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|-------|-------------------------------------|------------------------------------|-------------------------------------|----------------------------------|-----------------------------------|--------------------------------|---------------------------------|--------------------------------|
| Sizes | 120x278 cm 47 ¼"x109 ½" ⚡ 6mm | 120x120 cm 47 ¼"x47 ¼" ⚡ 9mm | 120x120 cm 47 ¼"x47 ¼" ⚡ 20mm | 60x120 cm 23½"x47 ¼" ⚡ 9mm | 60x120 cm 23½"x47 ¼" ⚡ 20mm | 60x60 cm 23½"x23½" ⚡ 9mm | 60x60 cm 23½"x23½" ⚡ 20mm | 30x60 cm 11¾"x23½" ⚡ 9mm |
|-------|-------------------------------------|------------------------------------|-------------------------------------|----------------------------------|-----------------------------------|--------------------------------|---------------------------------|--------------------------------|

| | | Technical features | Test method | Requisites for nominal size N | | | GHIAIA | | | | | |
|-----------------------------|--|--|--|---|--|--|--------------------------------|---------------------|----------------|---------------------------------|---------------------------------|--|
| | | | | 7 cm ≤ N < 15 cm | N ≥ 15 cm | | Matte rectified 6mm 120x278 cm | Matte rectified 9mm | Grip rectified | Textured rectified | Outdoor rectified | |
| | | | | (mm) | (%) | (mm) | | | | | | |
| Regularity features | | Length and width | ISO 10545-2 | ± 0,9 (*) Non-rect. ± 0,4 (*) Rect. | ± 0,6 (*) Non-rect. ± 0,3 (*) Rect. | ± 2,0 (*) Non-rect. ± 1,0 (*) Rect. | Suitable for | Suitable for | Suitable for | Suitable for | Suitable for | |
| | | Thickness | | ± 0,5 (**) | ± 5 (**) | ± 0,5 (**) | Suitable for | Suitable for | Suitable for | Suitable for | Suitable for | |
| | | Straightness of sides | | ± 0,8 (***) Non-rect. ± 0,4 (***) Rect. | ± 0,5 (***) Non-rect. ± 0,3 (***) Rect. | ± 1,5 (***) Non-rect. ± 0,8 (***) Rect. | Suitable for | Suitable for | Suitable for | Suitable for | Suitable for | |
| | | Perpendicularity (Measurement only on short edges when L/l ≥ 3) | | ± 0,8 (***) Non-rect. ± 0,4 (***) Rect. | ± 0,5 (***) Non-rect. ± 0,3 (***) Rect. | ± 2,0 (***) Non-rect. ± 1,5 (***) Rect. | Suitable for | Suitable for | Suitable for | Suitable for | Suitable for | |
| | | Surface flatness | | c.c. ± 0,8 Non-rect. c.c. ± 0,6 Rect. | c.c. ± 0,5 Non-rect. c.c. ± 0,4 Rect. | c.c. ± 2,0 Non-rect. c.c. ± 1,8 Rect. | Suitable for | Suitable for | Suitable for | Suitable for | Suitable for | |
| | | | | e.c. ± 0,8 Non-rect. e.c. ± 0,6 Rect. | e.c. ± 0,5 Non-rect. e.c. ± 0,4 Rect. | e.c. ± 2,0 Non-rect. e.c. ± 1,8 Rect. | | | | | | |
| | | | | w. ± 0,8 Non-rect. w. ± 0,6 Rect. | w. ± 0,5 Non-rect. w. ± 0,4 Rect. | w. ± 2,0 Non-rect. w. ± 1,8 Rect. | | | | | | |
| Structural features | | Water absorption level (in% by mass) | ISO 10545-3 | E ≤ 0,5% Individual Maximum 0,6% | | | ≤0.1% | ≤0.1% | ≤0.1% | ≤0.1% | ≤0.1% | |
| | | ASTM C373-18 | Requirement ANSI A137.1-2017 Water Absorption Max < 0,5% | | | ≤0.5% | ≤0.5% | ≤0.5% | ≤0.5% | ≤0.5% | | |
| Bulk mechanical features | | Breaking strenght | ISO 10545-4 | S ≥ 700N (for thickness < 7,5mm) S ≥ 1300N (for thickness ≥ 7,5mm) | | | S ≥1000 N | S ≥1500 N | S ≥1500 N | S ≥10000 N | S ≥10000 N | |
| | | Bending resistance | | R ≥ 35 N/mm² | | | R ≥40 N/mm² | R ≥40 N/mm² | R ≥40 N/mm² | R ≥45 N/mm² | R ≥45 N/mm² | |
| | | Bending and breaking load resistance ⁽⁴⁾ / ₍₅₎ | EN 1339 Annex F | - | | | | | | ≥T11 120x120 90x90 ≥U4 60x120 | ≥T11 120x120 90x90 ≥U4 60x120 | |
| | | Impact resistance | ISO 10545-5 | Declared value | | | ≥0.55 | ≥0.55 | ≥0.55 | ≥0.55 | ≥0.55 | |
| Surface mechanical features | | Deep abrasion resistance of unglazed tiles | ISO 10545-6 | ≤ 175 mm³ | | | ≤150mm³ | ≤150mm³ | ≤150mm³ | ≤150mm³ | ≤150mm³ | |

