



Tillica Pasta

ISO.TILLICA.PA

Company with UNI EN ISO 9001:2015 Certified Quality Management System
Produced in an ISO 9001-14001 certified company
CE UNI 988/1T1 STANDARD EN 15824-22 Z2 STANDARD
System 4 INSULATING MORTARS



LAB N° 1035L



Average solar reflectance, Tillica, ASTM1980-11 standard	0,90
Thermal emissivity standard ASTM C 1371-04 at εt	0,91
UNI EN ISO 22097:23 Thermal Conductivity	0,002
Specific weight Tillica Paste wet	0,70 kg/lt
Specific weight Tillica Paste dry	0,17 kg/lt
Permeability to water vapour UNI EN ISO 7783:2012	V1 μ ≤8
Permeability to liquid water UNI EN ISO 1062-3:200	W 1,9
Specific heat	1,13 j/kgk
Adhesion and traction UNI EN 13687-3, UNI EN 1542 Average value (fh)	0,02 N/m² MPa
Direct adhesion UNI EN 1542 (fh)	0,05N/m² B
Compressive strength EN 196-1	0,364 N/mm
Sound absorption coefficient: UNI EN ISO 10534-2	a 500Hz con 10 mm 0,16
Reaction to fire class UE 2017/1228 20/03/2017 standard	A2-s1, d0
Fire resistance directive (MED) 2014/EU including test requirements and standards (EU) 2017/306	Non-combustible material
V.O.C.: UNI EN ISO 16000-9:2006 + ISO 16000-6:2011t	exempt

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Arte e Mestieri

Via Missionari Casarsesi, 15 33072 Casarsa della Delizia (PN)
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Tillica is a
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Specification Item

Natural high-performance, thin-layer thermal insulating and heat-reflective render with antibacterial properties, suitable for external and/or internal walls (masonry), and ceilings (building envelope), with perfectly flat surfaces.

Thermal render T1, composed of a blend of aged lime putty in compliance with UNI EN 459-1 and amorphous silica (aerogel) in accordance with UNI EN 15824:2017. Features:

High breathability

Water vapour permeability: $\mu \leq 8$ (UNI EN ISO 7783:2012)

Water absorption: Class W1 Reaction to fire: A2-s1,d0 (EU 1228:2017)

Free from Volatile Organic Compounds (VOCs), compliant with Directive 2004/42/EC

Thermal conductivity μ : 0.002 W/m·K (UNI EN ISO 22097:2023)

Average solar reflectance: 0.90 (ASTM 1980-11)

Thermal emissivity: 0.91 (ASTM C1371-04)

Sound absorption coefficient: 0.16 at 500 Hz with 10 mm thickness (UNI EN ISO 10534-2)

Adhesion strength: 0.05 N/mm² (UNI EN 1542:2000 and UNI EN 13687-3:2003)

Application: By hand or mechanical spray, finished with trowel.
Average thickness of TILLICA paste: 5 mm Pre-treatment: apply antibacterial bonding primer, followed by aesthetic finishing render using pre-mixed mortar based on aged lime putty (UNI EN 459-1) and selected mineral aggregates, available in white or coloured versions – Natural Calk line.

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Tillica Pasta: Innovation Rooted in Tradition

A new world is opening up before us—and it would be a real shame to stay out of it.

This is how Tillica, in paste form, was born: a truly unique material in terms of performance and properties. Tillica Pasta Natural Calk summarizes, in one product, all the advantages deriving from the use of lime (a transpirant, bactericidal, non-toxic material) to the performance that result from a new approach to isolation, which supports the transmission of energy by irradiation to conduction. The result is a product that provides insulation with just 3 mm, effectively replacing 6 cm of traditional insulation. At 5 mm thickness, it matches the performance of 10 cm conventional insulating cladding.

