : Petitioner
 Dimensions : 300 x 50 x 50 mm

	START	END
Preparation date	09/06/2014	16/06/2014
Test date	09/05/2014	10/09/2014

	Higher	Lower
T ^a (°C)	24,5	23,8

TEST RESULT

Specimen	1	2	3	4	5	6	7	8	9	10
Span distance <i>l</i> (mm)	268,4	269,5	251,2	269,2	270,8	270,4	269,6	270,4	268,1	251,1
Breaking load, F (N)	4760	5010	4570	4380	4710	4900	3910	4900	3490	4690
Thickness along breaking plane (mm)	53,7	53,7	50,0	53,6	53,7	53,9	53,5	54,0	53,7	50,6
Width along breaking plane (mm)	50,0	49,8	54,0	49,9	50,3	50,4	50,1	50,1	50,0	53,5
Breaking zone	≤ 15% <i>l</i>	≤ 15% <i>l</i>	≤ 15% <i>l</i>	≤ 15% <i>l</i>	≤ 15% <i>l</i>	≤ 15% <i>l</i>	≤ 15% <i>l</i>	≤ 15% <i>l</i>	≤ 15% <i>l</i>	≤ 15% <i>l</i>
Flexural Strength, R _{ff} (MPa)	13,3	14,1	12,8	12,3	3,2	13,6	11,0	13,6	9,7	12,9

Mean value of Flexural Strength, R _{tf} (MPa)	12,7
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Standard deviation, s (MPa)	1,3
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Lower expected value, E (MPa)	9,9
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Speed load was 0,25 MPa/s.

ADDITIONAL TEST DATA: COMMENTS:

REPORT N°: IE141804
 TESTED MATERIAL: Natural Stone
 DELIVEY NOTE N°: 72116

**NATURAL STONE TEST METHODS
 DETERMINATION OF FROST RESISTANCE
 UNE-EN 12371:2002**

**DETERMINATION OF FLEXURAL STRENGTH UNDER CONCENTRATED LOAD
 84 CICLES FREEZE/THAW
 UNE-EN 12372:2007**

TEST RESULT

	START	END		Higher	Lower
Preparation date	09/06/2014	10/09/2014	T ^a (°C)	26,8	25,3
Test date	09/05/2014	10/09/2014			

Specimen	11	12	13	14	15	16	17	18	19	20
Span distance l (mm)	245,3	248,8	250,0	249,1	249,8	248,6	248,9	268,5	268,7	248,3
Breaking load, F (N)	5000	4520	4420	4710	3940	4030	5000	5000	4910	4130
Thickness along breaking plane (mm)	49,4	50,0	49,7	51,7	50,1	50,1	50,1	53,9	52,7	49,6
Width along breaking plane (mm)	53,8	54,0	53,5	53,7	55,4	53,7	54,0	49,7	49,9	53,8
Breaking zone	$\leq 15\% l$	$\leq 15\% l$	$\leq 15\% l$	$\leq 15\% l$	$\leq 15\% l$	$\leq 15\% l$	$\leq 15\% l$	$\leq 15\% l$	$\leq 15\% l$	$\leq 15\% l$
Flexural Strength, R_{tf} (MPa)	14,0	12,5	12,5	12,3	10,6	11,1	13,8	13,9	14,3	11,6

Mean value of Flexural Strength, $\overline{R_{tf}}$ (MPa)	12,7
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Standard deviation, s (MPa)	1,3
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Lower expected value, E (MPa)	10,1
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Variation of flexural strength, ΔR_{tf} (%)	0,0
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Speed load was 0,25 MPa/s.

ADDITIONAL TEST DATA:

COMENTS:

REPORT N°: IE141804
 TESTED MATERIAL: Natural Stone
 DELIVEY NOTE N°: 72116

**NATURAL STONE TEST METHODS
 DETERMINATION OF THE SLIP RESISTANCE BY MEANS OF THE
 PENDULUM TESTER
 UNE-EN 14231:2004**

Information supplied by the petitioner :

Petitioner : Bateig Piedra Natural, S.A
 Petrographic name :
 Trade name of the stone : Bateig Azul-Galaxy
 Country and place of extraction :
 Anisotropy planes :
 Surface finish : Honed
 Sampling realized by : Petitioner

TEST RESULT

Dimensions of specimens : 200 x 200 x 20 mm

Registration date	23/05/2014
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	START	END
Date test	09/07/2014	09/07/2014

Size of the rubber sliders : 76 mm.

	DRY CONDITIONS					
Specimen identification	1	2	3	4	5	6
USRV (mean value for test specimen)	49	56	51	50	50	51
USRV (of the specimen)	51					

	WET CONDITIONS					
Specimen identification	1	2	3	4	5	6
USRV (mean value for test specimen)	55	59	54	56	55	55
USRV (of the specimen)	56					

COMMENTS:

ADDITIONAL DATE OF TEST: