



LABORATORIO CERAMICO SEBASTIAN CARPI
COLEGIO OFICIAL DE INGENIEROS INDUSTRIALES DE CASTELLON

C.I.F.: O - 4670001 - I

AVENIDA DEL MAR, Nº 46 - 12003 CASTELLON
TEL: 964 208 583 - FAX: 964 202 594
www.laboratoriocarpi.com

TEST REPORT

PETITIONER: INTERTEK IBERICA SPAIN, S.A.U.
ADDRESS: Alameda Recalde, nº 27-5B
CITY: BILBAO (Vizcaya)
TEST REPORT Nº: 49.219
PAGE Nº: 1 / 12

KÉRELEM BENYÚJTÓJA
CÍM

DATE OF TEST REPORT: 29/08/2014
DATE OF RECEIPT OF THE SAMPLE: 08/08/2014
DATE OF TEST PERFORMANCE: 08 - 25/08/2014

DESCRIPTION OF THE SAMPLE:

A MINTA MEGNEVEZÉSE

Dry-pressed ceramic tiles,
200*200/200*300/200*500
glazed. Ref.:-- **SAR- 851557 models BRILLO/MATT**

SZÁRAZON PRÉSELT KERÁMIA

Code: 286-10

A MINTA GYÁRTÓJA

* Sample furnished by: **CIMA CERAMICAS, S.L.U.**

TEST PERFORMED AFTER THE STANDARD "GS 778/1997 $\equiv$ SSA 1030/1998 " : SZABVÁNY SZERINTI VIZSGÁLATOK
AMELYEKNEK MEGFELELT A
TERMÉK

- | | |
|--|--------------------------|
| - DETERMINATION OF SURFACE QUALITY. | A FELÜLET MINŐSÉGE |
| - DETERMINATION OF DIMENSIONS. | MÉRETTARTÁS |
| - DETERMINATION OF MODULUS OF RUPTURE AND BREAKING STRENGTH. | TÖRÉSSZILÁRDSÁG |
| - DETERMINATION OF CRAZING RESISTANCE. GLAZED TILES. | FELÜLETI FESZÜLTSG |
| - DETERMINATION OF WATER ABSORPTION. | VÍZFELVÉTEL |
| - DETERMINATION OF CHEMICAL RESISTANCE. GLAZED TILES. | ELLENÁLLÁS VEGYSZEREKNEK |


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CASTELLÓN
Rubén Almela Senent
CHIEF OF LABORATORY


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José A. Estibález Catalán
MANAGER

The samples tested have been furnished by the petitioner.
The reported results relate only to the samples tested.
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Date: 30/08/2014

DETERMINATION OF QUALITY SURFACE

DESCRIPTION OF THE SAMPLE.-

Dry-pressed ceramic tiles, 200 x 200 mm, glazed. Ref.:

-- SAR- 851557 (mod. **BLANCO BRILLO**)

Code: 286-10

* Sample furnished by: **CIMA CERAMICAS, S.L.**

RESULTS.- (Test performed after Standard GS 778/1997 $\equiv$ SSA 1030 / 1998)

* The number of tiles tested: **30 tiles.**

* The percentage of tiles without defects: **97 %**

* Observations: There is one tile with visible defects (specks).



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Date: 30/08/2014

DETERMINATION OF DIMENSIONS

*** MEASUREMENTS OF LENGTH AND WIDTH ***

DESCRIPTION OF THE SAMPLE.-

Dry-pressed ceramic tiles, 200 x 200 mm, glazed. Ref.:

-- SAR- 851557 (mod. BLANCO BRILLO)

Code: 286-10

* Sample furnished by: CIMA CERAMICAS, S.L.

