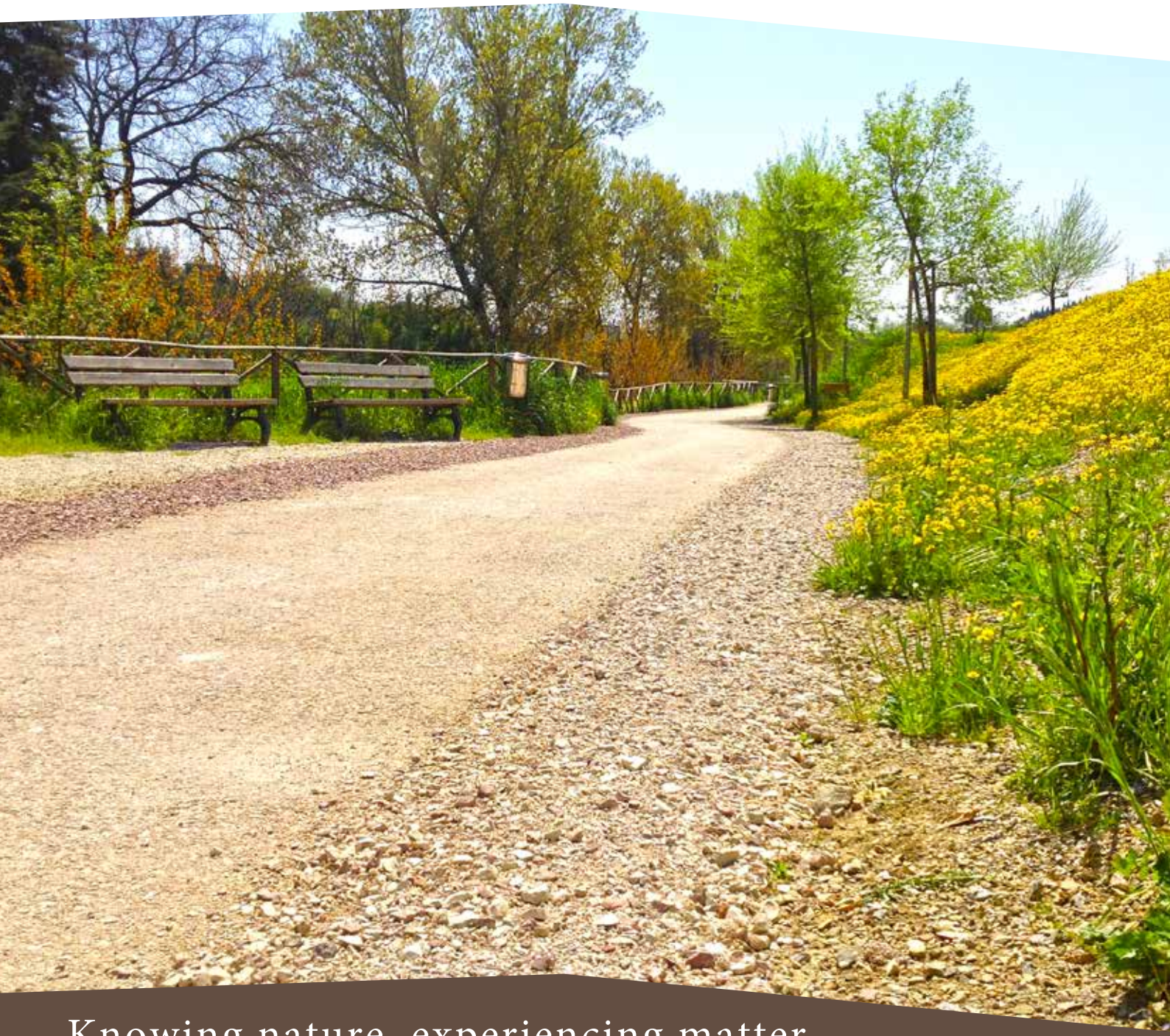
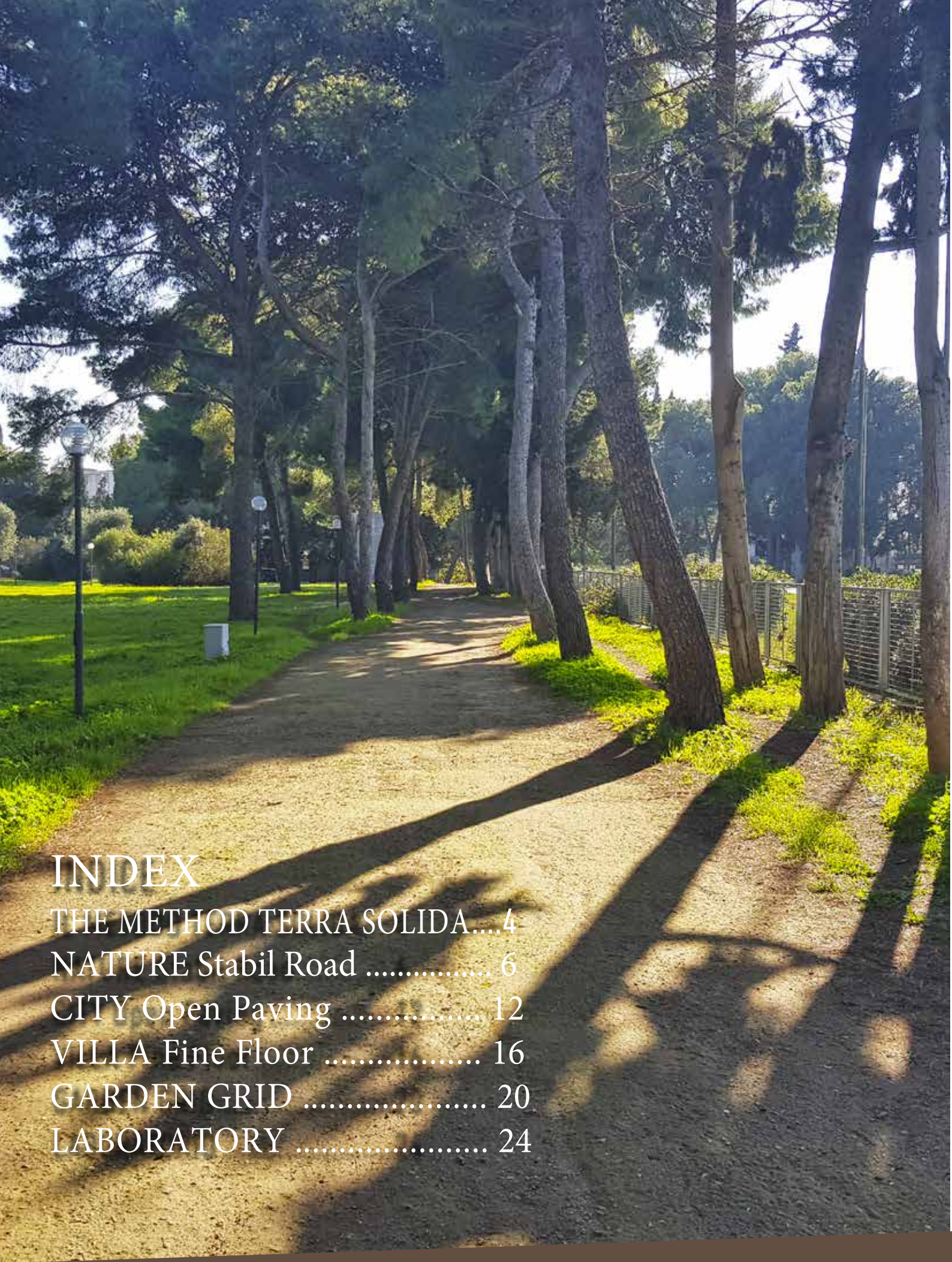
TERRA SOLIDA

