LABORATORIO SEBASTIAN CARPI

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TEST REPORT

REQUESTED BY:	REVIGLASS, S.A.
ADDRESS:	Ctra. Tolosa – Azpeitia, km 8
LOCATION:	Bidania (Gipuzkoa)
REPORT NO:	61.744
ISSUE DATE:	28/01/2025
DATE OF RECEIPT OF SAMPLES:	16/01/2025
DATE TESTS CARRIED OUT:	16 – 28/01/2025
No. OF TILES SUPPLIED:	9 sheets (38,5cm x 38,5cm)
LABORATORY CODE:	25-009-2

Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation	
SUPPLIER:	-
MANUFACTURER:	-
SAMPLING:	-
DESCRIPTION OF THE SAMPLE:	Glass mosaic, 25 mm x 25 mm.
SAMPLE REFERENCE:	ALBATROS 2,5X2,5

TEST CARRIED OUT:

- UNE-EN-ISO 10545-3:2018	DETERMINATION OF WATER ABSORPTION
- UNE-EN-ISO 10545-5:1998	DETERMINATION OF IMPACT RESISTANCE BY MEASUREMENT OF COEFFICIENT OF RESTITUTION.
- UNE-EN-ISO 10545-7:1999	DETERMINATION OF RESISTANCE TO SURFACE ABRASION FOR GLAZED TILES.
- UNE-EN-ISO 10545-12:1997	DETERMINATION OF FROST RESISTANCE.
- UNE-EN-ISO 10545-13:2017	DETERMINATION OF CHEMICAL RESISTANCE.
- UNE-EN-ISO 10545-14:2015	DETERMINATION OF RESISTANCE TO STAINS.
- UNE-EN 16165:2022	DETERMINATION OF SLIP RESISTANCE OF PEDESTRIAN SURFACES. PENDULUM METHOD (Annex C and National Annex A).
- UNE 67-101/1M:1992	DETERMINATION OF SCRATCH HARDNESS ACCORDING TO MOHS.
- ANNEX:	PICTURE OF TESTED SAMPLE

ilac-MRA

ENAC
ENSAYO
ISO 17025
Nº15 / LE064

REPORT No: **61.744**
REQUESTED BY: **REVIGLASS, S.A.**
ISSUE DATE: **28/01/2025**
SAMPLE DESCRIPTION: **Glass mosaic, 25 mm x 25 mm.**
SAMPLE REFERENCE: **ALBATROS 2,5X2,5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE: **25-009-2**

DETERMINATION OF WATER ABSORPTION

*** Test carried out according to UNE-EN-ISO 10545 Part 3:2018.**

*** We have tested five specimens with two tiles per specimen**

*** Water absorption for each specimen:**

Specimen	Water absorption (E_v) (%)
1	0.1
2	0.1
3	0.1
4	0.1
5	0.1

*** Average water absorption of the sample: 0.1 %**

*** Measurement uncertainty: U = ± 0.1 % (k=2)**

*** Average value uncertainty: U = ± 0.1 % (k=2)**

REPORT No:	**61.744**
REQUESTED BY:	**REVIGLASS, S.A.**
ISSUE DATE:	**28/01/2025**
SAMPLE DESCRIPTION:	**Glass mosaic, 25 mm x 25 mm.**
SAMPLE REFERENCE:	**ALBATROS 2,5X2,5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE:	**25-009-2**

DETERMINATION OF IMPACT RESISTANCE BY MEASUREMENT OF COEFFICIENT OF RESTITUTION

*** Test carried out according to UNE-EN-ISO 10545 Part 5:1998.**

Test specimen	Coefficient of restitution
1	0.83
2	0.82
3	0.84
4	0.82
5	0.82

*** Average coefficient of restitution: 0.83**

*** Measurement uncertainty: U = ± 0.04 (k=2)**

*** Observations: The test specimens are free from visible defects.**

REPORT No:	**61.744**
REQUESTED BY:	**REVIGLASS, S.A.**
ISSUE DATE:	**28/01/2025**
SAMPLE DESCRIPTION:	**Glass mosaic, 25 mm x 25 mm.**
SAMPLE REFERENCE:	**ALBATROS 2,5X2,5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE:	**25-009-2**