RESULTS.- (Test performed after Standard GS 778/1997 $\equiv$ SSA 1030 / 1998)

* Work size = 200 x 200 mm

Individuals measurements (mm)

<u>Tile</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
<u>L1</u>	200.6	200.5	200.6	200.5	200.5	200.5	200.4	200.5	200.7	200.6
<u>L2</u>	200.5	200.5	200.4	200.3	200.4	200.5	200.4	200.5	200.4	200.5
<u>L3</u>	200.4	200.4	200.4	200.3	200.3	200.3	200.5	200.4	200.4	200.2
<u>L4</u>	200.6	200.5	200.5	200.2	200.3	200.3	200.4	200.4	200.5	200.1

Average measurements (mm)

<u>Length</u>	200.5	200.5	200.5	200.3	200.4	200.4	200.4	200.5	200.5	200.4
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Deviations from the work size (%)

<u>D^{Lw}</u>	0.25	0.25	0.25	0.15	0.20	0.20	0.20	0.25	0.25	0.20
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* Average length of the sample: 200.4 mm

* Maximum deviations of the average measurements from the work size: 0.25 %

* Uncertainty measurement: $U = 0.05 \%$ ($k=2$)



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DETERMINATION OF DIMENSIONS

* MEASUREMENTS OF THICKNESS *

DESCRIPTION OF THE SAMPLE.-

Dry-pressed ceramic tiles, 200 x 200 mm, glazed. Ref.:

-- SAR- 851557 (mod. BLANCO BRILLO)

Code: 286-10

* Sample furnished by: CIMA CERAMICAS, S.L.

RESULTS.- (Test performed after Standard GS 778/1997 $\equiv$ SSA 1030 / 1998)

* Work size thickness = **7.6 mm**

	<u>Measurements of thickness (mm)</u>									
<u>Tile</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
<u>G1</u>	7.3	7.5	7.3	7.6	7.7	7.5	7.5	7.6	7.3	7.6
<u>G2</u>	7.3	7.7	7.5	7.6	7.7	7.6	7.7	7.7	7.5	7.7
<u>G3</u>	7.6	7.6	7.5	7.6	7.6	7.6	7.6	7.6	7.6	7.6
<u>G4</u>	7.2	7.5	7.4	7.5	7.5	7.5	7.5	7.5	7.4	7.5
<u>Average thickness (mm)</u>	7.4	7.6	7.4	7.6	7.6	7.6	7.6	7.6	7.5	7.6
<u>Deviation from the work size thickness (mm)</u>	-0.2	0.0	-0.2	0.0	0.0	0.0	0.0	0.0	-0.1	0.0

* Average thickness of the sample: **7.6 mm**

* Maximum deviation of the thickness from the work size thickness: **-0.2 mm**

* Uncertainty measurement: **U = 0.1 mm (k=2)**



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DETERMINATION OF DIMENSIONS

*** MEASUREMENTS OF STRAIGHTNESS OF SIDES ***

DESCRIPTION OF THE SAMPLE.-

Dry-pressed ceramic tiles, 200 x 200 mm, glazed. Ref.:

-- SAR- 851557 (mod. BLANCO BRILLO)

Code: 286-10

* Sample furnished by: CIMA CERAMICAS, S.L.

RESULTS.- (Test performed after Standard GS 778/1997 $\equiv$ SSA 1030 / 1998)

* Work size = 200 x 200 mm

Measurements of straightness of sides (mm)

<u>Tile</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
<u>R1</u>	0.01	0.00	-0.01	-0.08	-0.03	-0.11	-0.05	0.00	0.00	-0.05
<u>R2</u>	0.00	0.00	-0.02	-0.07	0.00	-0.02	0.03	0.09	-0.01	0.00
<u>R3</u>	0.05	-0.13	0.02	-0.08	-0.12	-0.12	-0.12	-0.10	0.01	-0.13
<u>R4</u>	0.00	0.08	0.00	-0.13	-0.03	-0.11	0.00	-0.10	-0.07	-0.16

* Maximum deviation from straightness, related to the work size: **0.05 / -0.08 %**

* Uncertainty measurement: **U = 0.03 % (k=2)**



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DETERMINATION OF DIMENSIONS
*** MEASUREMENTS OF RECTANGULARITY ***

DESCRIPTION OF THE SAMPLE.-

Dry-pressed ceramic tiles, 200 x 200 mm, glazed. Ref.:

-- SAR- 851557 (mod. BLANCO BRILLO)

Code: 286-10

* Sample furnished by: CIMA CERAMICAS, S.L.

