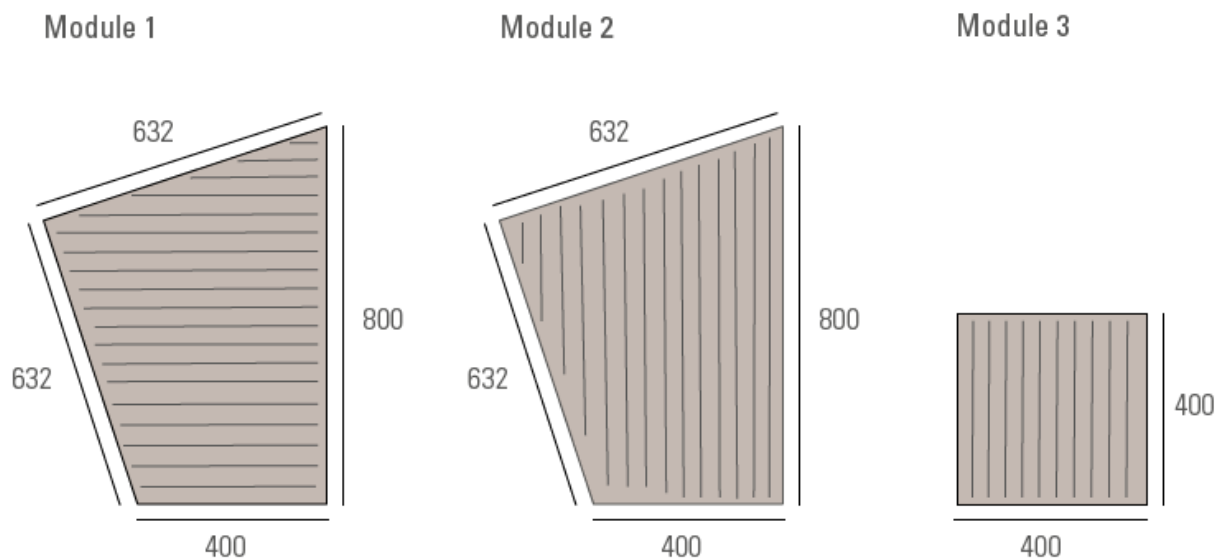


LISTONE GIORDANO NATURAL GENIUS PERIGAL

Design Paola Lenti

Perigal is an original wooden floor inspired by the celebrated, dissection-based proof of the Pythagorean theorem and its brilliant geometry. An unusual union of knowledge provides new lifeblood – it is in fact the outstanding result of the encounter between Listone Giordano's wealth of wood expertise and Paola Lenti's unmistakable, signature style.

Perigal is a **modular floor covering** complying to the European Norm UNI EN 14354



TOTAL THICKNESS:	13 mm
TOP LAYER THICKNESS:	1 mm of Linden veneer
SUPPORT:	multilayer plywood counterbalanced
INSTALLATION SYSTEM:	glued
PROFILE:	Each individual module is groove profiled on four sides; loose wooden tongues are supplied with the flooring to join the modules – chamfer on all four edges

FINISH

OLEONATURE

Air-dried natural oils-based finish. The oils-based finish incorporates colour pigments. Thanks to the industrially applied final protective coating, the Oleonature finish ensures easy maintenance compared to other oil finishes and better resistance against household liquids' penetration.

Perigal is available in the colors Graphite, Ottanio, Acqua and Olio.

Products with natural oil finishing tend to get a yellowish colour tone, should these products be kept, for instance, in the boxes for a longtime or not being exposed to light and air. It's an utterly natural and transitory phenomenon.

This effect is reversible within a few days and the wood can restore its original appearance, once the boards are exposed to air and direct sunlight whilst in an environment with artificial light it may take up to few weeks.

Wood is a natural material, therefore colour tone and absorption of the finish may vary from one board to the other, or even in the same board according to the variation of its fibre. These colour tone variation is visible even after the application of colour pigments proving the authenticity and the uniqueness of each board.

Oleonature is complying with antibacterial Crystalcare technology.