THE OUTDOOR FLOORING
MADE ON SITE



Knowing nature, experiencing matter
and believe in building a sustainable landscape.



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Who we are

Terra Solida is a brand of Promotec, an Italian company with operational headquarters in Fiume Veneto in the province of Pordenone, active in the production and distribution of environmentally friendly technologies to be mixed with the soils present in situ or with inert materials from quarries or with recycled aggregates, for the construction of outdoor flooring with high functional performance characteristics and built on site.

USES

- **cycle paths**
- **driveways and parking lots**
- **dirt roads in marine, wooded areas, natural parks**
- **roads in green areas of wineries, dairy and agricultural companies**
- **viability in archaeological sites in areas subject to historical, landscape and environmental constraints**
- **golf courses, schools, green areas, sports facilities**
- **road sub-foundations**

THE TERRA SOLIDA METHOD

The satisfactory result of any initiative must always begin with having clear the final goal. Ours is customer satisfaction.
To achieve it, over the years we have refined a winning procedure, which for us has become our "good habit".
This is the Solid Earth Method.

- **TECHNICAL ADVICE** to public and private designers, companies and pre-packers for their respective skills and establish a synergistic union aimed at the success of the work

- **GEOTECHNOLOGICAL LABORATORY** within the company, is dedicated to the preliminary study of lands, aggregates and to the verification of the mix-design to be used
in situ

- **MOBILE LABORATORY** dedicated to assistance during the preparation phases of the mixture, the start of the implementation processes and the achievement of what has been achieved in the preliminary study

- **RESEARCH AND DEVELOPMENT** based on values such as innovation and sustainability, the continuous research and experimentation activity carried out by the technicians of our laboratory, also in collaboration with Italian and foreign Superintendencies, has allowed the development of environmentally friendly products thanks to which it is possible to create floors with performance in terms of mechanical resistance which are up to 70% higher than those obtainable with traditional methods.


TERRA SOLIDA
PRODOTTI ECOCOMPATIBILI
PER PAVIMENTAZIONI
IN TERRA STABILIZZATA
www.terrasolida.it
0434 554014 - info@terrasolida.it
TERRA
ECNICA

NATURE Stabil Road

The stabilized earth

Line of products that was created for the rediscovery of the values of landscape and ecological integrity typical of natural dirt roads, therefore free from concrete, asphalt and bitumen but which allows the overcoming of many of the functional limits such as dustiness, mud, the presence of holes and tracks traced over time by the passage of tires.

Nature Stabil Road, alongside the economy of resources, allows for the construction of flooring with a low environmental impact, which does not alter the important hydrogeological balances otherwise compromised, the conservation of landscape colors and other relevant aspects.

