



| Sizes                      |   | 40x80 cm 15 1/4"x31 1/2"<br>± 8.5mm |  | 40x80 cm 15 1/4"x31 1/2"<br>± 10mm |                   |   |   |
|----------------------------|---|-------------------------------------|--|------------------------------------|-------------------|---|---|
|                            | Technical features  | Test method                         | Requisites for nominal size N  |                                    |                   | Lims  |   |
|                            |   |                                     | 7 cm ≤ N < 15 cm<br>(mm)   | N ≥ 15 cm<br>(%) (mm)              |                   | Matte rectified 8.5mm 40x80 cm                          | Matte rectified 10mm 40x80 cm                           |
| Regularity features        | <br>Length and width<br>Thickness<br>Straightness of sides<br>Perpendicularity                          | ISO 10545-2                         | ± 0,4 (*) Rect.  | ± 0,3 (*) Rect.                    | ± 1,0 (*) Rect.   | Suitable for  | Suitable for  |
|                            |   |                                     | ± 0,5 (**)   | ± 10 (**)                          | ± 0,5 (**)        | Suitable for  | Suitable for  |
|                            |   |                                     | ± 0,4 (***) Rect.  | ± 0,3 (***) Rect.                  | ± 0,8 (***) Rect. | Suitable for  | Suitable for  |
|                            |   |                                     | ± 0,4 (***) Rect.  | ± 0,3 (***) Rect.                  | ± 1,5 (***) Rect. | Suitable for  | Suitable for  |
|                            | <br>Surface flatness  |                                     | c.c. ± 0,6 Rect.   | c.c. ± 0,4 Rect.                   | c.c. ± 1,8 Rect.  | Suitable for  | 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        | <br>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%  | 10%<EV≤20%  |
| Bulk mechanical features   | <br>Breaking strenght   | ISO 10545-4                         | S ≥ 600N   |                                    |                   | S ≥600 N  | S ≥600 N  |
|                            | <br>Bending resistance  |                                     | R ≥ 12 N/mm <sup>2</sup>   |                                    |                   | R ≥15 N/mm <sup>2</sup>                                 | R ≥15 N/mm <sup>2</sup>                                 |
| Thermo-igrometric features | <br>Coefficient of linear thermal expansion   | ISO 10545-8                         | Declared value   |                                    |                   | ≤7MK <sup>-1</sup>                                      | ≤7MK <sup>-1</sup>                                      |
|                            | <br>Thermal shock resistance  | ISO 10545-9                         | Test passed in accordance with ISO 10545-1                                 |                                    |                   | Resistant   | Resistant   |
|                            | <br>Moisture expansion (in mm/m)  | ISO 10545-10                        | Declared value   |                                    |                   | ≤0.06% (0.6mm/m)  | ≤0.06% (0.6mm/m)  |
|                            | <br>Craziing resistance: glazed tiles   | ISO 10545-11                        | Test passed in accordance with ISO 10545-1                                 |                                    |                   | Resistant   | Resistant   |
| Physical properties        | <br>Bond strenght   | EN 1348                             | Declared value   |                                    |                   | ≥1.0 N/mm <sup>2</sup> (Class C2 - EN 12004)            | ≥1.0 N/mm <sup>2</sup> (Class C2 - EN 12004)            |
|                            | <br>Reaction to fire  | -                                   | Class A1   |                                    |                   | A1  | A1  |
| Chemical features          | <br>Resistance to household chemicals and swimming pool salts   | ISO 10545-13                        | Minimum B class  |                                    |                   | A   | A   |
|                            | <br>Resistance to low concentrations of acids and alkalis   |                                     | Declared class   |                                    |                   | LA  | LA  |
|                            | <br>Resistance to high concentrations of acids and alkalis  |                                     | Declared class   |                                    |                   | HA  | HA  |
|                            | <br>Stain resistance of glazed tiles  | ISO 10545-14                        | Minimum Class 3  |                                    |                   | 5   | 5   |
|                            | <br>Release of dangerous substances: Cadmium (in mg/dm <sup>2</sup> ) and Lead (in mg/dm <sup>2</sup> ) | ISO 10545-15                        | Declared value   |                                    |                   | ≤0.01mg/dm <sup>2</sup> Cd<br>≤0.1mg/dm <sup>2</sup> Pb | ≤0.01mg/dm <sup>2</sup> Cd<br>≤0.1mg/dm <sup>2</sup> Pb |

