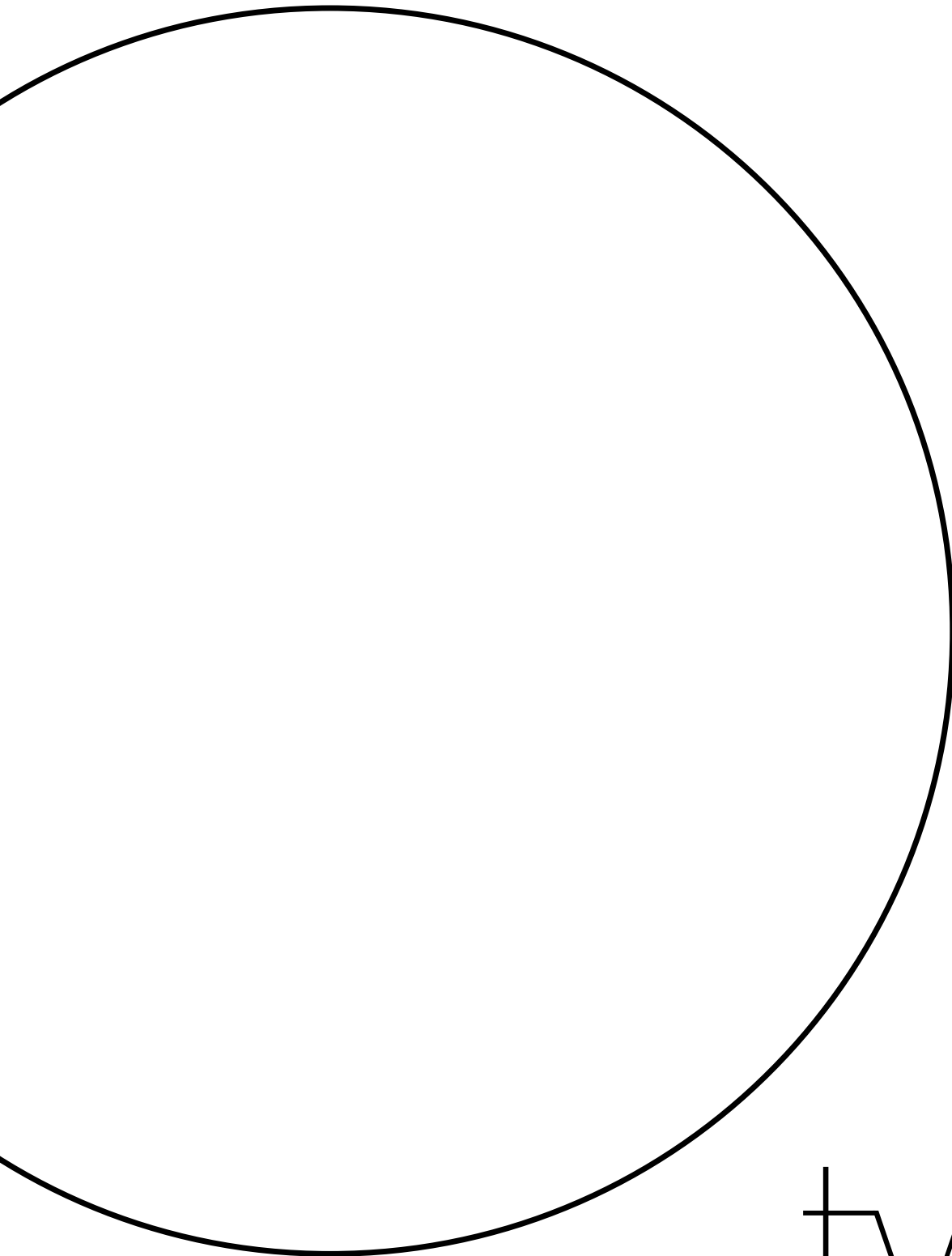


TECHNICAL GUIDE

09.2024

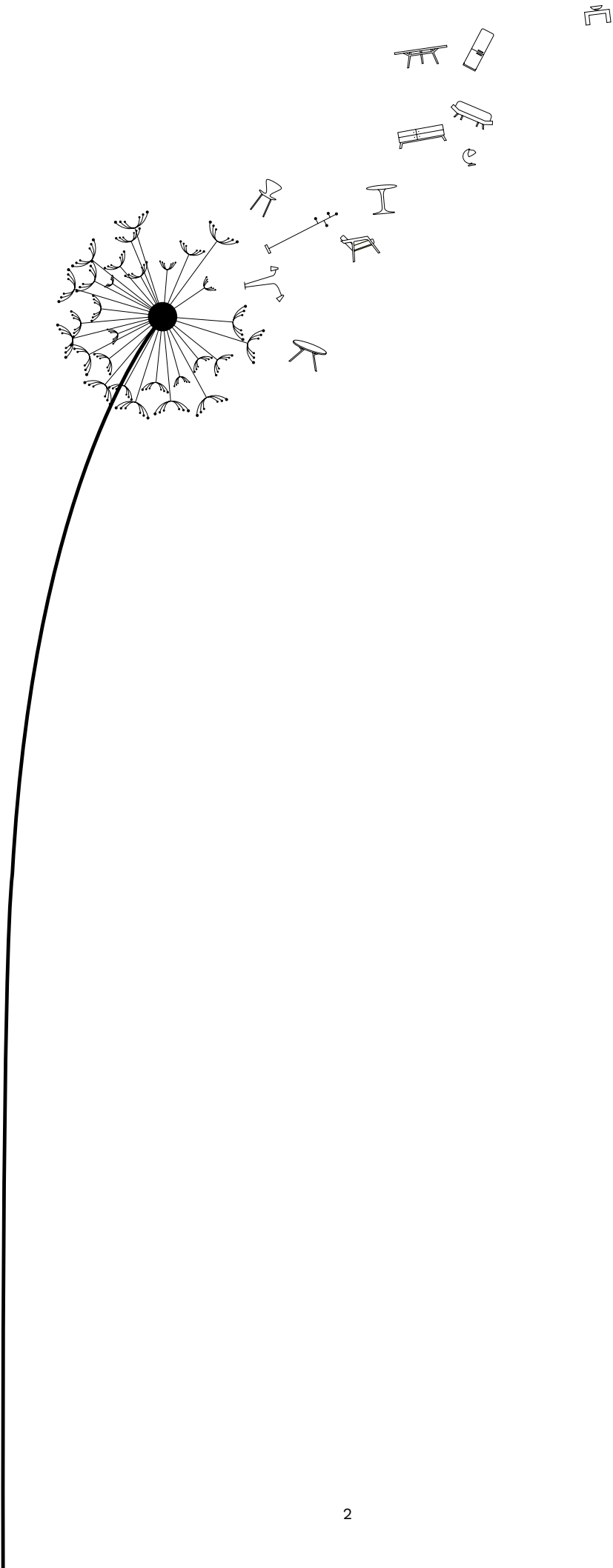


two

BY **LAMINAM**

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THIS IS LAMINAM

Surfaces inspired by nature, yet which go beyond the natural

Laminam manufactures ceramic slabs which challenge the traditional uses of this material, creating large-size yet incredibly thin surfaces used in external architecture, interior design and furniture elements.

Together, for well-being

We design premium quality surfaces to inspire architects, designers, and all those who wish to shape places where we can live well and feel confident. Thanks to the talent of our people, we set trend in terms of elegance and quality, using cutting-edge technologies to ensure timeless surfaces that offer exceptional performance levels through sustainable production processes. From kitchen countertops to furnishing elements, flooring and wall cladding, and also external façades: for us, every space tells a story.

The world is our horizon

Our R&D department and technology lab work incessantly on new materials, new body mixes, and new technologies to improve the efficiency and sustainability of our products, expanding their markets and uses. A clear international engagement is backed by a deeply-rooted Italian pride: the design of all our products is 100% Italian.

1. PRODUCT

Laminam's tireless technological research opens the way to never-before seen levels of innovation, a genuine turning point in how we live: surfaces just 2 mm thick.

Thanks to Laminam's pioneering know-how, in spite of their three-dimensional structure two slabs are extremely thin and lightweight, ideal for creating infinitely versatile, variform, original, inspired design schemes.

two surfaces offer all the technical properties typical of other Laminam products, combining them with a particularly exquisite aesthetic that raises their beauty to fresh heights.

Laminam has applied for a patent for two, making the world's thinnest revolutionary surfaces absolutely, uniquely Laminam.

1.1 Size, thickness

Laminam 2

Laminam 2 is the standard basic slab.

A slab as it leaves the kiln, i.e. not trimmed to the standard working size.

Usable surface area:

1000x3000 mm (39.4"x118.1") ♦

Nominal thickness: 2.2 mm (1/16")

Uses of Laminam 2

Furniture sector: for cladding surfaces

Laminam 2 technical specifications

Ceramic surface produced by the wet grinding of clay, sand, feldspar and inorganic ceramic pigment raw materials, compacted by an innovative press forming process and sintered at 1250 °C through firing in a hybrid kiln. The material can be supplied as it leaves the kiln (untrimmed) or in a standard, squared working size.