* Permitted deviation, in % or mm, from the average size of each tile (2 or 4 sides) with respect to the manufacturing size (W).

** Permitted deviation, in % or mm, from the average thickness of each tile with respect to the cited manufacturing thickness (W).

*** Maximum permitted straightness deviation, in % or mm, with respect to the corresponding manufacturing sizes (W).

**** Maximum permitted perpendicularity deviation, in % or mm, with respect to the corresponding manufacturing sizes (W).

**** Maximum permitted centre curvature deviation, in % or mm, with respect to the diagonal calculated according to manufacturing sizes (W).

e.c. Maximum permitted corner curvature deviation, in % or mm, with respect to the corresponding manufacturing sizes (W).

w. Maximum permitted bending deviation, in % or mm, with respect to the diagonal calculated according to manufacturing sizes (W).

(1) Determining the slip resistance of pedestrian surfaces; not applicable to sports flooring or road traffic flooring.







(2) The anti-slip performance is guaranteed at the time of delivering the product.

(3) However, tiles with a DCOF of 0.42 or greater are not necessarily suitable for all projects. The specifier shall determine tiles appropriate for specific project conditions, considering by way of example, but not in limitation, type of use, traffic, expected contaminants, expected maintenance, expected wear, and manufacturers' guidelines and recommendations."

(4) For further details, please refer to the outdoor design general catalogue.

(5) Only for products with 20 mm thickness

| | | | | | | | | |
|-------|-------------------------------------|------------------------------------|-------------------------------------|----------------------------------|-----------------------------------|--------------------------------|---------------------------------|--------------------------------|
| Sizes | 120x278 cm 47 ¼"x109 ½" ⚡ 6mm | 120x120 cm 47 ¼"x47 ¼" ⚡ 9mm | 120x120 cm 47 ¼"x47 ¼" ⚡ 20mm | 60x120 cm 23¾"x47 ¼" ⚡ 9mm | 60x120 cm 23¾"x47 ¼" ⚡ 20mm | 60x60 cm 23¾"x23¾" ⚡ 9mm | 60x60 cm 23¾"x23¾" ⚡ 20mm | 30x60 cm 11¾"x23¾" ⚡ 9mm |
|-------|-------------------------------------|------------------------------------|-------------------------------------|----------------------------------|-----------------------------------|--------------------------------|---------------------------------|--------------------------------|