WHAT'S THIS?

It is an environmentally friendly technology for building earth floors, 100% recyclable, characterized by a natural appearance that does not alter or contrast with the surrounding environment.

WHY IS IT USED?

Nature Stabil Road allows to create flooring that is immediately practicable and with a longer useful life, obtained by contrasting the formation of ruts and localized subsidence.

They do not require periodic refilling of material, do not generate dust or mud and are safe because they prevent the formation of holes.

HOW TO USE IT?

It is mixed with the soils present in situ or inert from quarries or with recycled aggregates deriving from demolitions in compliance with the most recent environmental regulations.

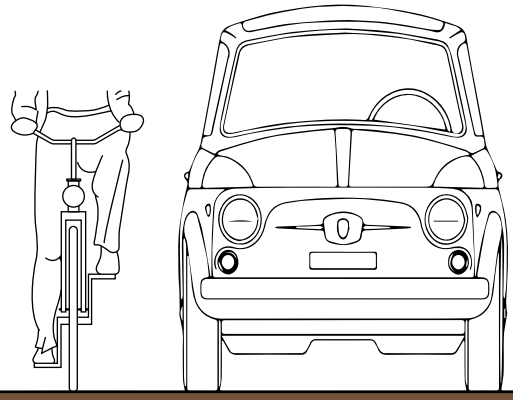
FIELDS OF USE

For the construction of cycle paths, rural roads, car parks, paths in parks and gardens, sports facilities, golf courses, dirt roads, wineries, playgrounds, archaeological sites, roads in areas with environmental restrictions, etc.

1 STABILIZED FOR FOUNDATION
Cycle and pedestrian path Md ≥ 50 Mpa, Driveway Md ≥ 80 Mpa

2 INERT TERROSO LEGATO WITH NATURE STABIL ROAD TECHNOLOGY
Cycle and pedestrian Rc ≥ 10 Mpa - R t.i. ≥ 1.2 Mpa, Driveway Rc ≥ 15 Mpa - R t.i. ≥ 1.7 Mpa

3 INERT TERROSO SLEGATO



MECHANISM OF ACTION

1st PHASE

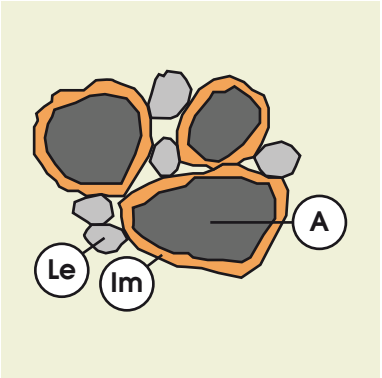
The active ingredient **Stabilsana**, a fundamental component of **Nature Premix**, the specific binder for aggregates with the presence of clay, silts and humus, performs multiple and important actions:

Deactivating action neutralizes the organic films, acid and / or greasy, present in the soil which, if present to a high extent, would not allow an adequate wettability of the same by the binder.

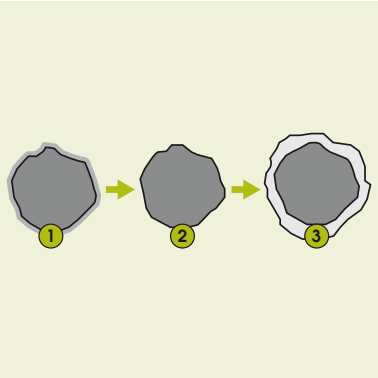
Sequestering action activates the removal of humic, organic and clayey substances from the surface of hard aggregates present in the soil.

Peptizing action * transforms humic, organic and clayey concretions removed into colloidal solutions, which in turn increase the binding capacity of the matrix.

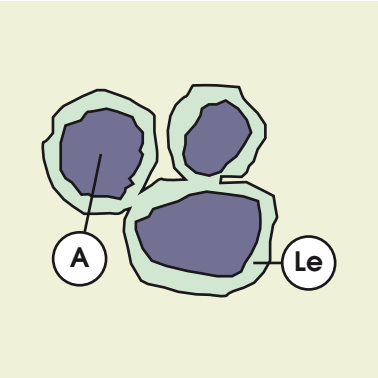
Dispersing action allows the hydraulic binder and the natural colloidal solutions removed from the aggregates to disperse and consequently cover, with thinner thicknesses than normal, the very large surface represented by the earthy material to be bound.



The impurities (Im) agglomerate on the surface of the aggregate (A) preventing the correct establishment of the binding matrix (Le) around the surface of the aggregate (A)



