

OPUS ROMANO - OPUS ROMANO MATT

OPUS ROMANO

| 1.a | DESCRIPTION |
|-----|---|
| | Sintered glass enamel mosaic of square tesserae, facial dimension of 12x12 mm (1/2" x 1/2"), with a thickness of 4 mm (5/32"), mounted on sheets of paper. The mosaic contains pre- and post-consumer recycled material: for further information, see section 9. |

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| 1.b | DESCRIPTION |
|-----|---|
| | Sintered glass enamel mosaic of square tesserae, facial dimension of 12x12 mm (1/2" x 1/2"), with a thickness of 4 mm (5/32"), mounted on sheets of paper; in the MATT version the tiles are opaque and non-slip. The treatment is performed during the production process. The mosaic contains pre- and post-consumer recycled material: for further information, see section 9. |

OPUS ROMANO

| 2.a | APPLICATIONS | |
|----------|---|---|
| A | INTERIOR WALLS | Walls and ceilings in general, of any shape and size |
| B | FLOORS | Floor coverings that are subject to severe pedestrian traffic over sustained periods with some scratching dirt (for example public areas such as shopping centres, airport concourses, hotel foyers). |
| C | <ul style="list-style-type: none"> - EXTERNAL WALLS - SWIMMING POOLS - HUMID ENVIRONMENTS (shower, bio sauna, spa, etc.) | All the colours are suitable for these environments, excluding White Gold mosaic (ORO 12.6) |

OPUS ROMANO MATT

| 2.b | APPLICATIONS | |
|----------|--|---|
| A | INTERIOR WALLS | Walls and ceilings in general, of any shape and size |
| B | FLOORS only the 24 standard colours* | Floors for residential and commercial areas, such as offices, receptions, shops and bathrooms. Not recommended for high traffic walkways in public areas. |
| C | <ul style="list-style-type: none"> - EXTERNAL WALLS - SWIMMING POOLS - HUMID ENVIRONMENTS (shower, bio sauna, spa, etc.) <u>only the 24 standard colours*</u> | Suitable for these environments. Particularly suitable for foreshore areas, lateral beaches and humid environments when being walked on barefoot. |

* For light colours excluded from the list of standard colours, it is advised to use only as wall or ceiling tiling.

| 3 | WEIGHTS AND MEASUREMENTS | |
|---|--------------------------|------------|
| | Format | 12x12 mm |
| | Mounting | paper |
| | Sheet dimension | 293x293mm |
| | Tiles per sheet | 529 |
| | Thickness | 4 mm |
| | Joint | ~0,74 mm |
| | Weight | 7.5 kg/sqm |
| | Quantity/carton | 1.29 sqm |
| | Sheets/carton | 15 |

Note: dimensional and chromatic variation of Gold tiles is intrinsic to the production process which involves a number of manual steps and it is a distinctive feature of the product.

OPUS ROMANO

| 4.a | TECHNICAL CHARACTERISTICS | | | |
|-----|-----------------------------------|-------------------|-------------------------------------|-----------|
| | Description | Test | Established limits | Result |
| | Water absorption | ISO 10545 - 3 | E ≤ 0.5% | 0 |
| | Frost resistance | ISO 10545 - 12 | | resistant |
| | Colour resistance to fading | DIN 51094 | | resistant |
| | Resistance to chemical attack | ISO 10545 - 13 | | resistant |
| | Stain resistance | ISO 10545-14 | | resistant |
| | Resistance to thermal shocks | ANSI A 137.2-2012 | +15 / +71°C | resistant |
| | Wear resistance (PEI) | ISO 10545 - 7 | Class 0-5 | Class 5 |
| | Resistance to temperature changes | ISO 10545 - 9 | 15°-145°C | resistant |
| | Slip resistance | DIN 51097 | A(12°-18°) B(18°-24°) C(+24°) | A |

OPUS ROMANO MATT

| 4.b | TECHNICAL CHARACTERISTICS | | | |
|-----|-----------------------------------|----------------------|-------------------------------------|--------------|
| | Description | Test | Established limits | Result |
| | Water absorption | ISO 10545 - 3 | E ≤ 0.5% | 0 |
| | Frost resistance | ISO 10545 - 12 | | resistant |
| | Colour resistance to fading | DIN 51094 | | resistant |
| | Resistance to chemical attack | ISO 10545 - 13 | | resistant |
| | Stain resistance | ISO 10545 - 14 | | resistant |
| | Resistance to thermal shocks | ANSI A 137.2-2012 | +15/+71°C | resistant |
| | Wear resistance (PEI) | ISO 10545 - 7 | Class 0-5 | Class 3 |
| | Resistance to temperature changes | ISO 10545 - 9 | 15°-145°C | resistant |
| | Slip resistance | DIN 51097 | A(12°-18°) B(18°-24°) C(+24°) | A+B+C |
| | | DIN 51130 | R9 - R13 | R10 |
| | | B.C.R Rep. CEC. 6/81 | 0.40 ≤ μ < 0.74 ≥ 0.74 | 0.86 |
| | | ENV 12633:2006 | Class 0-3 (Rd ≥ 45) | Class 3 (55) |

OPUS ROMANO MATT in blends

| 4.c | TECHNICAL CHARACTERISTICS | | percentage of OPUS ROMANO MATT in mixture | | |
|-----|---------------------------|-----------|---|---------|-----------|
| | | | 25% | 50% | 75% |
| | Slip resistance | DIN 51097 | A 17° | A+B 21° | A+B+C 24° |
| | Slip resistance | DIN 51130 | R10 | R10 | R10 |