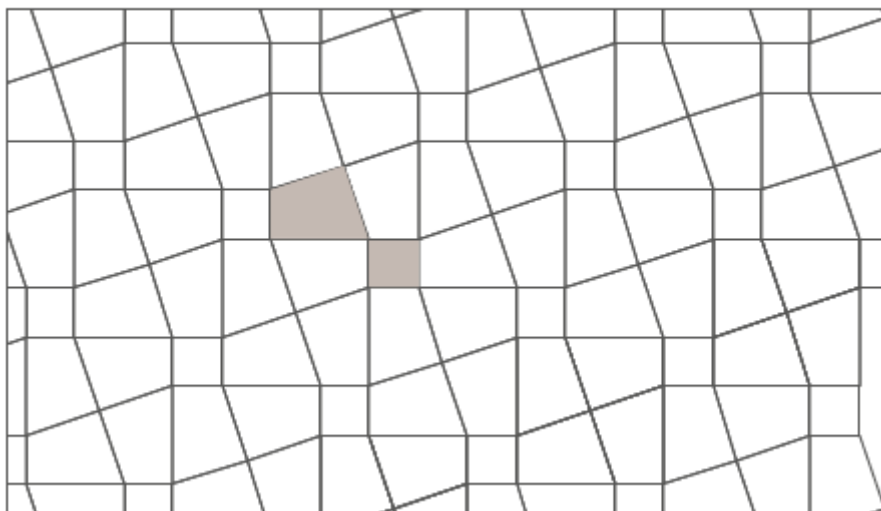
GRADE

FIBRAMIX

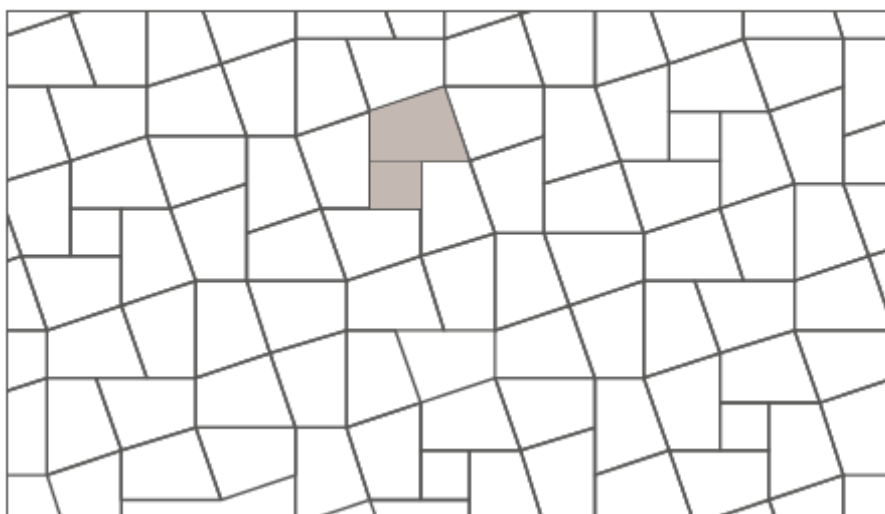
Mixed grain, possible small knots in some wood boards.