DETERMINATION OF RESISTANCE TO SURFACE ABRASION

GLAZED TILES

*** Test carried out according to UNE-EN-ISO 10545 Part 7:1999.**

*** Classification: Class 4**

*** Abrasion stage at which visual failure occurred: 6.000 revolutions.**

REPORT No:	**61.744**
REQUESTED BY:	**REVIGLASS, S.A.**
ISSUE DATE:	**28/01/2025**
SAMPLE DESCRIPTION:	**Glass mosaic, 25 mm x 25 mm.**
SAMPLE REFERENCE:	**ALBATROS 2,5X2,5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE:	**25-009-2**

DETERMINATION OF FROST RESISTANCE

*** Test carried out according to UNE-EN-ISO 10545 Part 12:1997.**

*** Number of tiles tested: Seventy-five.**

*** Method used to impregnate the tiles: Impregnation with water at pressure below of the atmospheric pressure.**

*** The initial water content before the freeze-thaw test: E_1 = 0.0 % ± 0.1 % (k=2)**

*** The final water content after the freeze-thaw test: E_2 = 0.1 % ± 0.1 % (k=2)**

*** Number of damaged tiles after 100 cycles: Not-one.**

*** Description of defects after the freeze-thaw test: The tiles tested are free from visible defects.**

REPORT No: **61.744**
REQUESTED BY: **REVIGLASS, S.A.**
ISSUE DATE: **28/01/2025**
SAMPLE DESCRIPTION: **Glass mosaic, 25 mm x 25 mm.**
SAMPLE REFERENCE: **ALBATROS 2,5X2,5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE: **25-009-2**

DETERMINATION OF CHEMICAL RESISTANCE

*** Test carried out according to UNE-EN-ISO 10545 Part 13: 2017.**

*** Testing method: Partial immersion**

Test solutions	Classification			Visual Changes
	Specimen nº			
	1	2	3	
* Household chemicals				
- Ammonium Chloride (100 g/l)	A	A	A	No visible effects. Lines pencil removed
* Swimming pool salts				
- Sodium Hypochlorite (20 mg/l)	A	A	A	No visible effects. Lines pencil removed
* Acids and Alkalis (Low concentrations)				
- Hydrochloric Acid (3% v/v)	LA	LA	LA	No visible effects. Lines pencil removed
- Citric Acid (100 g/l)	LA	LA	LA	No visible effects. Lines pencil removed
- Potassium Hydroxide (30 g/l)	LA	LA	LA	No visible effects. Lines pencil removed
* Acids and Alkalis (High concentrations)				
- Hydrochloric Acid (18% v/v)	HA	HA	HA	No visible effects. Lines pencil removed
- Lactic Acid (5% v/v)	HA	HA	HA	No visible effects. Lines pencil removed
- Potassium Hydroxide (100 g/l)	HA	HA	HA	No visible effects. Lines pencil removed

REPORT No: **61.744**
REQUESTED BY: **REVIGLASS, S.A.**
ISSUE DATE: **28/01/2025**
SAMPLE DESCRIPTION: **Glass mosaic, 25 mm x 25 mm.**
SAMPLE REFERENCE: **ALBATROS 2,5X2,5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE: **25-009-2**

DETERMINATION OF RESISTANCE TO STAINS

*** Test carried out according to UNE-EN-ISO 10545 Part 14:2015.**

*** Test carried out without abrasion.**

Staining agents	Specimen					Cleaning procedure
	1	2	3	4	5	
* Stain having tracing action (Pastes) - Green staining agent in light oil....	5	5	5	5	5	Running hot water for five minutes. (Procedure A)
* Stain having chemical /oxidizing action - Iodine alcohol solution	5	5	5	5	5	Running hot water for five minutes. (Procedure A)
* Stain having filming action - Olive oil	5	5	5	5	5	Running hot water for five minutes. (Procedure A)

*** Observations: The chromium oxide used as green staining agent has a grain size less than 80 microns, being the 50 % (m/m) of theirs down on 3 microns.**

REPORT No: **61.744**
REQUESTED BY: **REVIGLASS, S.A.**
ISSUE DATE: **28/01/2025**
SAMPLE DESCRIPTION: **Glass mosaic, 25 mm x 25 mm.**
SAMPLE REFERENCE: **ALBATROS 2,5X2,5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE: **25-009-2**

DETERMINATION OF SLIP RESISTANCE OF PEDESTRIAN SURFACES PENDULUM METHOD. WET TEST

* Test performed after the UNE-EN 16165:2022 Annex C and National Annex A

Specimen	0º	45º	90º	Slip resistance ($PTV_{57} \equiv R_{d-57}$)
1	13	7	12	7
2	--	--	7	7
3	--	--	7	7
4	--	--	6	6
5	--	--	8	8