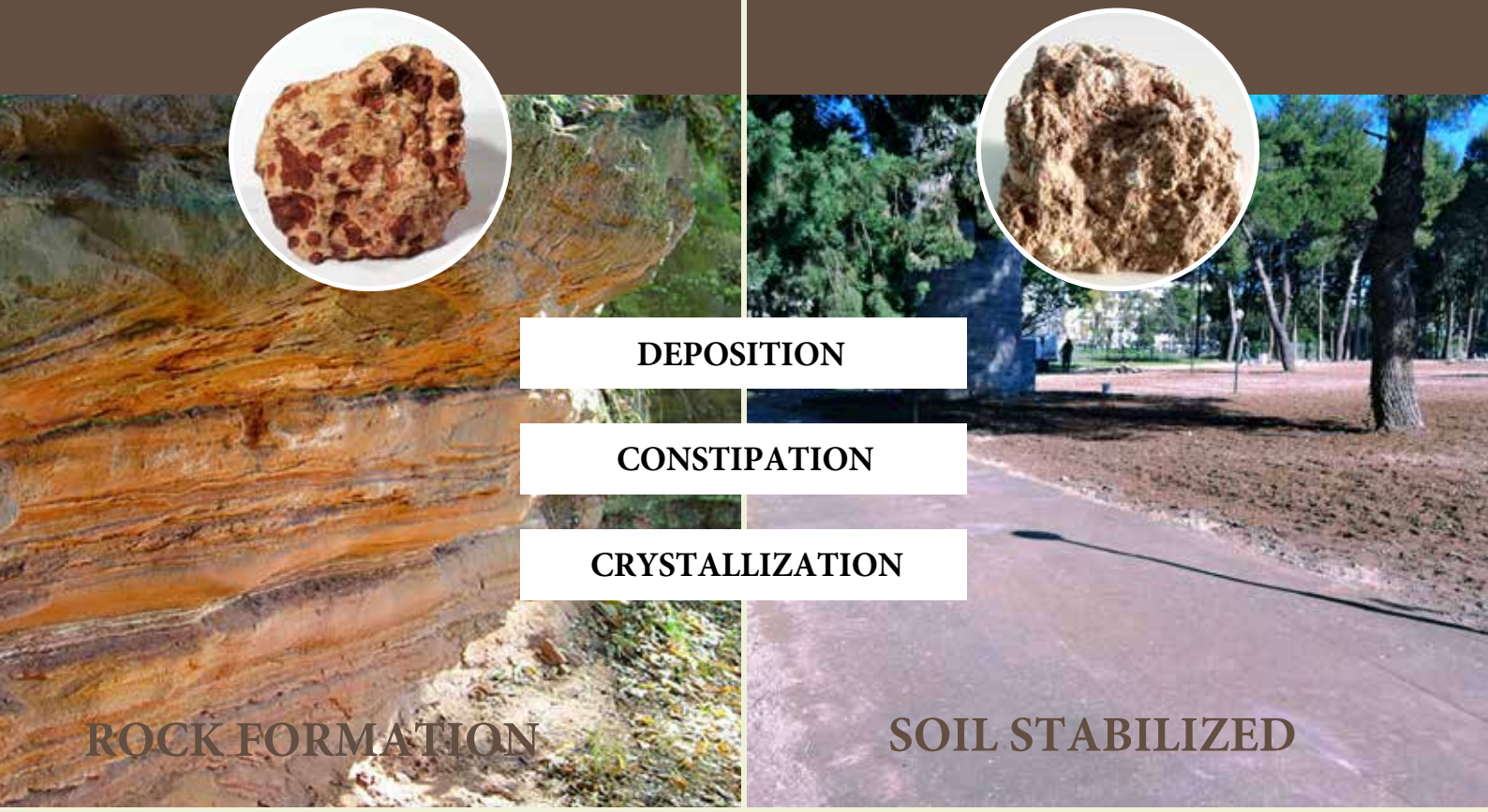
1. **The aggregate granule is enveloped by concretions**
2. **STABILSANA frees the surface of the aggregate from concretions**



3. **The correct binder-aggregate matrix can be realized**

*By "peptization" we mean the reverse phenomenon of "flocculation" and therefore the passage of a colloid from the solid "gel" state to the "sol" dispersed state, where the "gel" is represented by the agglomeration of clays and components organic natural soil. The characteristics of Stabilsana in terms of "peptizing agent" have been verified with empirical evidence derived indirectly from the UNI EN 933-8 standard: "evaluation of purposes. Sand equivalent test ".

In practical terms, the empirical test cited is proposed to measure and compare the ability to disperse the agglomerations mentioned, in a significantly clayey soil, using normal water (as it is) and water added with STABILSANA. The thicknesses of surface settling, usually found with water added with STABILSANA, are generally 20 - 30% higher than those determined by normal water.



2nd PHASE

Once the adhesion condition has been created on the surface of the aggregate, the action of Nature Premix is directed towards the free water present in the materials to be stabilized, responsible for the phenomena of plastic deformation, which is chemically adsorbed through hydration. of the oxides that make up the Nature binders. In this way, complex stable hydrate salts are generated, capable, after a few hours, of modifying the physical-mechanical behavior of the treated soils.

The mechanical performance of consolidated soils increases so significantly that, after 24-48 hours, the supports can be considered load-bearing.

The hardening process is comparable to the natural geological process called diagenesis, responsible for the transformation of dissolved sediments into rock. Diagenesis includes the set of chemical and physical transformations undergone by a sediment after deposition and during and after lithification. Significant changes in mineralogy and rock structure can occur during diagenesis.

In the diagram above the analogies of the two processes can be understood.