Laminam 2+

Laminam 2+ consists of the basic slab structurally reinforced with a fiberglass mesh applied to the underside with a specific adhesive.

Usable surface area:

1000x3000 mm (39.4"x118.1"),

Nominal thickness: 2.6 mm (1/8")

Uses of Laminam 2+

Construction sector: indoor and outdoor claddings

Furniture sector: for cladding surfaces

Laminam 2+ technical specifications

Surface produced by the wet grinding of clay, sand, feldspar and inorganic ceramic pigment raw materials, compacted by a special press forming process and sintered at 1250 °C through firing in a hybrid kiln. The material can be supplied as it leaves the kiln (untrimmed) or in a standard, squared working size, both structurally reinforced with inert material (fiberglass mesh applied to the underside).

♦ Slab as it leaves the kiln, i.e. not trimmed to the standard working size.

1.2 One surface, many properties

Easy to clean and maintain

Cleaning twO by Laminam surfaces is quick and easy. In general, hot water and readily available neutral cleaning products can be used. The beauty of twO by Laminam surfaces is designed to stand the test of time.

Immune to scratches and abrasions

twO by Laminam surfaces are resistant to scratches and deep abrasion. They retain their natural properties over time, even after frequent cleaning. twO surfaces are resistant to wear, meaning they do not require any specific maintenance, and their performance equals or surpasses that of other natural (and man-made) materials.

Resistant to high temperatures and thermal shock

Hygienic: impedes proliferation of bacteria

twO by Laminam surfaces guarantee impeccable hygiene because they do not harbor bacteria, mold or fungus.

Resistant to descalers, degreasers and chemicals in general

twO by Laminam surfaces withstand lengthy contact with the main commercial household cleaning products, including degreasers and descalers.

Does not absorb water and is unaffected by damp

twO by Laminam surfaces are practically waterproof. They are thus perfect for installation in damp locations or areas exposed to water. Even lengthy exposure to damp does not affect them, making twO surfaces suitable for covering the walls of places like gyms, pools, spas, and saunas.

Sustainable and recyclable

twO by Laminam consists of 100% natural raw materials and, like all Laminam slabs, it contains up to 60% recycled material. Sustainability is in our DNA, so our surfaces can easily be recycled and reused in other production cycles.

Resistant to weather and UV radiation

twO by Laminam surfaces can be used both indoors and outdoors. Exposure to weather and UV radiation does not damage or modify these surfaces, which do not fade even with exposure to direct sunlight. They are immune to salt spray and other adverse weather too, making them perfect for seaside locations as well.

Resistant to frost and low temperatures

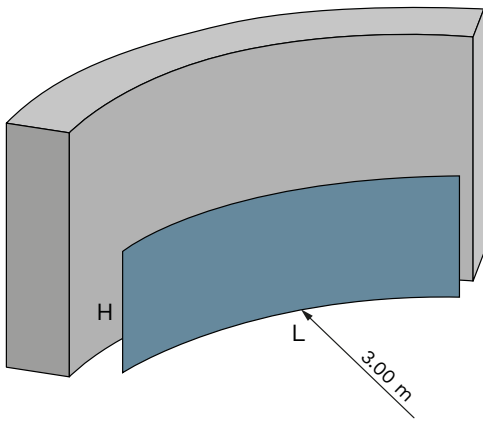
twO by Laminam surfaces even withstand low temperatures and ice, so they are perfect for use outdoors and in cold climate zones.

1.3 Flexibility achieved in terms of slab curvature capacity

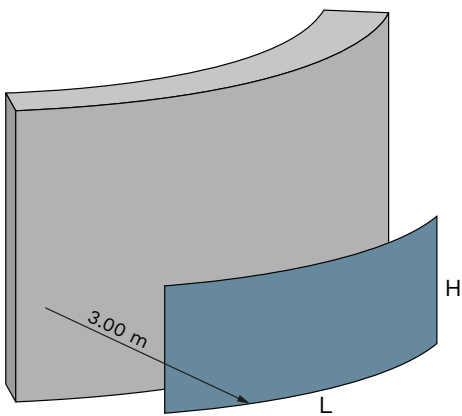
The state-of-the-art production process and careful choice of raw materials enable two slabs to achieve unprecedented curvature, a wonderful new tool for the creativity of architects and designers.