INSTALLATION PATTERNS

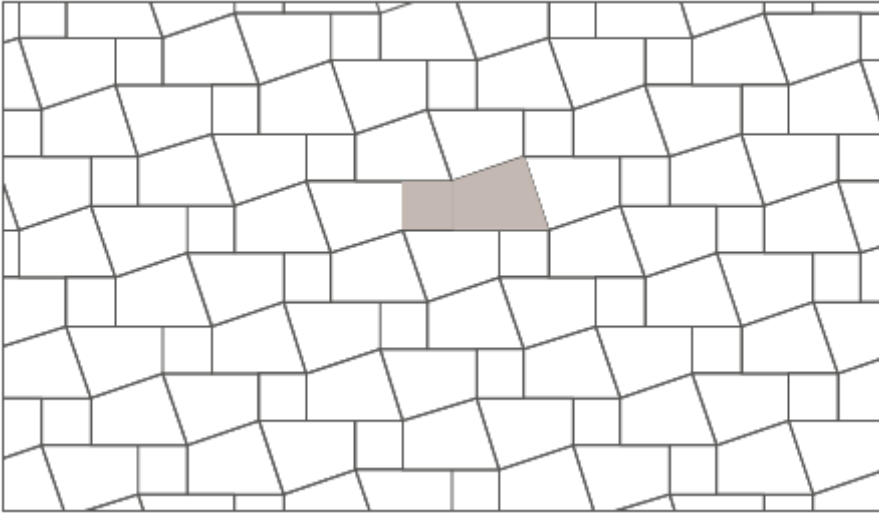
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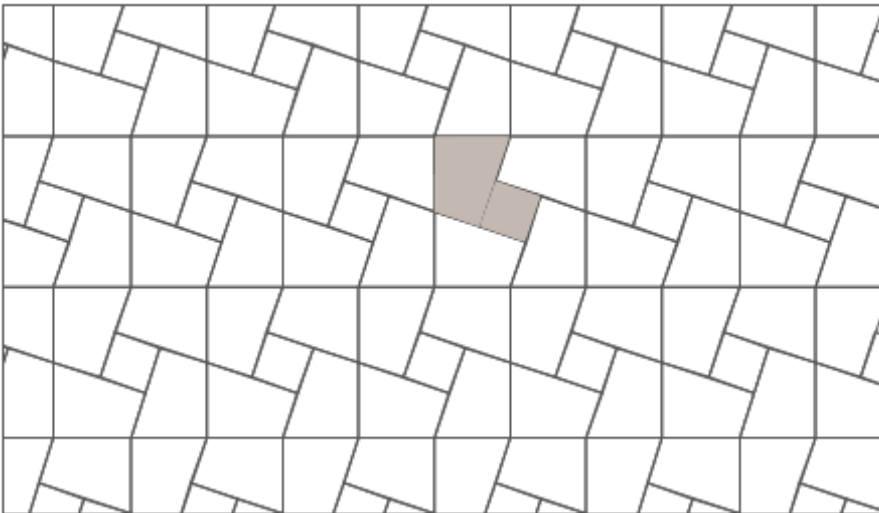
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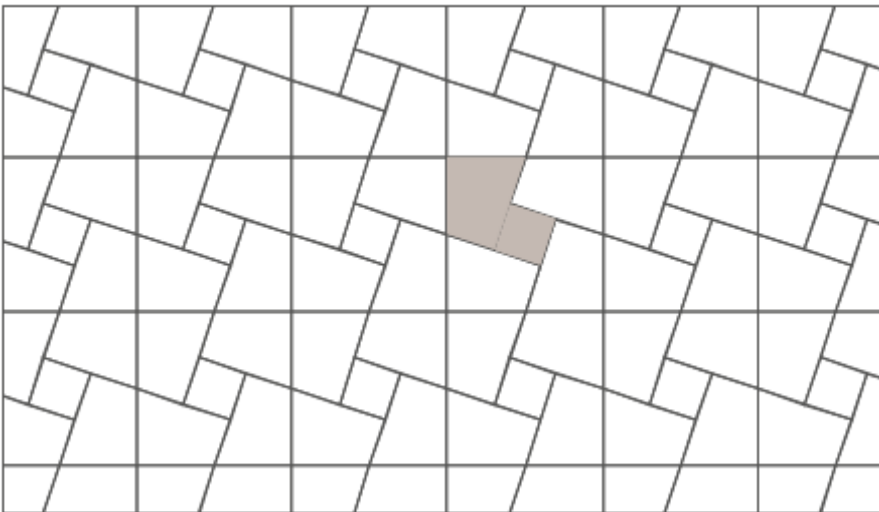
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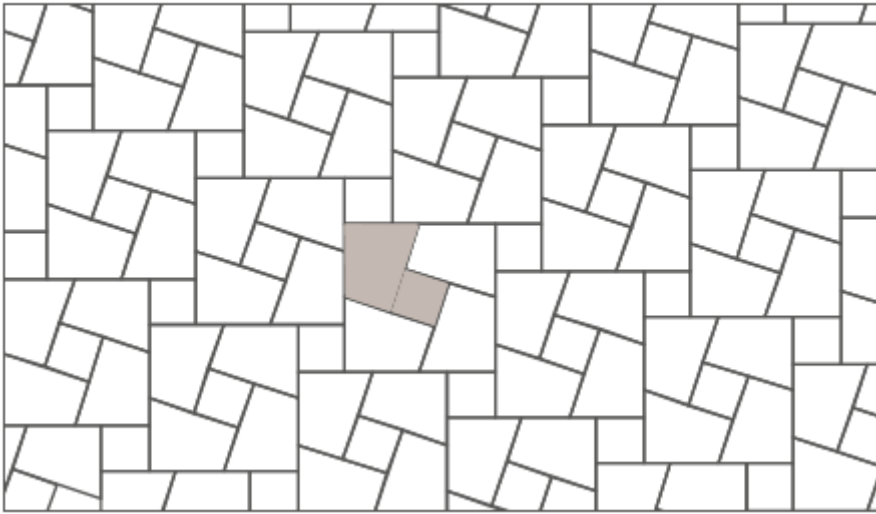