Tillica Pasta is:

100% natural, safe, and durable

Hydrophobic and breathable, maintaining thermal and moisture balance within the building

Fire-resistant – it does not release toxic fumes when exposed to flames

Easy and quick to apply, manually or by machine

Waste-free, thermo-insulating and heat-reflective

It promotes energy efficiency

Fully recyclable

Sound-absorbing

Convenient to store and transport

Tillica Pasta can be applied outside and inside, on the floors, ceilings, roofs, new plaster and old walls, prefinished slabs, existing coats, cork, wood cement, calcium silicate. It can be used in **civil construction for historic restoration, renovations, anti-mould remediation, green building / bio-architecture and in industrial construction for internal and external insulation of warehouses and production facilities. protection against heat sources, fire resistance for steel structures.**

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Correct use of Tillica

To guarantee and allow that they are retained the performance and characteristics of total non-toxicity (for humans and the environment) of Tillica, it is crucial to use it in the correct manner.

It should not be paired with finishes or colours with chemical additives, non-transparent, or that contain fossil-derived products, synthetic resins, etc. It was therefore designed a “system”, called “Tillica Pasta System,” which presents in simple form a “package ready to use” of all the processing steps needed to apply Tillica Pasta, combining them with lime-based materials only of the Natural Calk line, in harmony with the approach of sustainability and respect for the environment at 360°.

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Features and Advantages

TILLICA Paste is a heat-insulating and heat-reflective combination of raw materials that are able to isolate and enhance the best thermal value inside and cancel the thermal load of the building on the outside. It consists of lime putty seasoned according to UNI EN459-1 regulations and Amorphous Silicon.

Easy to apply with a plastic trowel or mechanically. **Practical**, it is a ready-to-use paste product packaged in 15-liter buckets, convenient for transport and storage. **Safe**, applied to the wall, it creates a single body with the existing plaster

Impact resistant, it gives the feeling of emptiness as in traditional sheet coats.

Breathable, it keeps the building in thermal and water balance.

Insulating, it is not putrescible and maintains and improves its insulating characteristics over time.

Natural, produced with selected natural raw materials, non-toxic neither for the operator nor for the treated environments. **Flame retardant**, it does not burn when in contact with the flame and does not release toxic fumes.

Recyclable, it does not create waste, as it is totally used. Free from VOC gases

Sound absorbing

Superior thermal performance.

Average consumption, 0,60-070 lt/mm/mq

With 15 l the average yield is equal to:

1.8 sqm with 8.3 l/sqm equal to 20 cm of eps

4-5 sqm with 3.3 l/sqm equal to 10 cm of eps

7-8 sqm with 2.0 l/sqm equal to 6 cm of eps

Insulated wall:

with 2.2 l. 3°C improvement.

+ 2.2 l. improvement of another 3°C.

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Application and Insulation Yield

TILLICA Pasta applied with a trowel or with an air gun does not change the grain size of the mixture, while applied with a pump, the grain size crushed by the pumping system decreases the thickness, which can decrease due to the evaporation of the lime putty water, but does not change the insulating value. It is important to evaluate the kg applied on 1 square metre of wet Tillica.

It is absolutely rigorous the use of the products of the Natural Calk line for maintaining the characteristics of the material and ensure the relevant result. It is advisable to follow the directions in the METHODS FOR USE (on the website on the TILLICA page)

Where it applies: see the METHODS OF USE sheet (on the website on the TILLICA page)

Note: As is known, in natural products, maturation is slow, constant and improves over time, unlike synthetic products; characteristics that do not lead to extensions of application times.

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How to apply

a. Antibacterial Fixative Substance

Apply a coat of Natural Calk ANTIBACTERIAL FIXATIVE SUBSTANCE by brush or spray **Natural Calk Dilution** with water at 40-50% > **Packaging** in 5-l and 17-l drums. **Average yield** 7/10 sqm with one litre.