OPUS ROMANO ORO (12.1 - 12.6)

| 4.d | TECHNICAL CHARACTERISTICS | | | |
|-----|--|------------------|--------------------|-----------|
| | Description | Test | Established limits | Result |
| | Resistance to chemical attack | ISO 10545 -13 | - | resistant |
| | Determination to scratch hardness of surface (according to Mohs) | EN 101:1991 Mohs | Class 1-10 | Class 4 |

| 5 | STRENGTHS |
|---|---|
| | <ul style="list-style-type: none"> - endless combination possibilities, to create personalized blends and decors - ease of cleaning - light weight and thinness allow for easy renovations - suitable for floor coverings that are subject to severe pedestrian traffic (standard, not Matt version) - pleasant to the touch - Opus Romano Matt is the ideal product for the floors of humid environments (saunas, pool beaches, etc.) when being walked on barefoot - the reduced format makes it suitable for tiling curved surfaces: convex surfaces, 30 mm radius - concave surfaces, 20 mm radius |

| 6 | INSTALLATION |
|----------|--|
| A | <p>For best results, the foundation must have a perfectly smooth, even surface, and must be dry, sound and stable.</p> <ul style="list-style-type: none"> - Cement, plaster, plasterboard foundations: we recommend the use of adhesive Bisazza Ad Hoc - Foundations of other nature: we recommend the use of adhesive Bisazza eGlue - For exteriors, submerged and humid areas: we recommend the use* of adhesive Bisazza Ad Hoc+Ultra - The use of epoxy products is compulsory for installation in swimming-pools with salty water or thermal water. We recommend the use of the Bisazza epoxy installation kit and of an epoxy skim to guarantee waterproofing. - Thoroughly wash traces of paper glue before grouting - When laying, use a spatula with 3,5 mm teeth <p>Average consumption Bisazza Ad Hoc: 1.25 kg/sqm (two coats of skimming included) Average consumption Bisazza Ultra: 0.8 kg/sqm Average consumption Bisazza eGlue: 1.6 kg/sqm (please add 0.9 Kg/sqm for the skimming)</p> <p>* except for any specific rule or protocol enforced by the single Country.</p> |
| B | <p>Grouting: For the best results and performance, use Bisazza Fillgel Plus UVR. The grout colour will affect the final aesthetic appearance of the product installed; therefore, due to the natural characteristics of Opus Romano, we advise to use Fillgel 1104 neutro base.</p> <p>Average consumption Bisazza Fillgel Plus UVR: 1.2 kg/sqm</p> <p>For any information on the installation procedure, consult the installation book and the products technical data sheets.</p> |

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|----------|---|
| 7 | MAINTENANCE |
| | <p>Use ordinary cleaning products for maintenance and cleaning of glass mosaic surfaces (except those containing hydrofluoric acid or phosphoric acid), being careful to rinse thoroughly with water. Alkaline detergents should be used carefully and rapidly rinsed out with water. Any cleaning product should not be used on heated or surfaces directly exposed to sunlight. Avoid using abrasive tools and high-pressure jets of water.</p> |

| | |
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| 8 | WARNING |
| | <p>Before the application, all the materials should be stored in a dry place sheltered from rain and humidity. For information on use with fibreglass or steel swimming pools, contact Bisazza's technical office (installation.department@bisazza.com).</p> |

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| 9 | TABLE OF CONTENTS OF RECYCLED MATERIAL OF COLORS OF THE COLLECTION, DESIGNED TO THE CALCULATION OF RATING FOR LEED CLASSIFICATION | | |
| | Colour code | % Pre-consumption scrap float glass and sheet glass | % Post-consumption scrap bottles and ashtrays |
| | 01 | 78 | 17 |
| | 02 | 79 | 20 |
| | 04* | 79 | 20 |
| | 05 | 79 | 20 |
| | 07* | 79 | 20 |
| | 09* | 79 | 20 |
| | 11 | 78 | 19 |
| | 16 | 78 | 19 |
| | 19 | 79 | 19 |
| | 20* | 79 | 19 |
| | 22 | 79 | 19 |
| | 34 | 79 | 19 |
| | 36 | 79 | 20 |
| | 39 | 79 | 20 |
| | 40* | 79 | 20 |
| | 42* | 79 | 20 |
| | 44 | 79 | 20 |
| | 45 | 79 | 20 |
| | 47* | 79 | 19 |
| | 48* | 79 | 19 |
| | 53* | 79 | 20 |
| | 54* | 79 | 20 |
| | 55 | 79 | 19 |
| | 57 | 79 | 19 |
| | 60* | 79 | 19 |
| | 62 | 79 | 19 |

| | | |
|------|----|----|
| 74* | 79 | 20 |
| 75 | 79 | 20 |
| 76 | 79 | 19 |
| 77 | 79 | 19 |
| 78 | 79 | 20 |
| 81* | 79 | 20 |
| 82* | 79 | 20 |
| 84 | 79 | 20 |
| 85 | 79 | 20 |
| 87* | 79 | 20 |
| 88* | 79 | 20 |
| 91 | 79 | 20 |
| 96* | 79 | 19 |
| 98 | 79 | 19 |
| 99 | 79 | 19 |
| 103 | 79 | 19 |
| 104 | 79 | 19 |
| 106 | 79 | 19 |
| 110 | 79 | 20 |
| 111 | 79 | 20 |
| 113* | 79 | 20 |
| 116 | 79 | 20 |
| 117* | 79 | 20 |
| 118* | 79 | 20 |
| 128* | 79 | 20 |
| 130* | 79 | 20 |
| 131* | 79 | 20 |
| 133* | 79 | 20 |

* value valid also for the MATT version.