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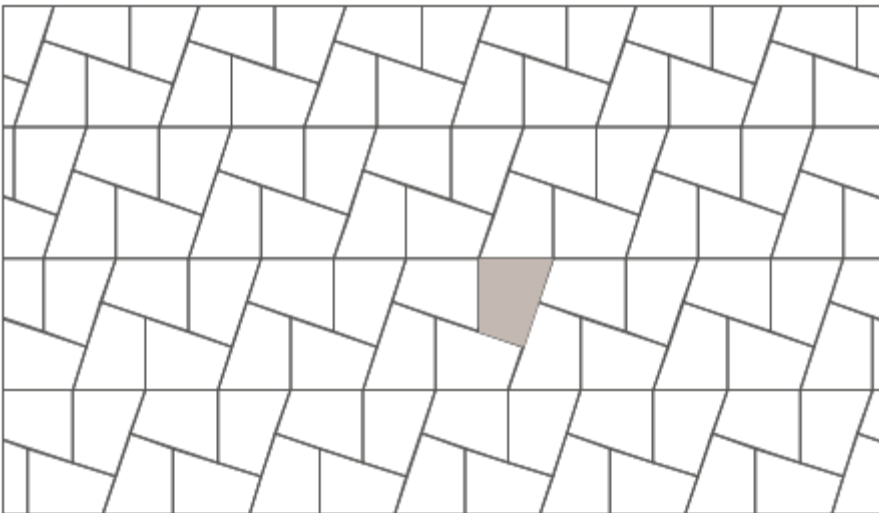
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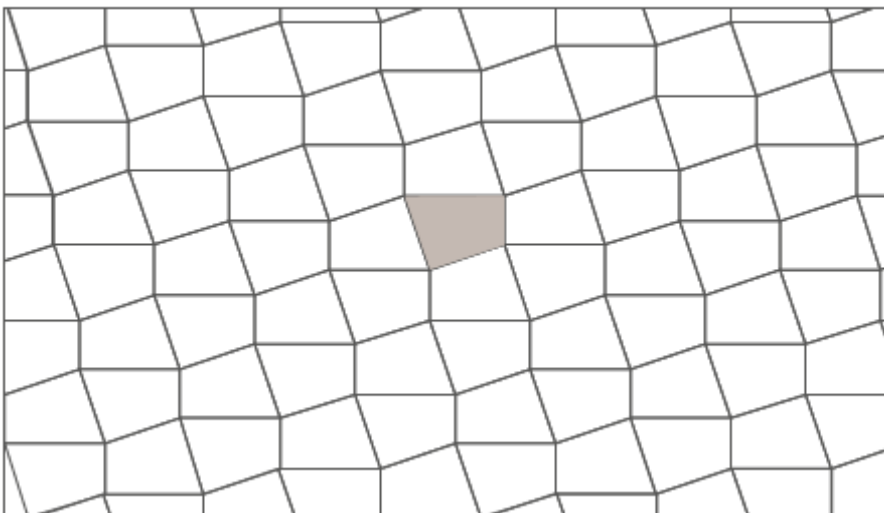
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DIRECTIONS FOR LAYING