two slabs can be installed on concave and convex surfaces, within the limits outlined below:

3000 mm radius



3000 mm radius	
L min	500 mm
H min	50 mm
H max	1000 mm

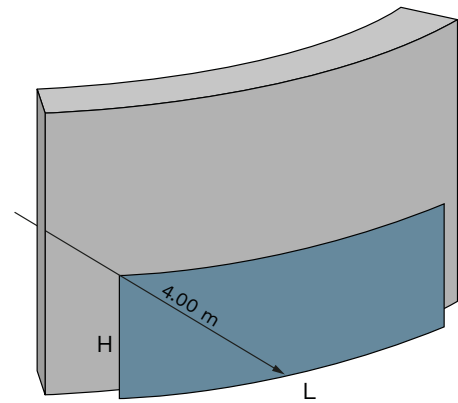
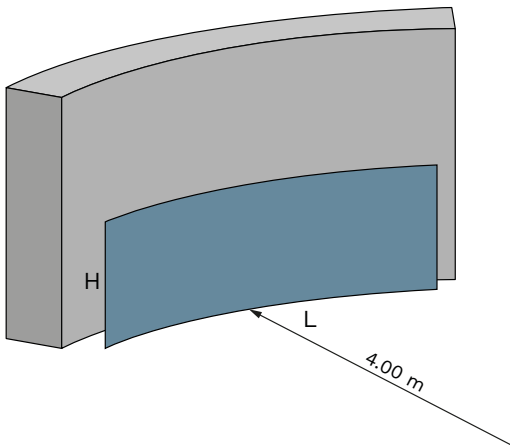


3000 mm radius	
L min	1500 mm
H min	50 mm
H max	1000 mm

3000 mm radius	
L min	1000 mm
H min	50 mm
H max	750 mm

3000 mm radius	
L min	500 mm
H min	50 mm
H max	250 mm

4000 mm radius

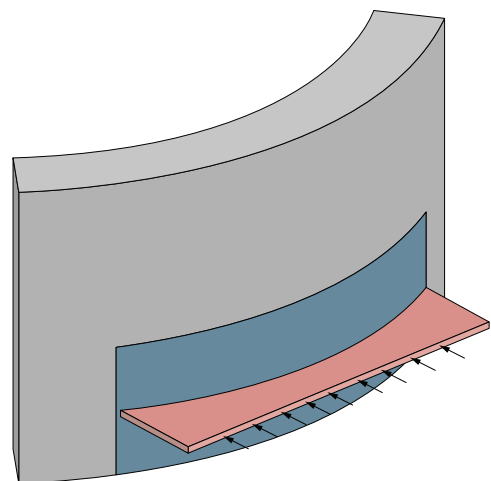
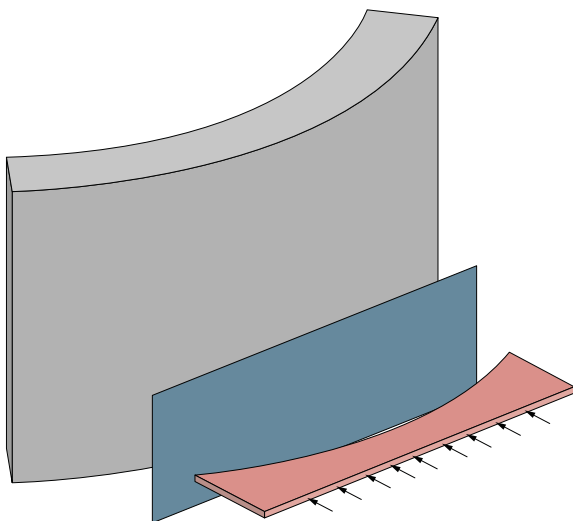


4000 mm radius	
L min	500 mm
H min	50 mm
H max	1000 mm

4000 mm radius	
L min	500 mm
H min	50 mm
H max	1000 mm

When installing twO on curved surfaces, the slab must be dressed along the entire length of the substrate evenly, without pressure being applied in individual points.

When covering convex or concave elements with tighter radii, apply twO by Laminam to the substrate with the use of a dedicated former allowing uniform pressure to be applied across the entire slab. The former can be used, when suitably anchored, as a support until the adhesive has set.



If penetrations are provided for in the curved sections, it will be necessary to carry out feasibility tests, bearing in mind that the indications given above may not be reliable. Where possible, it is always preferable to drill the holes after installation is complete.