\* 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 1/4"x109 1/2"<br>±6mm | 120x120 cm 47 1/4"x47 1/4"<br>±9mm | 75x150 cm 29 1/2"x59"<br>±9mm | 75x75 cm 29 1/2"x29 1/2"<br>±9mm | 60x120 cm 23 3/4"x47 1/4"<br>±20mm | 60x60 cm 23 3/4"x23 3/4"<br>±20mm | 37,5x75 cm 14 3/4"x29 1/2"<br>±9mm |
|-------|-------------------------------------|------------------------------------|-------------------------------|----------------------------------|------------------------------------|-----------------------------------|------------------------------------|

|                             | Technical features  | Test method     | Requisites for nominal size N   |   |   | Lims                           |                          |                          |  |
|-----------------------------|---|-----------------|---|---|---|--------------------------------|--------------------------|--------------------------|--|
|                             |   |                 | 7 cm ≤ N < 15 cm  |   | N ≥ 15 cm                               | Matte rectified 6mm 120x278 cm | Matte rectified 9mm      | Grip rectified           | Textured rectified   |
|                             |   |                 | (mm)  | (%)                                     | (mm)                                    |                                |                          |                          |  |
| Regularity features         | <br>Length and width<br>Thickness<br>Straightness of sides<br>Perpendicularity (Measurement only on short edges when L/l ≥ 3) | 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   |
|                             |   |                 | ± 0,5 (**)  | ± 5 (**)                                | ± 0,5 (**)                              | Suitable for                   | Suitable for             | Suitable for             | Suitable for   |
|                             |   |                 | ± 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   |
|                             |   |                 | ± 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   |
|                             | <br>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.   |                                |                          |                          |  |
| Structural features         | <br>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    | <br>Breaking strenght<br>Bending resistance   | ISO 10545-4     | S ≥ 700N (for thickness < 7,5mm)<br>S ≥ 1300N (for thickness ≥ 7,5mm) |   |   | S ≥ 1000 N                     | S ≥ 1500 N               | S ≥ 1500 N               | S ≥ 10000 N  |
|                             |   |                 | R ≥ 35 N/mm <sup>2</sup>  |   |   | R ≥ 40 N/mm <sup>2</sup>       | R ≥ 40 N/mm <sup>2</sup> | R ≥ 40 N/mm <sup>2</sup> | R ≥ 45 N/mm <sup>2</sup>   |
|                             | <br>Bending and breaking load resistance (4)(5)   | EN 1339 Annex F | -   |   |   |                                |                          |                          | ≥T11<br>120x120<br>60x60<br>22,5x22,5<br>  ≥U4<br>60x90<br>22,5x45,4 |
|                             |   |                 | -   |   |   |                                |                          |                          |  |
| Surface mechanical features | <br>Mohs hardness<br><br>Deep abrasion resistance of unglazed tiles   | EN 101          | -   |   |   | MOHS 6                         | MOHS 6                   | MOHS 8                   | MOHS 8   |
|                             |   | ISO 10545-6     | ≤ 175 mm <sup>3</sup>   |   |   | ≤150mm <sup>3</sup>            | ≤150mm <sup>3</sup>      | ≤150mm <sup>3</sup>      | ≤150mm <sup>3</sup>  |