| | | Technical features | Test method | Requisites for nominal size N | | | GHIAIA MIX | | | | |
|-----------------------------|---|---|-----------------|---|--|--|---------------------|---------------------|----------------|---|--|
| | | | | 7 cm ≤ N < 15 cm | N ≥ 15 cm | | Matte rectified 6mm | Matte rectified 9mm | Grip rectified | Outdoor rectified | |
| | | | | (mm) | (%) | (mm) | | | | | |
| Regularity features |  | Length and width | ISO 10545-2 | ± 0,9 (*) Non-rect. ± 0,4 (*) Rect. | ± 0,6 (*) Non-rect. ± 0,3 (*) Rect. | ± 2,0 (*) Non-rect. ± 1,0 (*) Rect. | Suitable for | Suitable for | Suitable for | Suitable for | |
| | | Thickness | | ± 0,5 (**) | ± 5 (**) | ± 0,5 (**) | Suitable for | Suitable for | Suitable for | Suitable for | |
| | | Straightness of sides | | ± 0,8 (***) Non-rect. ± 0,4 (***) Rect. | ± 0,5 (***) Non-rect. ± 0,3 (***) Rect. | ± 1,5 (***) Non-rect. ± 0,8 (***) Rect. | Suitable for | Suitable for | Suitable for | Suitable for | |
| | | Perpendicularity (Measurement only on short edges when L/l ≥ 3) | | ± 0,8 (***) Non-rect. ± 0,4 (***) Rect. | ± 0,5 (***) Non-rect. ± 0,3 (***) Rect. | ± 2,0 (***) Non-rect. ± 1,5 (***) Rect. | Suitable for | Suitable for | Suitable for | Suitable for | |
| |  | Surface flatness | | c.c. ± 0,8 Non-rect. c.c. ± 0,6 Rect. | c.c. ± 0,5 Non-rect. c.c. ± 0,4 Rect. | c.c. ± 2,0 Non-rect. c.c. ± 1,8 Rect. | Suitable for | Suitable for | Suitable for | Suitable for | |
| | | | | e.c. ± 0,8 Non-rect. e.c. ± 0,6 Rect. | e.c. ± 0,5 Non-rect. e.c. ± 0,4 Rect. | e.c. ± 2,0 Non-rect. e.c. ± 1,8 Rect. | | | | | |
| | | | | w. ± 0,8 Non-rect. w. ± 0,6 Rect. | w. ± 0,5 Non-rect. w. ± 0,4 Rect. | w. ± 2,0 Non-rect. w. ± 1,8 Rect. | | | | | |
| Structural features |  | Water absorption level (in% by mass) | ISO 10545-3 | E ≤ 0,5% Individual Maximum 0,6% | | | ≤0.1% | ≤0.1% | ≤0.1% | ≤0.1% | |
| | | | ASTM C373-18 | Requirement ANSI A137.1-2017 Water Absorption Max < 0,5% | | | ≤0.5% | ≤0.5% | ≤0.5% | ≤0.5% | |
| Bulk mechanical features |  | Breaking strenght | ISO 10545-4 | S ≥ 700N (for thickness < 7,5mm) S ≥ 1300N (for thickness ≥ 7,5mm) | | | S ≥1000 N | S ≥1500 N | S ≥1500 N | S ≥10000 N | |
| | | Bending resistance | | R ≥ 35 N/mm² | | | R ≥40 N/mm² | R ≥40 N/mm² | R ≥40 N/mm² | R ≥45 N/mm² | |
| | | Bending and breaking load resistance (4)/(5) | EN 1339 Annex F | - | | | | | | ≥T11 120x120 90X90 ≥U4 60x120 | |
| |  | Impact resistance | ISO 10545-5 | Declared value | | | ≥0.55 | ≥0.55 | ≥0.55 | ≥0.55 | |
| Surface mechanical features |  | Deep abrasion resistance of unglazed tiles | ISO 10545-6 | ≤ 175 mm³ | | | ≤150mm³ | ≤150mm³ | ≤150mm³ | ≤150mm³ | |

* Permitted deviation, in % or mm, from the average size of each tile (2 or 4 sides) with respect to the manufacturing size (W).

** Permitted deviation, in % or mm, from the average thickness of each tile with respect to the cited manufacturing thickness (W).

*** Maximum permitted straightness deviation, in % or mm, with respect to the corresponding manufacturing sizes (W).

**** Maximum permitted perpendicularity deviation, in % or mm, with respect to the corresponding manufacturing sizes (W).

**** Maximum permitted centre curvature deviation, in % or mm, with respect to the diagonal calculated according to manufacturing sizes (W).

e.c. Maximum permitted corner curvature deviation, in % or mm, with respect to the corresponding manufacturing sizes (W).

w. Maximum permitted bending deviation, in % or mm, with respect to the diagonal calculated according to manufacturing sizes (W).

(1) Determining the slip resistance of pedestrian surfaces; not applicable to sports flooring or road traffic flooring.










(2) The anti-slip performance is guaranteed at the time of delivering the product.

(3) However, tiles with a DCOF of 0.42 or greater are not necessarily suitable for all projects. The specifier shall determine tiles appropriate for specific project conditions, considering by way of example, but not in limitation, type of use, traffic, expected contaminants, expected maintenance, expected wear, and manufacturers' guidelines and recommendations."

(4) For further details, please refer to the outdoor design general catalogue.

(5) Only for products with 20 mm thickness

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| Sizes | 120x278 cm 47 ¼"x109 ½" ⌘ 6mm | 120x120 cm 47 ¼"x47 ¼" ⌘ 9mm | 120x120 cm 47 ¼"x47 ¼" ⌘ 20mm | 60x120 cm 23½"x47 ¼" ⌘ 9mm | 60x120 cm 23½"x47 ¼" ⌘ 20mm | 60x60 cm 23½"x23½" ⌘ 9mm | 60x60 cm 23½"x23½" ⌘ 20mm | 30x60 cm 11¾"x23½" ⌘ 9mm |
|-------|-------------------------------------|------------------------------------|-------------------------------------|----------------------------------|-----------------------------------|--------------------------------|---------------------------------|--------------------------------|