The Antibacterial Fixative substance is ideal as an adhesive for the preparation/consolidation/improvement of the adhesion of the substrate (especially if dusty or in the presence of detachments) for the subsequent application of TILLICA PASTE. It has a good anti-mould bactericidal action

b. Primer 12

Apply PRIMER 12 using a low-pressure sprayer (0.2 bar) until the substrate is fully saturated. It prevents salt efflorescence and must be applied after the ANTIBACTERIAL FIXATIVE has dried or is nearly dry. Do not dilute. It does not compromise the breathability of the TILLICA SYSTEM. Supplied in 5- or 10-liters containers. Consumption depends on the surface and ranges from 100–120 g/m².

c. Tillica Pasta

When fresh, even when the surface is wet and damp of ANTIBACTERIAL FIXATIVE SUBSTANCE, open the drum of TILLICA PASTA, shake off the product; if needed, add water only up to 150 ml, and proceed with the application to the wall in the required thickness (3-5-7 mm) by plastic trowel (recommended), metal trowel or spray (recommended). Depending on the thickness to be applied, perform the operation in more layers. Apply a smoothing coat (smoothing mortar or plaster or marmorino) with TILLICA PASTA still wet. Wait 24 hours before proceeding with the final finish. It is recommended NOT to add dyes of any type or other material to Tillica Paste.

TILLICA PASTA: **Dilution**: if needed, with water up to 150 ml > **Package**: Drums of 15 litres > **Average Consumption** in litres 0.60- 0.70 l/mm/ sqm.

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Example: average yield calculated for a drum of 15 litres: 7 sqm applying a thickness of 3mm, > 4-4.5 sqm applying a thickness of 5mm. Leave to dry for one day for the final finish, it is important to respect atmospheric conditions.

d. Finish

Immediately before applying the type of FINISH, which also is used to protect the TILLICA PASTA, apply a coat of FIXATIVE ANTIBACTERIAL SUBSTANCE and proceed with the fresh subsequent processing using the “finishing products” of the Natural Calk line (plaster smoothing mortar, marmorino, dyes, etc.).

The finish must always be applied in at least two coats: the first to cover the TILLICA PASTA, the second to level; unless otherwise requested, finish the second coat with a trowel and sponge. In particular, if the chosen finish is coloured and thick, there is no need to paint.

The types of finish are:

1. Thick finishes (usually used on external walls)
INTONACHINO White or coloured C001 and C002 > natural Calk > **Packaging** 25kg drums > **Average yield** 2.5-3 kg/sqm two coats
MARMORINO White or colored C001 and C002 > natural Calk > **Packaging** 25kg drums > **Average yield** 2.5-4 kg/sqm two coats, average of 4-5 sqm/l.
Tinted finishes for indoors and outdoors
2. Natural Calk smoothing mortar **Average yield** 3kg/sqm two coats.
Milk White or coloured Natural Calk **Average yield** 50-60sqm/drum roll/brush
3. For very absorbent surfaces for any kind of work use Primer 12 Natural calk **Packs** of 5-25 l. **Average yield** 8-10 sqm/l, apply by brush-roller, wait 1-2 hours before the next application.

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Tillica Pasta Kit/System

DECLARATION OF PERFORMANCE No 102-CPR-T



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e. Protective Substance

On a perfectly dry surface, apply **BIO PROTECTIVE mix**>. Yield 1l/4-5 sqm. Apply by spray starting from the bottom upwards with a surface humidity of 15-20% (see the website www.naturalcalk.com to choose between the finishes of the Natural Calk line).

Finishing for **inner walls**

White C001 Natural Calk INTONACHINO plaster (standard, in the TILLICA PASTA SYSTEM) or Natural Calk SMOOTHING MORTAR finish. These finishes are to be painted by brush, roller or spray with MILK Natural Calk (white or coloured MILK Natural Calk > **Packaging** of 5 l or 17 l > **Average yield** 5 sqm with 1 litre.

The **finishing processes** (trowel, spot, sponge float, etc.) depend on the skills of the applicators, the aesthetic and technical requirements required. Thanks to the total absence of chemical or synthetic additives and the eco-sustainability of the product, it is also possible to create fine finishes and frescoes on TILLICA Paste. For these types of finishing, contact the manufacturer.