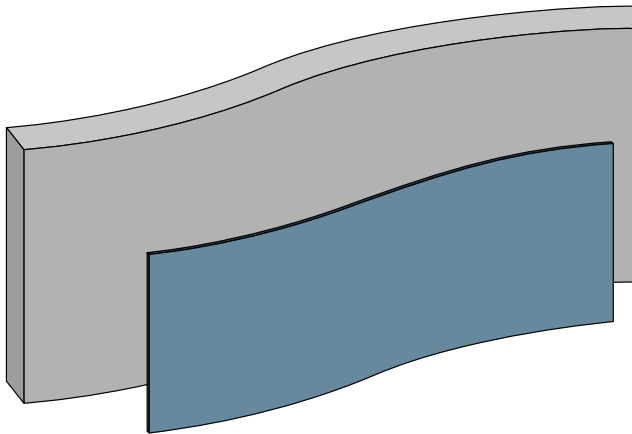
Dual curve on the same slab

It is not possible to supply technical indications if a dual curve is specified for the same slab, due to the manifold variants which can exist in terms of shape and radius. The installer must verify the feasibility on a case-by-case basis.

Installation on curved surfaces requires a high level of care and experience, and involves an increased risk of the slabs breaking during the handling and installation phases.

Following installation, settlement and shrinkage of the substrate could more easily lead to cracking in the curved portions, particularly when penetrations/holes have been made in them.

Given the particular application, such situations are not considered material defects.

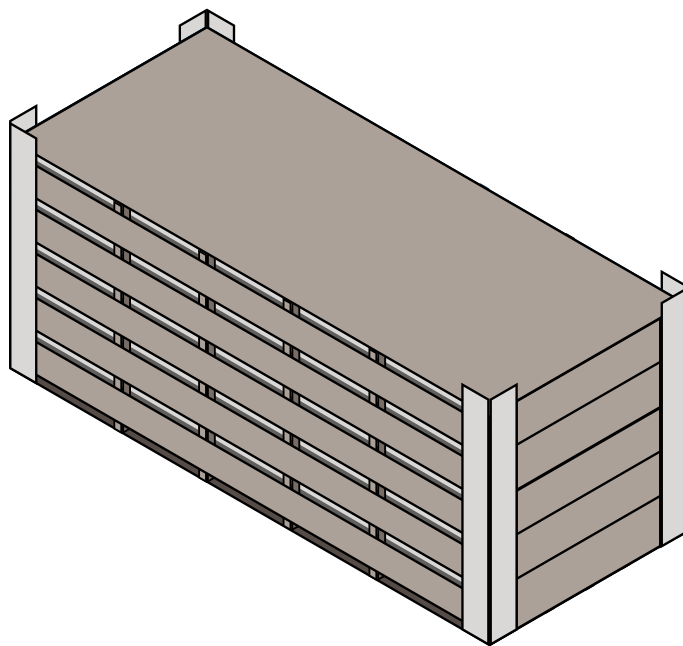


2. PACKAGING

two slabs are carefully packaged in stackable wooden trays in order to ensure product integrity. During transport and storage, the packages must be uniformly positioned on a flat surface. It is possible to stack trays or pallets of the same size. Do not stack other materials on top of the trays which could damage the packaging or the slabs.

1000x3000 39.4"x118.1"	pcs per Wooden Tray	sqm per Wooden Tray	kg per Wooden Tray***	total Wooden Tray size (mm/inch)
Laminam 2 ♦	28	84	458.2**	1110x3145x220h* 43.7"x123.8"x8.6h"
Laminam 2+	28	84	483.4**	1110x3145x220h* 43.7"x123.8"x8.6h"

Up to 5 trays can be stacked during transport. When stored under cover in a warehouse, up to 15 crates can be stacked; outdoors, up to 10 crates can be stacked. Regardless of the storage zone, the floor must be flat and even.



♦ Untrimmed end product.

* FAO wooden tray (suitable for overlapping).