INTERIOR CONDITIONS

Before the installation make sure that all work on site (decoration, installation of sanitary fixtures, etc.) has been completed. Maintain the humidity level between 45% and 65% and the temperature between 16 and 25°C because outside of these ranges the boards may suffer deformation and adhesives and other products used for the installation may not work correctly.

SUBFLOOR CHECK

The subfloor on which the hardwood flooring is to be installed must be smooth, level, and have a compact surface so as to guarantee the best possible contact between the underside of the planks and the subfloor itself.

Carry out the following checks before installation:

- **Smoothness/Flatness of the subfloor:** a 2 metre long straight edge should be placed on the subfloor, the maximum allowable tolerance is 2÷3 mm.
- **Concrete subfloor superficial structural strength:** when hammering the surface no marks or deep cracking should appear.
- **Concrete subfloor superficial compactness control:** it should not be possible to create deep scratches or excessive dust when scrapping the surface of the subfloor with a nail.
- **Fissuring:** small fissures created as a result of the normal shrinkage of the cement are allowable, but excessive cracks, in particular those which permeate throughout the complete thickness of the subfloor, must be properly consolidated by suitable and permanent means.
- **Cleaning:** before the installation begins it is very important to carefully clean and check the surface of the subfloor.
- **Moisture content:** the moisture content of the subfloor has to be within the recommended limits for the specific type of subfloor. The subfloor residual moisture control has to be executed only using calcium carbide hygrometer (other tools could give wrong measurements in certain conditions) and the maximum values allowed for the installation are:
 - 2,0% for a concrete slab (max. thickness 80 mm);
 - 0,4% for anhydride slab;
 - 10,0% for wooden panels.

In case of thick subfloor this control has to be done on the total thickness, not only on the surface.

In case of installation on underfloor heating system the maximum values allowed are lower (see paragraph "Installation on underfloor radiating system" below).

Should these requirements not be fulfilled, implement proper operation before installation.

The laying of Listone Giordano® can also be carried out on pre-existing flooring, provided that they are checked all the conditions of flatness, solidity, compactness, cleaning of the surface, absence of cracks and of residual moisture or lift necessary to ensure proper contact at every point of the surface and the protection from external side. For installation over existing hard flooring (ceramic, stone, etc.), should in particular ensure that the surface is likely to ensure proper bonding. Where necessary action must be taken with a preliminary treatment of deep cleaning, degreasing, scratch the surface by mechanical means and/or suitable chemicals.

The glued installation is not compatible with pre-existing type textile floor coverings (i.e carpets) or resilient (linoleum, pvc, etc.), which must therefore necessarily be removed.

MATERIAL STORAGE

Store the boxes of hardwood flooring in:

- safe places without the risk of damages caused from other materials or by handling of not authorized people;
- indoor and dry places, protected from the rain and the snow and without puddles;
- places with temperature between +15°C (59°F) and +30°C (86°F).

In any case boxes must be kept raised off the ground, for example using a pallet (the originally packed pallet, if possible).

In very cold countries (for example extreme northern or southern part of the world), it is necessary to stock parquet in a heated storage, at least to 15°C (59°F).

In very warm countries (for example countries in the equatorial area of close to it) it is necessary to stock parquet in refrigerated storage, not more than 30°C (86°F).

These directions are valid also for the transportation.

Don't store the hardwood floor in places with a direct effect of the sunlight (for instance open containers or warehouses with metal roof).

Open the boxes only as the flooring is being installed and no more than what is needed.

INSTALLATION SYSTEM

Listone Giordano® Natural Genius Perigal can only be installed by fully adhering it to a suitable subfloor.

It must not be installed as a floating floor.

GLUE DOWN INSTALLATION

During the glued installation we recommend that suitable weights are placed on the header joints after interlocking the boards in order to improve their adhesion to the subfloor.

Choose an adhesive that is compatible with the characteristics of the sub-floor and that won't transmit humidity to the wood (do not to use adhesives that contain water).

Ecolfit® Listone Giordano® is the one component adhesive recommended for all the range of our hardwood floors.

The glue is to be applied homogeneously onto the whole subfloor surface (do not apply it on individual strip/board or discontinuously). Do not apply the glue directly underneath the boards.

Spread the adhesive on the subfloor only using a suitably notched trowel and lay the boards on top by interlocking them, if possible, using only a little pressure.

The boards have to be joined only by hands avoiding the use of other tools (for instance the mallets) that can create damages on the surface and the corners of the boards.

During this operation take care not to allow adhesive into the joints or on the surface.

It's forbidden the use of Pulplus® Listone Giordano or aggressive solvents to remove adhesive residues on oil finished hardwood floor especially if stained.