RESULTS.- (Test performed after Standard GS 778/1997 $\equiv$ SSA 1030 / 1998)

* Work size = 200 x 200 mm

<u>Measurements of rectangularity (mm)</u>										
<u>Tile</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
<u>O1</u>	-0.23	0.00	-0.08	0.00	0.03	-0.04	-0.01	-0.07	-0.17	-0.02
<u>O2</u>	0.22	0.00	-0.29	-0.25	-0.26	-0.29	-0.04	-0.02	-0.29	-0.37
<u>O3</u>	-0.09	0.03	0.27	-0.05	0.01	-0.03	0.00	-0.11	0.19	-0.12
<u>O4</u>	0.00	0.01	-0.19	0.12	0.05	0.20	-0.06	0.14	-0.05	0.37

* Maximum deviation from rectangularity, related to the work size: **0.19 / -0.19 %**

* Uncertainty measurement: **U = 0.03 %** (**k=2**)



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Date: 30/08/2014

DETERMINATION OF DIMENSIONS

* MEASUREMENTS OF SURFACE FLATNESS *

DESCRIPTION OF THE SAMPLE.-

Dry-pressed ceramic tiles, 200 x 200 mm, glazed. Ref.:

-- SAR- 851557 (mod. BLANCO BRILLO)

Code: 286-10

* Sample furnished by: CIMA CERAMICAS, S.L.

RESULTS.- (Test performed after Standard GS 778/1997 $\equiv$ SSA 1030 / 1998)

* Work size = 200 x 200 mm

* Diagonal calculated from the work size: 282.8 mm

Measurements of centre curvature (mm)

<u>Tile</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
<u>CC1</u>	0.42	-0.09	0.38	-0.11	-0.09	-0.37	0.25	0.29	0.45	0.15
<u>CC2</u>	0.36	-0.26	0.26	-0.20	-0.16	-0.42	0.23	0.27	0.36	0.09
<u>CC3</u>	0.57	-0.02	0.51	0.01	0.00	-0.26	0.37	0.38	0.58	0.25
<u>CC4</u>	-0.02	-0.23	0.27	-0.17	-0.11	-0.38	0.27	0.29	0.37	0.15

Measurements of edge curvature (mm)

<u>Tile</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
<u>CL1</u>	0.28	-0.12	0.12	-0.10	-0.03	-0.11	0.28	0.26	0.28	0.24
<u>CL2</u>	-0.09	-0.38	-0.07	-0.25	-0.32	-0.48	-0.06	-0.08	0.00	-0.18
<u>CL3</u>	0.28	0.05	0.25	-0.11	0.03	-0.17	0.22	0.33	0.39	0.10
<u>CL4</u>	0.00	-0.18	-0.09	-0.14	-0.13	-0.36	-0.03	0.02	-0.02	-0.09

Measurements of warpage (mm)

<u>Tile</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
<u>A1</u>	-0.10	0.00	-0.03	-0.05	0.05	0.15	0.16	-0.19	0.18	-0.05
<u>A2</u>	-0.12	0.00	0.00	-0.06	-0.14	-0.09	-0.21	-0.22	-0.05	-0.15
<u>A3</u>	-0.07	-0.17	-0.17	-0.07	-0.02	0.02	0.18	0.04	-0.12	0.02
<u>A4</u>	0.00	0.10	0.08	0.00	-0.08	-0.07	-0.19	-0.15	0.00	-0.14

* Maximum centre curvature, related to the diagonal: 0.21 / -0.15 %

* Maximum edge curvature, related to the work size: 0.20 / -0.24 %

* Maximum warpage, related to the diagonal: 0.06 / -0.08 %

* Uncertainty measurement: U = 0.03 % (k=2)



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Date: 30/08/2014

DETERMINATION OF MODULUS OF RUPTURE AND BREAKING STRENGTH

DESCRIPTION OF THE SAMPLE.-

Dry-pressed ceramic tiles, 200 x 200 mm, glazed. Ref.:

-- SAR- 851557 (mod. BLANCO BRILLO)

Code: 286-10

* Sample furnished by: CIMA CERAMICAS, S.L.