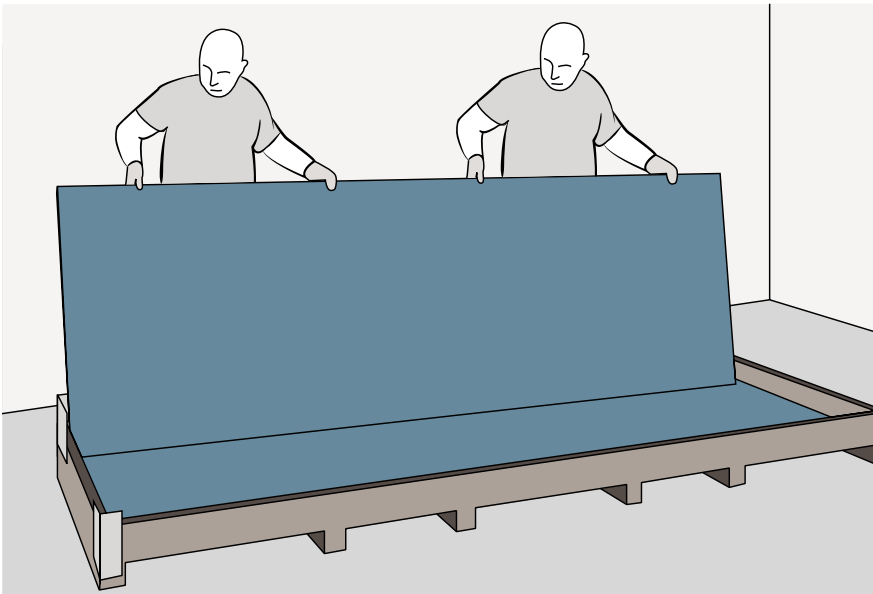
** The weight refers to the complete wooden tray.

*** The mentioned average values take into account wooden packaging in standard humidity conditions.

3. HANDLING

Handling of two slabs must be performed in the same manner as for other Laminam slabs, with the benefit that their light weight facilitates these operations.

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Given their reduced thickness, we suggest that the slabs always be moved by two operatives, distributing the gripping points and avoiding pressure being applied at single points when lifting the packages, as this could lead to product breakage.

4. PROCESSING/FABRICATION

Processing/fabrication work on two slabs must be performed using the same methods approved for other Laminam slabs. The reduced thickness facilitates cutting and drilling operations, which must be performed on a flat, rigid, and continuous support surface.

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5. INSTALLATION WITH CEMENTITIOUS ADHESIVE

two by Laminam may be installed using cementitious adhesives commonly used for installation of large slabs, with variable bed thickness of between 3 and 5 mm.



5.1 Verification of the substrate

To ensure correct installation of twoO, the substrate must meet all the requirements outlined in the Laminam technical guide for wall and floor installation at the time of installation.

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5.2 Installation on interior walls

two by Laminam slabs in the largest 1000x3000 mm size may be installed on interior walls finished with plaster, drywall, or on top of existing coverings.

It is recommended to leave a grout gap of 1-2 mm between slabs, which should be filled with specific cementitious or epoxy grout, using tile spacers or proprietary tile leveling systems.

Provide for expansion joints of at least 3 mm on ceramic coverings every 25 m², with largest side not to exceed 6 m.

5.2.1 Installation on plaster or drywall

If installing on wet-plastered or gypsum wallboard (drywall) walls, first check that the substrate meets the requirements laid out in the Laminam technical guide for floor and wall installation.

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Thanks to their exceptionally light weight, it is possible to install twO by Laminam by applying cementitious adhesive (class C2S1 and C2S2) to the substrate only, using a 3 mm notched trowel (back-buttering the slab is therefore not required). Apply adhesive on the area to be occupied by one slab at a time only, in order to prevent skinning over, as this can compromise adhesion. Once installed, tap or vibrate the slab to facilitate collapsing of the ridges and ensure full coverage.

Installation without back-buttering the slab may be performed only if the installation conditions and installer skill are sufficient to ensure full coverage is achieved and thus uniform impact resistance, where required. Otherwise, the slabs should be back-buttered.

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5.^{2.2} Installation on top of existing coverings

Installation of twO by Laminam on existing non-porous coverings shall be performed with the use of cementitious adhesives (class C2S1 and C2S2); the slabs must be back-buttered as described in the Laminam technical guide for floor and wall installation.

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5.3 External installation (cladding)

twO by Laminam can be used on external façades (cladding); the slabs must be back-buttered, and suitable substrates include plaster, concrete, external wall insulation systems (in accordance with the guidelines issued by the manufacturer/specifier of the system), and fiber cement, following the instructions and application methods described in the Laminam technical guide for floor and wall installation.