Around the entire perimeter of the interiors, including the point of junction with thresholds of other flooring materials, it is compulsory to form an expansion joint amplitude of about 10 mm to be filled with appropriate skirting along the vertical walls and thresholds in connection with other joints in the floors.

The specific shape of Listone Giordano® Natural Genius Perigal floor boards creates a certain amount of waste during the installation process that is higher if compared to rectangular wood boards.

INSTALLATION ON UNDERFLOOR RADIATING SYSTEM

When the glue down installation is over an underfloor heating system, it is necessary first of all check that:

- the distance between the wood and the heating pipes or cables embedded in the screed is at no point less than 30 mm;
- the heating system is one that functions at a low temperature
- the system is provided of proper regulation tools in order to avoid that **the contact temperature of the hardwood floor surface will exceed 27°C.**

Should these indications not be fully complied the floor could suffer not only dimensional deformations and gapping between the boards but also permanent damages.

The construction characteristics of the sub-floor have a greater importance in case of installation on underfloor radiating system; particularly **the maximum residual humidity that cannot be more than 1.7% CM.**

The glue down installation on an area with an underfloor heating system is strongly advisable to reach best performances both regarding the best conduction of heat into the rooms and because it confers greater dimensional stability on the planks (the variation of interior conditions creates minor deformations).

The thermal resistance values (the lower the thermal resistance, the better is the heating conduction) are reported in the table below:

PRODUCT	TOTAL THICKNESS	THERMAL RESISTANCE R [m ² K / W]*
Perigal	13,0 mm	0,083

For any further information about installation see the sheets PO 1 - Listone Giordano® over underfloor heating system.

AFTER THE INSTALLATION

At the end of the laying remove the dirt and dust found on the floor's surface by cleaning with a vacuum cleaner equipped with a brush suitable for hardwood floors.

Wash the floor with Green Listone Giordano® diluting half a cup (approximately 100 ml) of product in a 5 l bucket of water.

INSTRUCTIONS FOR USE

Maintain the humidity level of the atmosphere between 45% and 65% and the temperature between 15 and 30°C. This is also the same environmental conditions recommended for ensuring people's comfort and health.

The use of humidifiers or dehumidifiers is highly recommended in order to keep the above mentioned conditions.

Temperature or air humidity level not complying to the conditions above may cause deformations, cracks and sometimes permanent damages of the hardwood floor.

Use protective felt pads for furniture, chair legs, etc.

Any armchair on castors should be covered with suitable rubber.

We recommend the use of a proper door-mat to clean the shoes.

Rugs and carpets should be removed from time to time especially soon after hardwood floor installation in order to avoid creating areas with different colour tone according to the natural oxidisation of the wood.

Objects with weight concentrated over small surface areas cause localised indentations in the surface of the wood.

Rubber shoes soles leave dirty marks on the surface which could prove hard to remove.

Not to use sticky tape and adhesives materials on the surface because, in case of remaining for a prolonged time or with high temperature, they can leave marks difficult to remove.

A slight darkening effect can appear in time in the deeper parts of the wood (brushings, sawings, etc.) due to the accumulation of the dust. Regular maintenance of the floor will reduce this appearance.

CLEANING AND MAINTENANCE

Never wash the floor with tap water only: it will not efficiently clean the surface of the floor and, moreover, the minerals contained in water may leave behind a residue that could affect the surface appearance of the floor.

Do not use liquids containing acid or basic concentrations, such as bleach or ammonia, which could create marks/halos on the wood that would be impossible to remove.

For proper cleaning and maintenance we advice to only use products recommended by ourselves for the various finishes as indicated in the following table:

FINISH	CLEANING	ORDINARY MAINTENANCE	PROFESSIONAL USE
Oleonature	Green	Revivo	/

You can find below directions for use of each product.

GREEN BIO**(Mild detergent for the cleaning of Oleonature finished hardwood floors)**

Remove the dust found on the floor's surface by cleaning with a vacuum cleaner equipped with a brush suitable for hardwood floors.

Shake well.

Dilute half a cup of Green Listone Giordano® (100 ml approximately) in a 5 l bucket of water.

Immerse a lint free soft cotton rag in the solution, wring well and pass it over the floor's surface using a long-handled floor brush/mop. Use a cloth that will not leave fibre residues.