NATURE PREMIX Binder for soils with the presence of clay, silts, humus

Ready-to-use premix, specific for stabilization interventions of natural granular aggregates, consisting of STABILSOLID 20.15, an environmentally friendly binder-consolidating agent based on hydraulic limes and inorganic oxides + STABILSANA, inertizer of the organic films surrounding the soil particles. The mixture acts by converting the latter into colloidal substances that contribute to the cohesion of the base conglomerate, as well as to improve the efficiency and mechanical performance of the finished flooring. The quality of raw materials, carefully selected and mixed, in which the absence of radioactivity is certified and the non-additivation in the production phase with secondary materials coming from waste from other industrial processes, allows to bind to lands of different classes of belonging and to bring a significant increase in mechanical-performance requirements of the treated materials, keeping their original aesthetic appearance almost unaltered, thus ensuring the lowest possible environmental impact. The addition of other hydraulic binders is not envisaged.

STABILSOLID 20.15 Binder for non-plastic aggregates

Eco-friendly binder-consolidating mixture based on hydraulic limes and inorganic oxides, specific for stabilization of natural granular earthy aggregates. The quality of the raw materials, carefully selected and mixed, in which the absence of radioactivity is certified and the non-additivation in the production phase with secondary materials coming from waste from other industrial processes, allows it to bind to lands of different classes of belonging and to bring a significant increase in the mechanical-performance requirements of the treated materials, while maintaining them the original aesthetic appearance is almost unchanged, thus ensuring the lowest possible environmental impact. The addition of other hydraulic binders is not envisaged.

STABILGUARD Surface treatment - consolidating

Anti-dust consolidating surface treatment in aqueous dispersion, specific for application on bonded and stabilized natural inert flooring. The action of Stabilguard develops through the saturation and consolidation of the fine fraction of the aggregates making up the flooring, breaking down the surface detachment of dusty material.

STABILWET Surface treatment - wet effect

Revitalizing and water-repellent treatment in aqueous dispersion, specific for surface application in bonded and stabilized natural inert flooring.

STABILSANA Additive for soils with the presence of clay, silts, humus

Natural additional compound to be added to mixtures made with natural soil or quarry stabilized and hydraulic binders (Stabilsolid 20.15 or traditional binders such as cement or hydraulic lime), for the construction of paths and roads, also suitable for vehicles, in stabilized earth, with "Beaten earth" and with zero environmental / landscape impact. Depending on the intended use, the type of hydraulic binder envisaged and the characteristics of the aggregate to be used, the optimal dosage of binder and mixing water will preferably be defined through appropriate qualification tests in the geotechnical laboratory.

STABILBLEND Additive for non-plastic aggregates

Liquid polyfunctional additive specially formulated to improve the rheology of the natural aggregate-traditional hydraulic binder mixture, facilitating both manual and mechanized application. It acts as a water retainer by promoting proper hydration of the binder allowing better adhesion between binder paste and aggregate. It also acts as a water reducer, to the total benefit of the mechanical strength and durability characteristics of the floors created, by reducing the water / binder ratio.

STABILCURE Surface treatment - anti-evaporation

Curing aid in aqueous dispersion, specific for the curing and anti-evaporation surface treatment of bonded and stabilized natural inert flooring.

STABILWASH Surface treatment - visible inert

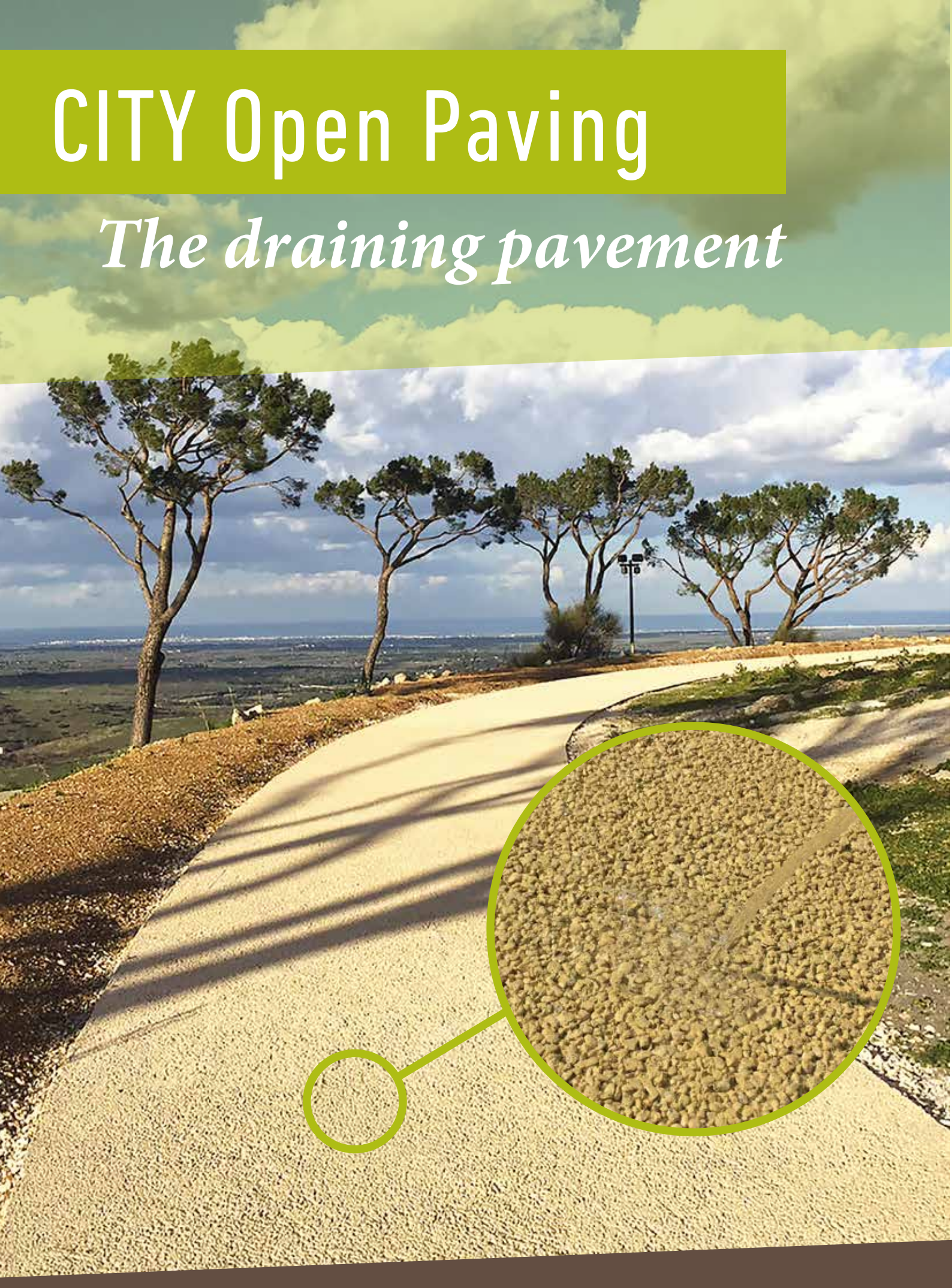
Setting retardant in aqueous solution to be applied by means of a low pressure airless pump to remove, with hydro-washing, a cortical layer of a few millimeters and expose the aggregates present, specific for surface application in bonded and stabilized natural inert flooring.