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5.4 Recommended cementitious adhesives

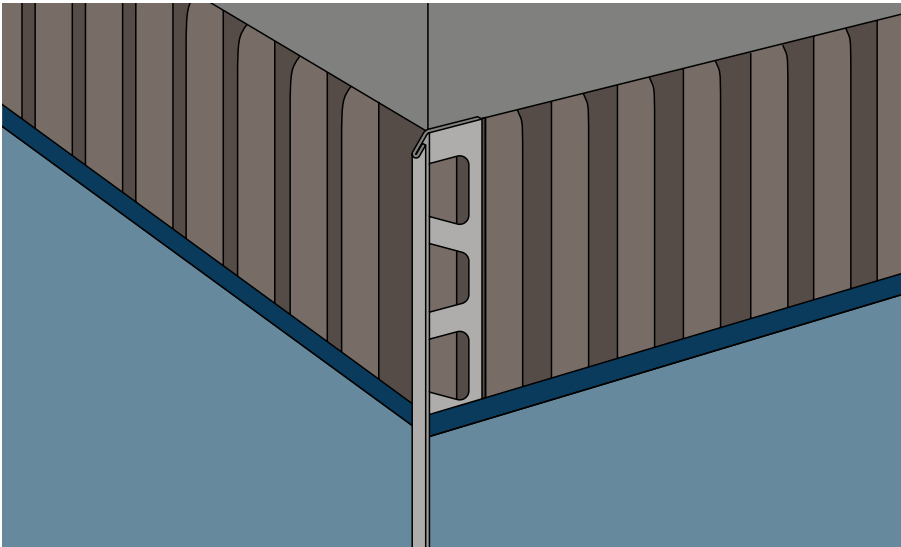
Refer to the indications given in the Laminam technical guide for floor and wall installation for a list of adhesives recommended for installation of twO by Laminam slabs.

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6. OUTSIDE CORNERS

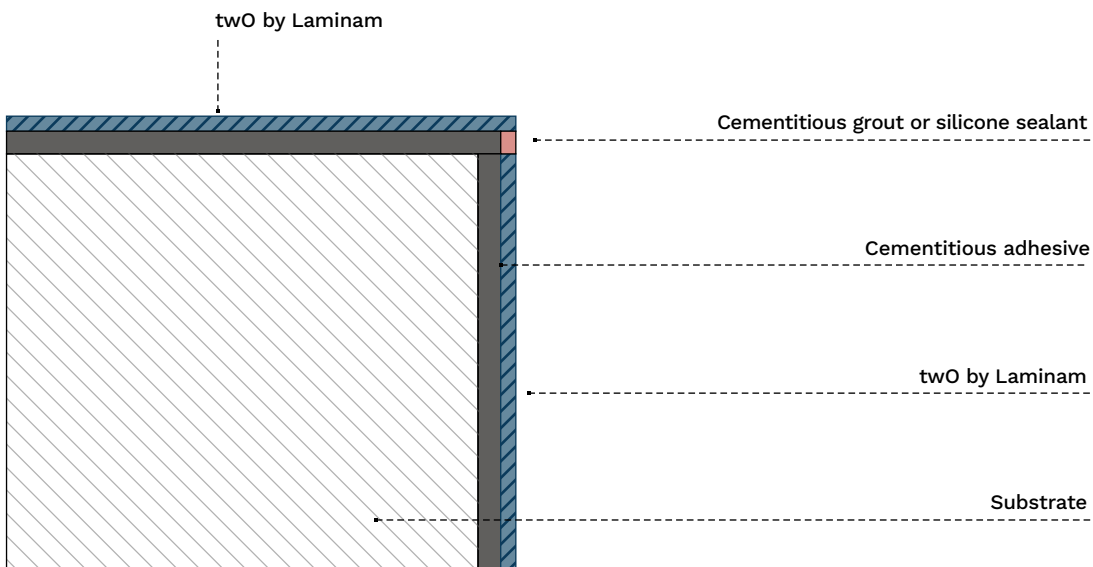
In order to complete exposed edges and outside corners in indoor and outdoor installations of twO by Laminam, edging profiles of suitable thickness are available from third-party manufacturers.

These products not only provide a characteristic aesthetic appearance, but also protect edges from accidental impacts.