No need to rinse.

In case of tough dirt wash the floor with Green Listone Giordano® in double dose.

Never exceed this concentration and don't use often this detergent in double dose: it may cause older appearance of the surface over a shorter period of time.

Do not repeat often this operation because the surface could appear less consistent.

1 litre of product is sufficient for washing approximately 10 times a surface area of 100 m².

REVIVO**(Natural oil-wax product to nourish and protect Oleonature wood floors)**

Revivo Listone Giordano® is a protective and renovating liquid: its regular use slows natural wear caused by foot traffic and restores an homogeneous appearance on the surface.

Before applying it, thoroughly clean the surface of the floor using Green Listone Giordano® in double dose according to the instructions above. Always use Revivo Listone Giordano® at temperatures above +15°C.

Shake very well.

Wait the floor will be well dry.

Spread a thin and homogeneous layer of the product according to the wood grain. Use a soft lint free cotton cloth that will not leave fibre residues underneath a long-handled floor brush or by hand.

In case of brushed or open pore floors we recommend to apply a limited quantity of Revivo Listone Giordano® because it could permeate the brushings or the pores making it difficult to be removed.

Once the product is applied, the floor's surface should have a slightly wet appearance.

After 1-2 hours the floor is dry and can be walked upon.

1 litre of product is sufficient for spreading a coat on a surface area of approximately 30 m².

Use this product approximately every 6 months.

We recommend more frequent maintenance operations in case of average and heavy-duty traffic environments.

CERTIFICATIONS



CE CERTIFICATION

All the products of the collection Listone Giordano® Natural Genius Perigal strictly comply to all CE rules regarding hardwood floors.



AIR EMISSIONS

Certification on the emission level of volatile substances in the rooms that present a toxic risk through inhalation.



FORMALDEHYDE

All the products of the collection Listone Giordano® Natural Genius Perigal comply to the class E1, which is amongst the strictest European regulations (UNI EN 14342).

US TSCA

CARB2 / TSCA Title VI Certification

All plywood panels used for the manufacturing of Listone Giordano® floors meet the requirements established by US TSCA Phase 2 standards for Formaldehyde emissions with limits lower than the most restrictive European class, that's to say the E1.



ANTI-BACTERIAL FINISH CRYSTALCARE

All finishes are antibacterial certified by CATAS S.p.a laboratories according to ISO 22196:2007 regulation.



DIBt CERTIFICATION

DIBt (the German Structural Engineering Institute) certifies that all Listone Giordano® wood floors respect the strict emission limits of Volatile Organic Compounds (VOC) required by the AgBB/DIBt regulation.



ISO 9001

Quality Management System certification.



ISO 14001

Environmental Management System certification for the Miralduolo di Torgiano (PG) factory

MADE IN

All the products of the collection Listone Giordano® Natural Genius Perigal are Made in Italy.

IMPORTANT INFORMATION ABOUT HARDWOOD FLOORS

WOOD AS A LIVING MATERIAL

Wood is a “living” material interacting with the environment therefore it is affected by exterior elements such as light, UV rays, temperature, humidity and daily use (wear and tear).

COLOUR

The colour of wood largely depends upon particular substances known as extractives which change due to the exposure to light. This results in alterations and more or less marked variations from the original colour of every type of wood flooring. Due to the higher extractives content in tropical wood species, these species are especially prone to chromatic changes usually evolving into a darker brown colour tone. Iroko and Doussié are two of the species that experience a stronger colour variation. Doussié especially may show localized effects of rapid and intense oxidation even on boards originally of the same colour tone. Under specific conditions these alteration traces of mineral substances, where are a natural part of the wood structure, may become more evident. Teak may initially show less evident colour variations. These variations tend to mitigate and homogenize to a middle-clear tones overtime. Even Oak, however characterized by a good colour stability in relation with other wood species, is due to change overtime and tends to warmer colour tones, whilst intensifying the yellow hue. This phenomenon occurs even in colour-pigmented products (i.e “Michelangelo” collection).

The long exposure of some wood species to intense and direct sunlight, such through window-panes, may cause discolouration (UV rays produce these effects on materials other than wood). In order to prevent this phenomenon, we recommend the use of curtains or special UV filtering films to be applied to the glass panes.