ADVANTAGES

- SOLID: approximately 70% increase in mechanical strengths obtainable with the use of traditional binders.
- IMMEDIATELY PRACTICABLE: immediate start-up of the flooring thanks to the reduction of the time required to achieve maximum mechanical performance (from 30 days to 7 days).
- DURABLE: the improvement of the mechanical-performance requirements of the treated materials determine the durability of the flooring.
- FUNZIONALE: eliminazione dei difetti tipici delle strade bianche come la polverosità, il fango, la presenza di buche e di ormaie tracciate nel tempo dal passaggio di pneumatici.
- ECONOMIC AND LOW ENVIRONMENTAL IMPACT: the use of local aggregates combined with high-performance technologies makes it possible to significantly reduce the useful thicknesses, resulting in a reduction in transport costs and emissions into the atmosphere while maintaining the natural color of the earth used.
- ECO-FRIENDLY: 100% recyclable.

CITY Open Paving

The draining pavement



A line of products that arises from the very current need to give cycle or driveway floors an effective drainage capacity while maintaining their robustness and eco-compatibility. These particular floors, which can be inserted in any landscape context, are widely used especially in areas where the hydrogeological balance must not be altered at all, also having the possibility of creating it where it does not exist

The careful selection of the aggregate performed by our technicians makes it possible to find it almost anywhere to the advantage of the economy, plus the possibility to add the mixture with natural oxides to give the flooring the most pleasing chromatic aspect.

WHAT'S THIS?

It is an environmentally friendly technology to build draining floors, 100% recyclable, characterized by a natural appearance that does not alter or contrast with the surrounding environment.

HOW IS IT USED?

It is mixed with a specific mix of monogranular aggregates la whose composition guarantees the flooring a drainage capacity exceeding 2000 l / m2 x min. thanks to a void index between 15 and 20% and a high strength ensured by a uniaxial compressive strength at 28 days of curing, performed on cubic specimens of 150 mm side (UNI EN 12390-3) not less than 22 MPa

WHY IS IT USED?

City Open Paving allows you to create highly draining floors in areas where the hydrogeological balance must absolutely not be altered, with high strength, immediately practicable and with a longer useful life.

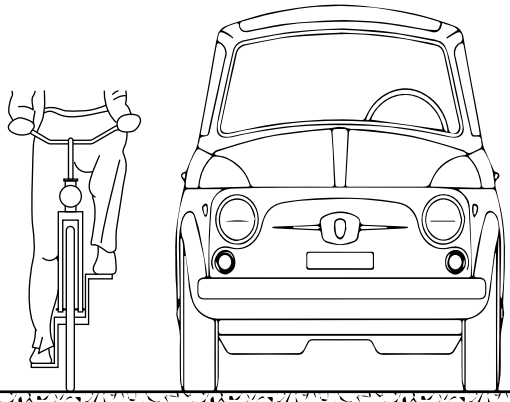
FIELDS OF USE

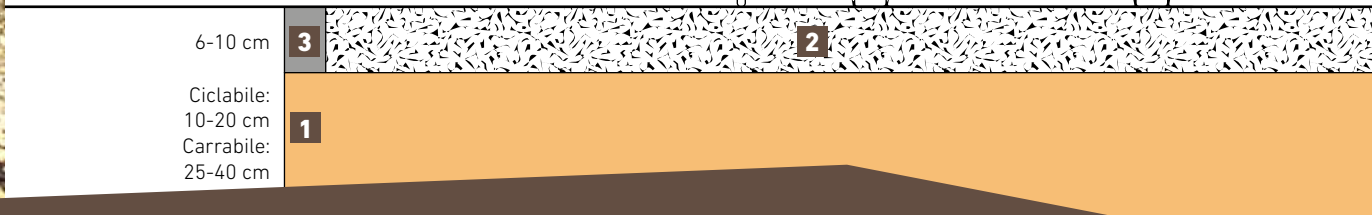
For the construction of cycle paths, rural roads, car parks, paths in parks and gardens, sports facilities, golf courses, dirt roads, wineries, playgrounds, archaeological sites, roads in areas with environmental restrictions, etc.