* Average slip resistance: $PTV_{57} \equiv R_{d-57} = 7$ (Class 0)

* Average value uncertainty: $U = \pm 4$ (k=2)

* Observations.- The classification established on the SU1 document (Safety of fall risks) of the Technical Code of Building, approved to R.D. 732/2019 of December 20, is the next:

CLASSIFICATION OF FLOORS AFTER "SU1"	
Slip resistance (R_d)	Class
$R_d \leq 15$	Class 0
$15 < R_d \leq 35$	Class 1
$35 < R_d \leq 45$	Class 2
$R_d > 45$	Class 3

REPORT No: **61.744**
REQUESTED BY: **REVIGLASS, S.A.**
ISSUE DATE: **28/01/2025**
SAMPLE DESCRIPTION: **Glass mosaic, 25 mm x 25 mm.**
SAMPLE REFERENCE: **ALBATROS 2,5X2,5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE: **25-009-2**

DETERMINATION OF SCRATCH HARDNESS ACCORDING TO MOHS

*** Test carried out according to UNE 67-101:1985 y UNE 67-101/1M:1992) (*)**

Tile	Mohs hardness
1	4
2	4
3	4

(*) Note: These standards are cancelled since 18.03.2009.

REPORT No:	**61.744**
REQUESTED BY:	**REVIGLASS, S.A.**
ISSUE DATE:	**28/01/2025**
SAMPLE DESCRIPTION:	**Glass mosaic, 25 mm x 25 mm.**
SAMPLE REFERENCE:	**ALBATROS 2,5X2,5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE:	**25-009-2**

ANNEX: PICTURE OF TESTED SAMPLE



Colour and tone are only approximated.

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COLEGIO OFICIAL INGENIEROS INDUSTRIALES
CASTELLÓN

Matías Martínez Segura
DIRECTOR

LIABILITY CLAUSES

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- The results contained in this report only refer to the material subjected to testing.
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- Electronically signed reports in digital form are considered to be an original document, as are copies electronic of it. Its printing on paper has no legal validity.
- The uncertainties have been evaluated according to recommendations of the document ISO/TAG5/WGE: June 95.
- The expanded uncertainties indicated in this report are based on a standard uncertainty multiplied by a coverage factor k=2 with a normal distribution provides a level of confidence of about 95 %.
- Laboratory "Sebastian Carpi" guarantees the confidentiality of the content of the present report.

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TEST REPORT

REQUESTED BY:	REVIGLASS, S.A.
ADDRESS:	Ctra. Tolosa – Azpeitia, km 8
LOCATION:	Bidania (Gipuzkoa)
REPORT NO:	61.743
ISSUE DATE:	28/01/2025
DATE OF RECEIPT OF SAMPLES:	16/01/2025
DATE TESTS CARRIED OUT:	16 – 28/01/2025
No. OF TILES SUPPLIED:	9 sheets (31cm x 31cm)
LABORATORY CODE:	25-009-1

Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation	
SUPPLIER:	-
MANUFACTURER:	-
SAMPLING:	-
DESCRIPTION OF THE SAMPLE:	Glass mosaic, 50 mm x 50 mm.
SAMPLE REFERENCE:	ALBATROS 5X5

TEST CARRIED OUT:

- UNE-EN-ISO 10545-3:2018	DETERMINATION OF WATER ABSORPTION
- UNE-EN-ISO 10545-5:1998	DETERMINATION OF IMPACT RESISTANCE BY MEASUREMENT OF COEFFICIENT OF RESTITUTION.
- UNE-EN-ISO 10545-7:1999	DETERMINATION OF RESISTANCE TO SURFACE ABRASION FOR GLAZED TILES.
- UNE-EN-ISO 10545-12:1997	DETERMINATION OF FROST RESISTANCE.
- UNE-EN-ISO 10545-13:2017	DETERMINATION OF CHEMICAL RESISTANCE.
- UNE-EN-ISO 10545-14:2015	DETERMINATION OF RESISTANCE TO STAINS.
- UNE-EN 16165:2022	DETERMINATION OF SLIP RESISTANCE OF PEDESTRIAN SURFACES. PENDULUM METHOD (Annex C and National Annex A).
- UNE 67-101/1M:1992	DETERMINATION OF SCRATCH HARDNESS ACCORDING TO MOHS.
- ANNEX:	PICTURE OF TESTED SAMPLE