| | | Technical features | Test method | Requisites for nominal size N | | | GHIAIA MIX | | | |
|-------------------------------------|---|---|---|--|-----|-----------|--------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| | | | | 7 cm ≤ N < 15 cm | | N ≥ 15 cm | Matte rectified 6mm 120x278 cm | Matte rectified 9mm | Grip rectified | Outdoor rectified |
| | | | | (mm) | (%) | (mm) | | | | |
| Thermo- igrometric features |  | Coefficient of linear thermal expansion | ISO 10545-8 | Declared value | | | ≤7MK ⁻¹ | ≤7MK ⁻¹ | ≤7MK ⁻¹ | ≤7MK ⁻¹ |
| |  | Thermal shock resistance | ISO 10545-9 | Test passed in accordance with ISO 10545-1 | | | Resistant | Resistant | Resistant | Resistant |
| |  | Moisture expansion (in mm/m) | ISO 10545-10 | Declared value | | | ≤0.01% (0.1mm/m) | ≤0.01% (0.1mm/m) | ≤0.01% (0.1mm/m) | ≤0.01% (0.1mm/m) |
| |  | Frost resistance | ISO 10545-12 | Test passed in accordance with ISO 10545-1 | | | Resistant | Resistant | Resistant | Resistant |
| Physical properties |  | Bond strenght | EN 1348 | Declared value | | | ≥1.0 N/mm² (Class C2 - EN 12004) | ≥1.0 N/mm² (Class C2 - EN 12004) | ≥1.0 N/mm² (Class C2 - EN 12004) | ≥1.0 N/mm² (Class C2 - EN 12004) |
| |  | Reaction to fire | - | Class A1 or A1 _{fl} | | | A1 - A1 _{fl} | A1 - A1 _{fl} | A1 - A1 _{fl} | A1 - A1 _{fl} |
| Chemical features |  | Resistance to household chemicals and swimming pool salts | ISO 10545-13 | Minimum B class | | | A | A | A | A |
| | | Resistance to low concentrations of acids and alkalis | | Declared class | | | LA | LA | LA | LA |
| | | Resistance to high concentrations of acids and alkalis | | Declared class | | | HA | HA | HA | HA |
| |  | Stain resistance | ISO 10545-14 | Declared class | | | 5 | 5 | 5 | 5 |
| Safety characteristics (1)(2) |  | Booted ramp test | DIN EN 16165 ANNEX B (EX DIN 51130) | Declared class | | | R9 | R10 | R11 | R11 |
| | | Barefoot Ramp test | DIN EN 16165 ANNEX A (EX DIN 51097) | Declared value | | | A | A+B | A+B+C | A+B+C |
| | | Pendulum friction Test | BS EN 16165 ANNEX C (EX BS 7976) | PTV ≥ 36 classifies the surface as "low slip risk" | | | PTV ≥ 36 Wet on demand | ≥36Dry ≥36Wet | ≥36Dry ≥36Wet | ≥36Dry ≥36Wet |
| | | | AS 4586 | Declared Classification of the new pedestrian surface materials according to the Pendulum Test | | | P3 on demand | Class P3 | Class P4 | Class P4 |
| | | | UNE 41901 EX:2017 | Declared value | | | C2 on demand | Class C2 | Class C3 | Class C3 |
| | | Coefficient of friction | B.C.R.A. Rep. CEC/81 | Min. Dec. 236/89 of 14/06/89 μ >0.40 for a sliding leather element on a dry floor μ >0.40 for a sliding hard rubber element on a wet floor | | | >0.40Asciutto >0.40Bagnato | >0.40Asciutto >0.40Bagnato | >0.40Asciutto >0.40Bagnato | >0.40Asciutto >0.40Bagnato |
| | | Dynamic coefficient of friction (DCOF) | ANSI A 326.3 | - | | | Wet DCOF ≥ 0.42 | Wet DCOF ≥ 0.50 | Wet DCOF ≥ 0.55 | Wet DCOF ≥ 0.55 |

* Permitted deviation, in % or mm, from the average size of each tile (2 or 4 sides) with respect to the manufacturing size (W).

** Permitted deviation, in % or mm, from the average thickness of each tile with respect to the cited manufacturing thickness (W).

*** Maximum permitted straightness deviation, in % or mm, with respect to the corresponding manufacturing sizes (W).

**** Maximum permitted perpendicularity deviation, in % or mm, with respect to the corresponding manufacturing sizes (W).

***** Maximum permitted centre curvature deviation, in % or mm, with respect to the diagonal calculated according to manufacturing sizes (W).

e.c. Maximum permitted corner curvature deviation, in % or mm, with respect to the corresponding manufacturing sizes (W).

w. Maximum permitted bending deviation, in % or mm, with respect to the diagonal calculated according to manufacturing sizes (W).