RESULTS.- (Test performed after Standard GS 778/1997 $\equiv$ SSA 1030 / 1998)

* Parameters: L = 180 mm ; l = 10 mm ; t = 5 mm ; d = 20 mm

<u>Tile</u>	<u>Thickness</u> (mm)	<u>Breaking load " F"</u> (N)	<u>Modulus of rupture " R"</u> (MPa)
1	5.0	401.8	21.6
2	4.9	370.4	20.8
3	5.0	405.7	21.9
4	5.0	397.9	21.4
5	4.9	369.5	20.7
6	4.8	371.4	21.7
7	4.8	362.6	21.2

* Average Modulus of Rupture: R = 21 MPa

* Uncertainty measurement: U = 1 Mpa (k=2)



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Date: 30/08/2014

DETERMINATION OF CRAZING RESISTANCE

*** GLAZED TILES ***

DESCRIPTION OF THE SAMPLE.-

Dry-pressed ceramic tiles, 200 x 200 mm, glazed. Ref.:

-- SAR- 851557 (mod. BLANCO BRILLO)

Code: 286-10

* Sample furnished by: CIMA CERAMICAS, S.L.

RESULTS.- (Test performed after Standard GS 778/1997 $\equiv$ SSA 1030 / 1998)

* Number of tiles tested: **Five.**

* Number of tiles showing crazing: **Not - one.**

* Description of crazing: The tiles tested are free from crazes on the glazed surface.



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Date: 30/08/2014

DETERMINATION OF WATER ABSORPTION

DESCRIPTION OF THE SAMPLE.-

Dry-pressed ceramic tiles, 200 x 200 mm, glazed. Ref.:

-- SAR- 851557 (**mod. BLANCO BRILLO**) --

Code: 286-10

* Sample furnished by: CIMA CERAMICAS, S.L.

RESULTS.- (Test performed after Standard **GS 778/1997 $\equiv$ SSA 1030 / 1998**)

<u>Tile</u>	<u>Water absorption</u> (%)
1	16.0
2	16.2
3	14.8
4	16.2
5	14.9
6	16.2
7	16.1
8	16.1
9	15.2
10	16.1
<u>Average values</u>	15.8
<u>Measurement</u> <u>Uncertainty</u> (K=2)	0.4



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DETERMINATION OF CHEMICAL RESISTANCE

DESCRIPTION OF THE SAMPLE.-

Dry-pressed ceramic tiles, 200 x 200 mm, glazed. Ref.:

-- SAR- 851557 (mod. BLANCO BRILLO) --

Code: 286-10

* Sample furnished by: CIMA CERAMICAS, S.L.

RESULTS.- (Test performed after Standard GS 778/1997 $\equiv$ SSA 1030 / 1998)

* Number of test specimens used with each test solution: FIVE.

<u>Test solutions</u>	<u>Classification</u>	<u>Visual Changes</u>
* <u>Stains.</u>		
- Methylene Blue	1	- Stain removed with water.
- Potassium Permanganate	1	- Stain removed with water.
* <u>Household chemicals.</u>		
- Ammonium Chloride	AA	- No visible effects.
- Standard Cleaning Agent ...	AA	- No visible effects.
* <u>Swimming pool salts.</u>		
- Sodium Hypochlorite	AA	- No visible effects.
- Copper Sulphate	AA	- No visible effects.



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CONCLUSIONS

DESCRIPTION OF THE SAMPLE.-

Dry-pressed ceramic tiles, 200 x 200 mm, glazed. Ref.:

-- SAR- 851557 (mod. BLANCO BRILLO) --

Code: 286-10

* Sample furnished by: CIMA CERAMICAS, S.L.

CONCLUSIONS.-

The results obtained in the test report accomplish the specifications of wall tiles of the Standard GS 779/1997 $\equiv$ SSA 1031/1998.



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Intertek

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