ENSAYO ISO 17025 Nº15 / LE064

REPORT No: **61.743**
REQUESTED BY: **REVIGLASS, S.A.**
ISSUE DATE: **28/01/2025**
SAMPLE DESCRIPTION: **Glass mosaic, 50 mm x 50 mm.**
SAMPLE REFERENCE: **ALBATROS 5X5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE: **25-009-1**

DETERMINATION OF WATER ABSORPTION

*** Test carried out according to UNE-EN-ISO 10545 Part 3:2018.**

*** We have tested five specimens with two tiles per specimen**

*** Water absorption for each specimen:**

Specimen	Water absorption (E_v) (%)
1	0.1
2	0.0
3	0.0
4	0.1
5	0.0

*** Average water absorption of the sample: 0.0 %**

*** Measurement uncertainty: U = ± 0.1 % (k=2)**

*** Average value uncertainty: U = ± 0.1 % (k=2)**

REPORT No: **61.743**
REQUESTED BY: **REVIGLASS, S.A.**
ISSUE DATE: **28/01/2025**
SAMPLE DESCRIPTION: **Glass mosaic, 50 mm x 50 mm.**
SAMPLE REFERENCE: **ALBATROS 5X5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE: **25-009-1**

DETERMINATION OF IMPACT RESISTANCE BY MEASUREMENT OF COEFFICIENT OF RESTITUTION

* Test carried out according to UNE-EN-ISO 10545 Part 5:1998.

Test specimen	Coefficient of restitution
1	0.81
2	0.83
3	0.81
4	0.82
5	0.83

* Average coefficient of restitution: 0.82

* Measurement uncertainty: U = ± 0.04 (k=2)

* Observations: The test specimens are free from visible defects.

REPORT No:	**61.743**
REQUESTED BY:	**REVIGLASS, S.A.**
ISSUE DATE:	**28/01/2025**
SAMPLE DESCRIPTION:	**Glass mosaic, 50 mm x 50 mm.**
SAMPLE REFERENCE:	**ALBATROS 5X5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE:	**25-009-1**

DETERMINATION OF RESISTANCE TO SURFACE ABRASION

GLAZED TILES

*** Test carried out according to UNE-EN-ISO 10545 Part 7:1999.**

*** Classification: Class 3**

*** Abrasion stage at which visual failure occurred: 1.500 revolutions.**

REPORT No:	**61.743**
REQUESTED BY:	**REVIGLASS, S.A.**
ISSUE DATE:	**28/01/2025**
SAMPLE DESCRIPTION:	**Glass mosaic, 50 mm x 50 mm.**
SAMPLE REFERENCE:	**ALBATROS 5X5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE:	**25-009-1**

DETERMINATION OF FROST RESISTANCE

*** Test carried out according to UNE-EN-ISO 10545 Part 12:1997.**

*** Number of tiles tested: Thirty.**

*** Method used to impregnate the tiles: Impregnation with water at pressure below of the atmospheric pressure.**

*** The initial water content before the freeze-thaw test: E_1 = 0.0 % ± 0.1 % (k=2)**

*** The final water content after the freeze-thaw test: E_2 = 0.1 % ± 0.1 % (k=2)**

*** Number of damaged tiles after 100 cycles: Not-one.**

*** Description of defects after the freeze-thaw test: The tiles tested are free from visible defects.**

REPORT No: **61.743**
REQUESTED BY: **REVIGLASS, S.A.**
ISSUE DATE: **28/01/2025**
SAMPLE DESCRIPTION: **Glass mosaic, 50 mm x 50 mm.**
SAMPLE REFERENCE: **ALBATROS 5X5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE: **25-009-1**

DETERMINATION OF CHEMICAL RESISTANCE

*** Test carried out according to UNE-EN-ISO 10545 Part 13: 2017.**

*** Testing method: Partial immersion**

Test solutions	Classification			Visual Changes
	Specimen nº			
	1	2	3	
* Household chemicals				
- Ammonium Chloride (100 g/l)	A	A	A	No visible effects. Lines pencil removed
* Swimming pool salts				
- Sodium Hypochlorite (20 mg/l)	A	A	A	No visible effects. Lines pencil removed
* Acids and Alkalis (Low concentrations)				
- Hydrochloric Acid (3% v/v)	LA	LA	LA	No visible effects. Lines pencil removed
- Citric Acid (100 g/l)	LA	LA	LA	No visible effects. Lines pencil removed
- Potassium Hydroxide (30 g/l)	LA	LA	LA	No visible effects. Lines pencil removed
* Acids and Alkalis (High concentrations)				
- Hydrochloric Acid (18% v/v)	HA	HA	HA	No visible effects. Lines pencil removed
- Lactic Acid (5% v/v)	HA	HA	HA	No visible effects. Lines pencil removed
- Potassium Hydroxide (100 g/l)	HA	HA	HA	No visible effects. Lines pencil removed