(1) Determining the slip resistance of pedestrian surfaces; not applicable to sports flooring or road traffic flooring.

(2) The anti-slip performance is guaranteed at the time of delivering the product.

(3) However, tiles with a DCOF of 0.42 or greater are not necessarily suitable for all projects. The specifier shall determine tiles appropriate for specific project conditions, considering by way of example, but not in limitation, type of use, traffic, expected contaminants, expected maintenance, expected wear, and manufacturers' guidelines and recommendations."

(4) For further details, please refer to the outdoor design general catalogue.

(5) Only for products with 20 mm thickness



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|-------|-------------------------------------|
| Sizes | 40x80 cm 15 1/4"x31 1/2" ± 8.5mm |
|-------|-------------------------------------|

| | | Technical features | Test method | Requisites for nominal size N | | | 3D Wall | |
|----------------------------|--|---|--------------|--|-------------------|-------------------|----------------------------------|--|
| | | | | 7 cm ≤ N < 15 cm | N ≥ 15 cm | | Matte rectified | |
| | | | | (mm) | (%) | (mm) | | |
| Regularity features | | Length and width | ISO 10545-2 | ± 0,4 (*) Rect. | ± 0,3 (*) Rect. | ± 1,0 (*) Rect. | Suitable for | |
| | | Thickness | | ± 0,5 (**) | ± 10 (**) | ± 0,5 (**) | Suitable for | |
| | | Straightness of sides | | ± 0,4 (***) Rect. | ± 0,3 (***) Rect. | ± 0,8 (***) Rect. | Suitable for | |
| | | Perpendicularity | | ± 0,4 (***) Rect. | ± 0,3 (***) Rect. | ± 1,5 (***) Rect. | Suitable for | |
| | | Surface flatness | | c.c. ± 0,6 Rect. | c.c. ± 0,4 Rect. | c.c. ± 1,8 Rect. | Not applicable | |
| | | | | e.c. ± 0,6 Rect. | e.c. ± 0,4 Rect. | e.c. ± 1,8 Rect. | | |
| | | | | w. ± 0,6 Rect. | w. ± 0,4 Rect. | w. ± 1,8 Rect. | | |
| Structural features | | Water absorption level (in% by mass) | ISO 10545-3 | Average >10%. If this value > 20%, it must be indicated. Single value > 9% | | | 10%<EV≤20% | |
| Bulk mechanical features | | Breaking strenght | ISO 10545-4 | S ≥ 600N | | | S ≥600 N | |
| | | Bending resistance | | R ≥ 12 N/mm² | | | R ≥15 N/mm² | |
| Thermo-igrometric features | | Coefficient of linear thermal expansion | ISO 10545-8 | Declared value | | | ≤7MK ⁻¹ | |
| | | Thermal shock resistance | ISO 10545-9 | Test passed in accordance with ISO 10545-1 | | | Resistant | |
| | | Moisture expansion (in mm/m) | ISO 10545-10 | Declared value | | | ≤0.06% (0.6mm/m) | |
| | | Crazing resistance: glazed tiles | ISO 10545-11 | Test passed in accordance with ISO 10545-1 | | | Resistant | |
| Physical properties | | Bond strenght | EN 1348 | Declared value | | | ≥1.0 N/mm² (Class C2 - EN 12004) | |
| | | Reaction to fire | - | Class A1 | | | A1 | |
| Chemical features | | Resistance to household chemicals and swimming pool salts | ISO 10545-13 | Minimum B class | | | A | |
| | | Resistance to low concentrations of acids and alkalis | | Declared class | | | LA | |
| | | Resistance to high concentrations of acids and alkalis | | Declared class | | | HA | |
| | | Stain resistance of glazed tiles | ISO 10545-14 | Minimum Class 3 | | | 5 | |
| | | Release of dangerous substances: Cadmium (in mg/dm2) and Lead (in mg/dm2) | ISO 10545-15 | Declared value | | | ≤0.01mg/dm2 Cd ≤0.1mg/dm2 Pb | |

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*** Maximum permitted straightness deviation, in % or mm, with respect to the corresponding manufacturing sizes (W).
**** Maximum permitted perpendicularity deviation, in % or mm, with respect to the corresponding manufacturing sizes (W).
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e.c. Maximum permitted corner curvature deviation, in % or mm, with respect to the corresponding manufacturing sizes (W).
w. Maximum permitted bending deviation, in % or mm, with respect to the diagonal calculated according to manufacturing sizes (W).
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(2) The anti-slip performance is guaranteed at the time of delivering the product.
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