MEDULLARY RAYS (Silver Figures)

Strips from a perfect radial section of a log in some wood species (especially Oak and Beech), feature straight grains and typical silver figures, the so-called medullary ray (still evident in the colour finishes as well). This type of graining is the result of the perfect radial cut of the log and enhances the quality and the value of the wood product. In addition to the the better aesthetical appearance it's an indication of improved technical performance (regularity of the fiber, dimensional stability water proof, impermeability, etc.).

SAMPLES

Wood is a natural material, not characterized by uniformity-regularity: two elements of the same piece of timber will never have an identical aesthetic appearance. Therefore samples made of few wooden boards can only represent an illustration or general idea and cannot fully show the different tones, grains and uniqueness.

As mentioned above, wood is prone to alter its colour tone overtime, due to exposure to light and air. Therefore a recently installed wood floor may typically show a different aesthetic and colour tone compared to a sample panel of the same product which has been exposed to natural light for a period of time.

WEATHER CONDITIONS

Wood is naturally affected by dimensional variations due to humidity and temperature of the environment. In order to avoid damages and unwanted effects, the climate conditions of the rooms should meet the following requirements: air temperature must remain between 15°C and 30°C and relative humidity must be between 45% and 65%. These conditions provide as well a suitable and healthy environment to live in. The prolonged exposure to a very dry atmospheric condition can lead even a modern and technologically advanced multilayer product to shrink and gaps to appear in between wood strips. This phenomenon is reversible and gaps are due to close again once correct climate conditions are restored.

Extreme dryness or high humidity in the air may generate a certain level of stress and alterations in the wood structure, very high at times, in the worst cases this can create micro-fractures on the top hardwood layer (due to the sliding of the interface in between growth rings consequential to the exceeding elastic limit). For these reasons it is compulsory that proper climate conditions are to be maintained both during the installation process and afterwards, even if the premises are unoccupied.

In some situations, particularly in the winter months to ensure compliance with the conditions mentioned above the use of an air humidifier may prove necessary. In the case of heated floors, in addition to the requirements relating to temperature and humidity of the air, the temperature's limit of the floor surface, when the system is in function, must not exceed 27°C.

FRACTURES

The appearance overtime of micro-fractures on the top hardwood layer is a natural phenomenon and inevitable in statistic terms even if recommended climate conditions are to be maintained.

HARDNESS

The individual hardness of all wood species processed to manufacture products featured in this pricelist are suitable to become hardwood flooring. However surface indentations may arise in even the hardest of woods, if the hardwood floor is subjected to knocks, falling objects, in addition to highly concentrated weight (stileto heels, ladder, etc.).

HANDCRAFTED WORKS

Atelier and Natural Genius wood flooring collections with crafted treatments feature non homogenous, dimensional and aesthetic characteristics typical of a hand-made product. Therefore prospective tolerances related to the planarity of the boards, or even within the individual boards (i.e. planarity, roughness or colour tone of the surface) are not to be considered by any means a defect but on the contrary the craftsmanship value of the products itself.

The distinctive crafted finishes can create some irregularity and splintering of the wood surface where cloth used for cleaning and maintenance may get trapped. These elements of irregularity and splintering are to be considered (taken into account) when walking bare feet on the floor.

VARNISHES

The wear and tear is prone to alter the shine level of the floor surfaces as time passes, especially in high-traffic areas. A correct maintenance can keep this phenomenon under control.

NATURAL OIL FINISHES

Products with natural oil finishing tend to get a yellowish colour tone, should these products be kept in the boxes for a longtime or not being exposed to light and air. It's an utterly natural and transitory phenomenon. This effect is reversible within a few days, once the wood boards are exposed to direct sunlight whilst in an environment with artificial light it may take up to few weeks before restoring the original appearance. The oils-based finishing has the characteristic to continue over time to permeate the wood fibers even while the material is still inside the packaging boxes. The possible appearance of surface dryness that you should notice on newly installed planks, will be restored with the application of the specific maintenance product after installation.

USE AND MAINTENANCE INSTRUCTIONS

Instructions of the correct use and maintenance of the wood flooring are available in the dedicated page of the website www.listonegiordano.com/international featuring the technical sheets.

We recommend checking it when selecting the product.