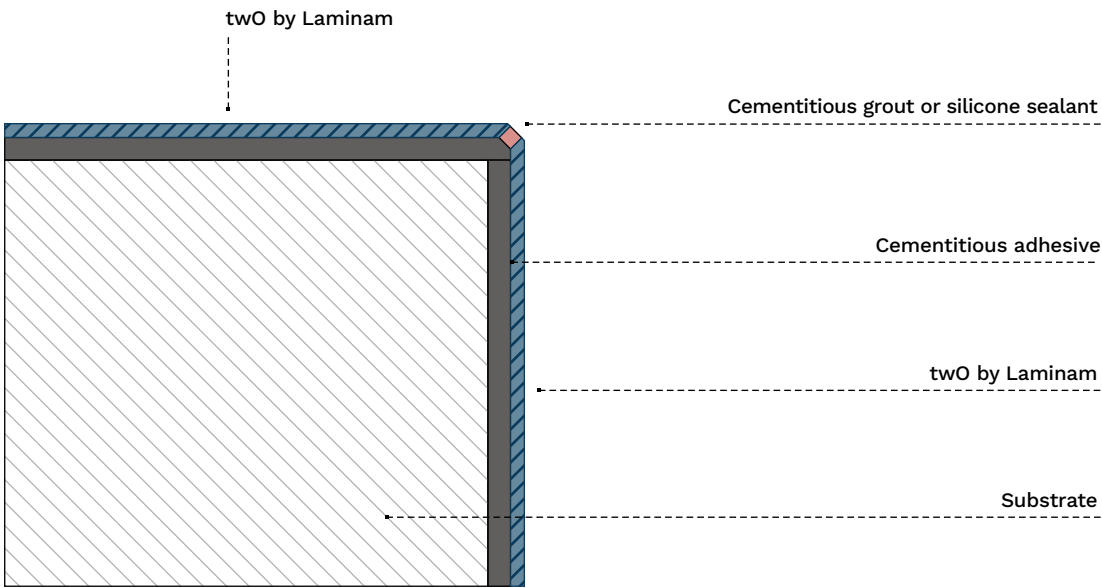


Outside corners can also be made without the use of edging profiles by:

- Butting the two slabs together, leaving one raw edge exposed and then space for grout before the surface of the abutting slab, to be filled with cementitious grout or silicone sealant



- “Mitered” outside corner joint, with the edges of the slab beveled at 45° to hide the raw edge of the slab



7. CLEANING AND CARE

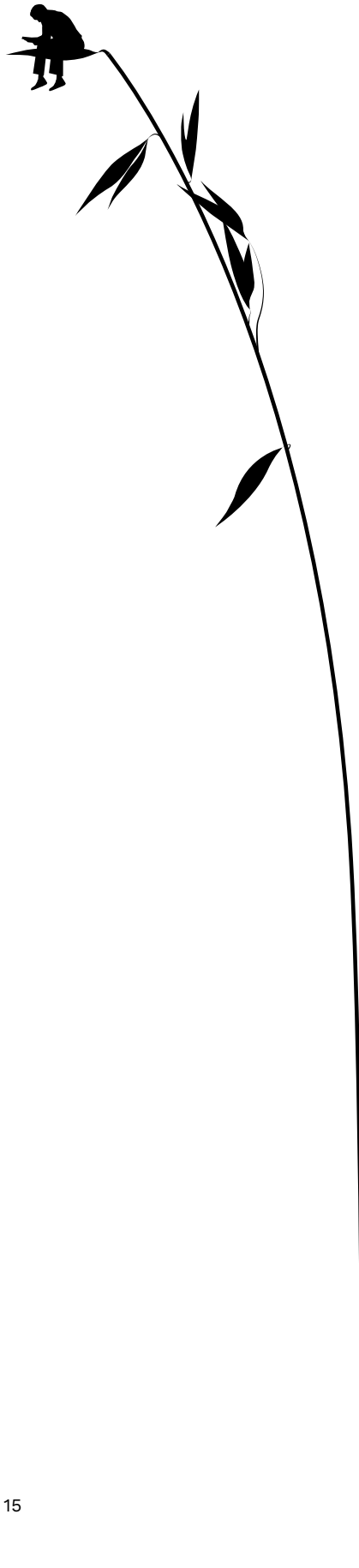
End-of-work cleaning and ongoing regular cleaning of twO slabs must be performed using the same methods approved for other thicknesses of Laminam slabs.

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8. SAFETY EQUIPMENT

On-site fabrication and installation operations must be performed safely, with the use of all PPE specified in the product safety data sheet, and in accordance with local codes and legislation.

If the material is to be cut, drilled or processed in such a way as to lead to the formation of dust, consideration should be given to performing these operations outdoors or in another adequately ventilated environment, or else the use of water cutting tools or dust extraction systems.



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LAMINAM IN THE WORLD

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Laminam Benelux	Laminam France	Laminam Israel	Laminam UK	
Laminam Canada	Laminam Germany	Laminam Italy	Laminam USA	Interstone Poland

**Siamo architetti dei nostri spazi,
inseguiamo l'unicità.**

We are designers of our own
spaces seeking uniqueness.