ATTENTION! To maintain the performance of the TILLICA PASTE KIT/ SYSTEM and guarantee its result, it is recommended to use only products (antibacterial fixative, marmorino, plaster, smoothing mortar, bio protective mix, primer 12, various finishes) from the NATURAL CALK LINE

It should also be remembered that Natural Calk products are **rot-proof** and have an unlimited duration, if stored correctly (see the specific technical data sheets), and that TILLICA PASTE **does not waste**, does not create waste and is totally recyclable, complying with European regulations for the use of **ECO-SUSTAINABLE** products. Natural Calk products with **slaked lime**, being without additives, must not be applied if the T° is lower than 5° C or higher than 30°C, paying attention to use in excessively ventilated environments or at risk of rapid drying, protecting the surface from severe temperature changes and rain for at least the following 48 hours. The company only takes over responsibility for the product upon delivery to the factory; the application, use and processing are the sole responsibility of the customers. The company reserves the right to change the composition while maintaining its characteristics.

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Where to apply

Application on new walls without plaster

1. Plaster with mortar, preferably lime
2. Apply a coat of Natural Calk SMOOTHING MORTAR
3. Proceed with the TILLICA PASTA SYSTEM (processing a., b., b. above)

Application on new rough walls

If the rough plaster was applied in a workmanlike manner, proceed with the TILLICA PASTA SYSTEM (processing a., b., C. above).

If the substrate is uneven, before proceeding with the TILLICA PASTA SYSTEM, smooth the surface with a coat of Natural Calk SMOOTHING MORTAR.

Natural Calk SMOOTHING MORTAR > Packaging 25 kg drums> Average yield 2 kg/sqm per coat on civil plaster; 1.2 kg/sqm per coat for coat shaving. The yield may vary in relation to the absorption of the support

Application on old walls

1. Remove all layers of existing paint, and possibly get not leave the to the **rough plaster**. If there is a thin layer of paint, sand the surface to open its pores, allow it to transpire and favor the penetration of the antibacterial fixative. Where necessary, if after the dismantling of existing paints, the surfaces are particularly uneven, **regularize the support** with Natural Calk ANTIBACTERIAL FIXATIVE SUBSTANCE and Natural Calk SMOOTHING MORTAR. In the presence of cracks, enter a plaster net into the LEVELING MORTAR.
2. Proceed with the TILLICA PASTA SYSTEM (process phases a., b., c. above)

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Application on drywall, prefinished surfaces, existing coats, new or existing doorsteps/window sills

Apply with a roller a coat of Natural Calk BIO-SMOOTHING SUBSTANCE diluted with 20% water, consumption 0.50 kg /sqm, packaging 25 kg drums and wait for it to dry before proceeding with the subsequent processing TILLICA PASTA SYSTEM (steps a., c above). Packaging 15 lt drums > Average yield 0,7 lt/sqm

Application on porous materials (cork, wood, calciosilicate, etc)

1. Apply a coat of Natural Calk ANTIBACTERIAL FIXATIVE SUBSTANCE Natural Calk ANTIBACTERIAL FIXATIVE SUBSTANCE > **Dilution** with 30-40% water **Packaging** 1-5-25 l drums> Average yield 7/10 sqm with one litre If the surface is too absorbent, apply a coat of Natural Calk PRIME 12 with a brush or roller. **Package** of 1-5-25 l> **Average yield** 4-6 sqm/l depending on the porosity.
2. When fresh, apply a coat of Natural Calk SMOOTHING MORTAR Natural Calk SMOOTHING MORTAR > **Packaging** 25 kg drums> **Average yield** 2 kg/sqm per coat on civil plaster; 1.2 kg/sqm for hand for coat shaving. The yield can vary according to the support absorption
3. Proceed with the TILLICA PASTA SYSTEM (phases a., b., c. above)

Application on smooth surfaces

Iron, steel, plastic, osmotic cement, synthetic skim coats and adhesives – applicable on non-absorbent surfaces, synthetic renders, and thermal insulation adhesives.

Apply TILLICA PASTA PLUS (ISO.TILLICA.PA.PLUS), followed by FISSATIVO ANTIBATTERICO PLUS.

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Application under the radiant heating tubes

The TILLICA PASTA SYSTEM fits the maximum performance radiant heating (both on floor and wall), particularly if the slab is made by LIME Natural Calk LIME PUDDY following the LIME SLAB SYSTEM of the manufacturer. For the peculiarities of such processing, contact the company.

For further details, please refer to the data sheets for each product mentioned in this sheet on www.naturalcalk.com or by contacting the manufacturer directly.

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