1 STABILIZED FOR SUBSTRATE
Bike path: Md ≥ 50 Mpa Driveway: Md ≥ 80

2 MONOGRANULA AGGREGATE BONDED WITH CITY OPEN PAVING TECHNOLOGY
Rc ≥ 20 Mpa

3 CORDONED / METAL BLADE





OPENBIND Binder for draining mixes

Eco-compatible binder-consolidating mixture based on hydraulic limes and inorganic oxides, specific for the interventions of construction of draining floors. The quality of the raw materials, carefully selected and mixed, in which the absence of radioactivity is certified and the non-additivation in the production phase with secondary materials coming from waste from other industrial processes, allows to bind to the selected inert. bringing a significant increase in the mechanical-performance requirements of the mixture, also ensuring the lowest possible environmental impact. The addition of other hydraulic binders is not envisaged.

OPENCOMPOSIT L Liquid additive for draining mixes

Multifunctional fiber-reinforced liquid additive compound specially formulated to improve the rheology of draining mixtures made with traditional hydraulic binder, facilitating both manual and mechanized application.
It acts as a water retainer, promoting proper hydration of the binder and rapid achievement of the mechanical characteristics suitable for the use of the flooring created.
It allows a better adhesion between binder paste and aggregate, compensating for the lack of fines characteristic of this type of mixtures.
It also acts as a fluidifying agent, to the total benefit of the mechanical strength and durability characteristics of the floors created, by reducing the water / binder ratio.

OPENCOMPOSIT P Powder additive for draining mixes

Powder additive for draining mixes
Multifunctional fiber-reinforced powder additive compound specially formulated to improve the rheology of draining mixtures made with traditional hydraulic binder, facilitating both manual and mechanized application.
It acts as a water retainer, promoting proper hydration of the binder and the rapid achievement of the mechanical characteristics suitable for the use of the flooring created. It allows a better adhesion between binder paste and aggregate, compensating for the lack of fines characteristic of this type of mixtures. It also acts as a fluidifying agent, to the total benefit of the mechanical resistance and durability characteristics of the floors created, through the reduction of the water / binder ratio.

OPEN PROTECTION Surface treatment - anti-evaporation

Curing aid in aqueous dispersion, specific for the curing and anti-evaporation surface treatment of single-grain inert draining flooring.

ADVANTAGES

- DRAINING: draining capacity over 2000 l / m2 x min. (Value measured with "ANAS" street infiltrometer)
- SOLID: approximately 50% increase in mechanical strengths obtainable with the use of traditional binders.
- IMMEDIATELY PRACTICAL: immediate start-up of the flooring thanks to the reduction of the times for achieving maximum mechanical performance (from 30 days to 7 days).
- DURABLE: the improvement of the mechanical-performance requirements of the treated materials determine the durability of the flooring.
- FUNCTIONAL: the particularity of the mixture allows the creation of a flat and sturdy surface, ideal for both cycle and vehicle use in total safety.
- ECONOMIC AND LOW ENVIRONMENTAL IMPACT: the use of local aggregates combined with high-performance technologies allows for a significant reduction in the useful thicknesses, with a consequent reduction in transport costs and emissions into the atmosphere.
- ECO-FRIENDLY: 100% recyclable.

VILLA Fine Floor

Architectural eco-concrete

Product line designed for the construction of eco-friendly architectural concrete floors, with a refined appearance that enhances the aesthetic characteristics of the chosen aggregate, inserted in refined contexts, public or private, such as gardens of villas, in historic centers, squares.
With Villa Fine Floor it is possible to replace the cement usually used for the packaging of concrete with exposed aggregate, a particular eco-compatible premix that respects the environment, which guarantees increases in durability over time and resistance to flooring, better intrinsic waterproofing, resistance to freeze-thaw cycles, resistance to shocks and abrasions.

WHAT'S THIS?

It is an environmentally friendly technology for building floors of particular value, 100% recyclable, with a "refined" and at the same time natural architectural appearance.

HOW TO USE IT?

Villa Fine Floor allows you to create floors with unique effects and chromatic contrasts inserted in contexts of urban furniture such as historic centers, squares and for the decoration of public and private green areas.

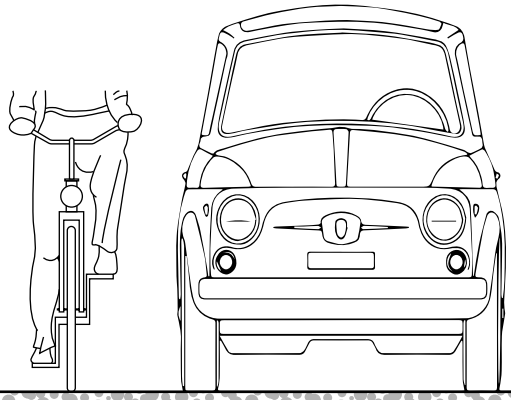
WHY IS USED?