REPORT No: 61.743
REQUESTED BY: REVIGLASS, S.A.
ISSUE DATE: 28/01/2025
SAMPLE DESCRIPTION: Glass mosaic, 50 mm x 50 mm.
SAMPLE REFERENCE: ALBATROS 5X5 – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE: 25-009-1

DETERMINATION OF RESISTANCE TO STAINS

* Test carried out according to UNE-EN-ISO 10545 Part 14:2015.

* Test carried out without abrasion.

Staining agents	Specimen					Cleaning procedure
	1	2	3	4	5	
* Stain having tracing action (Pastes) - Green staining agent in light oil....	5	5	5	5	5	Running hot water for five minutes. (Procedure A)
* Stain having chemical /oxidizing action - Iodine alcohol solution	5	5	5	5	5	Running hot water for five minutes. (Procedure A)
* Stain having filming action - Olive oil	5	5	5	5	5	Running hot water for five minutes. (Procedure A)

* Observations: The chromium oxide used as green staining agent has a grain size less than 80 microns, being the 50 % (m/m) of theirs down on 3 microns.

REPORT No: **61.743**
REQUESTED BY: **REVIGLASS, S.A.**
ISSUE DATE: **28/01/2025**
SAMPLE DESCRIPTION: **Glass mosaic, 50 mm x 50 mm.**
SAMPLE REFERENCE: **ALBATROS 5X5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE: **25-009-1**

DETERMINATION OF SLIP RESISTANCE OF PEDESTRIAN SURFACES PENDULUM METHOD. WET TEST

* Test performed after the UNE-EN 16165:2022 Annex C and National Annex A

Specimen	0º	45º	90º	Slip resistance ($PTV_{57} \equiv R_{d-57}$)
1	14	7	13	7
2	--	--	8	8
3	--	--	7	7
4	--	--	7	7
5	--	--	7	7

* Average slip resistance: $PTV_{57} \equiv R_{d-57} = 7$ (Class 0)

* Average value uncertainty: U = ± 4 (k=2)

* Observations.- The classification established on the SU1 document (Safety of fall risks) of the Technical Code of Building, approved to R.D. 732/2019 of December 20, is the next:

CLASSIFICATION OF FLOORS AFTER "SU1"	
Slip resistance (R_d)	Class
$R_d \leq 15$	Class 0
$15 < R_d \leq 35$	Class 1
$35 < R_d \leq 45$	Class 2
$R_d > 45$	Class 3

REPORT No: **61.743**
REQUESTED BY: **REVIGLASS, S.A.**
ISSUE DATE: **28/01/2025**
SAMPLE DESCRIPTION: **Glass mosaic, 50 mm x 50 mm.**
SAMPLE REFERENCE: **ALBATROS 5X5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE: **25-009-1**

DETERMINATION OF SCRATCH HARDNESS ACCORDING TO MOHS

*** Test carried out according to UNE 67-101:1985 y UNE 67-101/1M:1992) (*)**

Tile	Mohs hardness
1	3
2	3
3	3



(*) Note: These standards are cancelled since 18.03.2009.

LABORATORIO SEBASTIAN CARPI

REPORT No: **61.743**
REQUESTED BY: **REVIGLASS, S.A.**
ISSUE DATE: **28/01/2025**
SAMPLE DESCRIPTION: **Glass mosaic, 50 mm x 50 mm.**
SAMPLE REFERENCE: **ALBATROS 5X5** – (Information provided by the client. The laboratory is not responsible for this information, being outside the scope of accreditation)
LABORATORY CODE: **25-009-1**

ANNEX: PICTURE OF TESTED SAMPLE



Colour and tone are only approximated.

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COLEGIO OFICIAL INGENIEROS INDUSTRIALES
CASTELLÓN

Matías Martínez Segura
DIRECTOR

LIABILITY CLAUSES

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- The uncertainties have been evaluated according to recommendations of the document ISO/TAG5/WGE: June 95.
- The expanded uncertainties indicated in this report are based on a standard uncertainty multiplied by a coverage factor k=2 with a normal distribution provides a level of confidence of about 95 %.
- Laboratory "Sebastian Carpi" guarantees the confidentiality of the content of the present report.