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| Sizes | 120x278 cm 47 1/4"x109 1/2"<br>6mm | 120x120 cm 47 1/4"x47 1/4"<br>9mm | 75x150 cm 29 1/2"x59"<br>9mm | 75x75 cm 29 1/2"x29 1/2"<br>9mm | 60x120 cm 23 3/8"x47 1/4"<br>20mm | 60x60 cm 23 3/8"x23 3/8"<br>20mm | 37,5x75 cm 14 3/4"x29 1/2"<br>9mm |
|-------|------------------------------------|-----------------------------------|------------------------------|---------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
|-------|------------------------------------|-----------------------------------|------------------------------|---------------------------------|-----------------------------------|----------------------------------|-----------------------------------|

|  |              | Technical features  | Test method          | Requisites for nominal size N  |            |              | Lims  |   |   |   |
|--|--------------|---|----------------------|--|------------|--------------|---|---|---|---|
|  |              |   |                      | 7 cm ≤ N < 15 cm   |            | N ≥ 15 cm    | Matte rectified<br>6mm<br>120x278 cm            | Matte rectified<br>9mm                          | Grip rectified                                  | Textured<br>rectified                           |
|  |              |   |                      | (mm)   |            | (%)          |   |   |   |   |
| Thermo-<br>igrometric<br>features      |              | Coefficient of linear thermal expansion   | ISO 10545-8          | Declared value   |            |              | ≤7MK <sup>-1</sup>                              | ≤7MK <sup>-1</sup>                              | ≤7MK <sup>-1</sup>                              | ≤7MK <sup>-1</sup>                              |
|  |              | 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%<br>(0.1mm/m)                             | ≤0.01%<br>(0.1mm/m)                             | ≤0.01%<br>(0.1mm/m)                             | ≤0.01%<br>(0.1mm/m)                             |
|  |              | Frost resistance  | ISO 10545-12         | Test passed in accordance with ISO 10545-1   |            |              | Resistant                                       | Resistant                                       | Resistant                                       | Resistant                                       |
| Physical<br>properties                 |              | Bond strenght   | EN 1348              | Declared value   |            |              | ≥1.0 N/mm <sup>2</sup><br>(Class C2 - EN 12004) | ≥1.0 N/mm <sup>2</sup><br>(Class C2 - EN 12004) | ≥1.0 N/mm <sup>2</sup><br>(Class C2 - EN 12004) | ≥1.0 N/mm <sup>2</sup><br>(Class C2 - EN 12004) |
|  |              | Reaction to fire  | -                    | Class A1 or A1 <sub>fl</sub>   |            |              | A1 - A1 <sub>fl</sub>                           | A1 - A1 <sub>fl</sub>                           | A1 - A1 <sub>fl</sub>                           | A1 - A1 <sub>fl</sub>                           |
| Chemical<br>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<br>characteristics<br>(1)(2)    |              | Booted ramp test  | DIN 51130            | Declared class   |            |              | R9  | R10   | R11   | R11   |
|  |              | Barefoot Ramp test  | DIN 51097            | Declared value   |            |              | A   | A+B   | A+B+C   | A+B+C   |
|  |              | Pendulum friction Test  | BS 7976              | PTV ≥ 36 classifies the surface as "low slip risk"   |            |              | PTV ≥ 36 Wet on demand                          | ≥36Dry<br>≥36Wet                                | ≥36Dry<br>≥36Wet                                | ≥36Dry<br>≥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-ENV 12633<br>UNE 41901:2017 EX  | 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<br>μ >0.40 for a sliding leather element on a dry floor<br>μ >0.40 for a sliding hard rubber element on a wet floor |            |              | >0.40Asciutto<br>>0.40Bagnato                   | >0.40Asciutto<br>>0.40Bagnato                   | >0.40Asciutto<br>>0.40Bagnato                   | >0.40Asciutto<br>>0.40Bagnato                   |
| Dynamic coefficient of friction (DCOF) | ANSI A.137.1 | ANSI A.137.1-2017<br>Requires a minimum value of 0.42 for level interior space expected to be walked upon when wet. (3) |                      |  | > 0.42 Wet | > 0.42 Wet   | > 0.42 Wet                                      | > 0.42 Wet                                      |   |   |

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