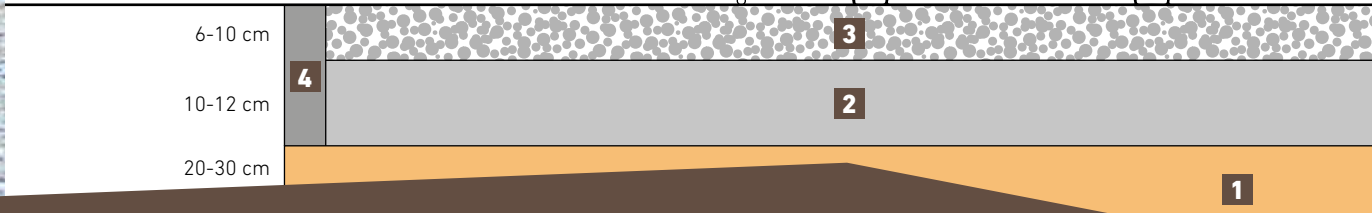
It is mixed with natural aggregates generally granulated of marble, porphyry, granite and semi-precious stones of small and medium size, with an irregular or rounded shape.

FIELDS OF USE

For the creation of paths in public and private parks and gardens, roads in areas with environmental restrictions, etc..

1. STABILIZED FOR SUBSTRATE
(Md ≥ 50 MPa CYCLOPEDONAL
Md ≥ 80 MPa DRIVABLE)
2. POSSIBLE FIBER-REINFORCED CONCRETE RCK 25-30
3. VILLA FINE FLOOR ECO-ARCHITECTURAL CONCRETE
4. CORDONED / METAL BLADE





FINE FORMULA Binder for architectural concrete

Eco-compatible binder-consolidating mixture based on hydraulic limes and inorganic oxides, specific for the construction of architectural flooring in eco-concrete with the “washed gravel” technique. The quality of the raw materials, carefully selected and mixed, in which the absence of radioactivity is certified and the non-additivation in the production phase with secondary materials coming from waste from other industrial processes, allows to bind to the selected inert material by providing a a significant increase in the mechanical-performance requirements of the mixture, also achieving the lowest possible environmental impact. The addition of other hydraulic binders is not envisaged. It can also be pigmented with the wide range of colors of the natural oxides OXICOLOR.

FINE PERFORMER Additive for architectural concrete

Additional compound in powder with high filler power, designed to improve the rheological characteristics in the fresh state of the mixture and to improve the mechanical performance of architectural concrete prepared with traditional binders.
It consists of a blend of microfibers, air-entraining, fluidifying and stabilizing agents, specially selected and proportioned to obtain flooring with high performance in terms of mechanical strength, durability and resistance to freeze / thaw cycles. It also reduces the risk of shrinkage cracking.

FINEDEEP Surface treatment - visible inert

It is a ready-to-use, modular action surface deactivator specific for the production of concrete with a high-quality aesthetic, architectural effect, with exposed aggregates, in relief (concrete with "exposed gravel" effect).
The specific formulation allows to obtain homogeneous surfaces, easily washable about 20 hours after casting the concrete.

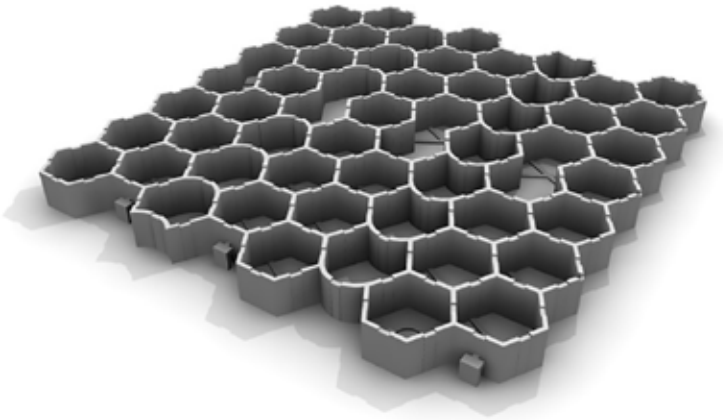
FINEPROTECTION Surface treatment - anti-evaporation

Curing aid in aqueous dispersion, specific for the curing and anti-evaporation surface treatment of architectural flooring.

ADVANTAGES

- SOLID: approximately 50% increase in mechanical strengths obtainable with the use of traditional binders.
- IMMEDIATELY PRACTICAL: immediate start-up of the flooring thanks to the reduction of the times for achieving maximum mechanical performance (from 30 days to 7 days).
- DURABLE: the improvement of the mechanical-performance requirements of the treated materials increase the durability of the flooring.
- FUNCTIONAL: robust and accessible by any vehicle.
- LOW ENVIRONMENTAL IMPACT: the use of natural aggregates combined with high-performance technologies makes it possible to significantly reduce the useful thicknesses, with a consequent reduction in transport costs and emissions into the atmosphere.
- ECO-FRIENDLY: 100% recyclable.

GARDEN GRID



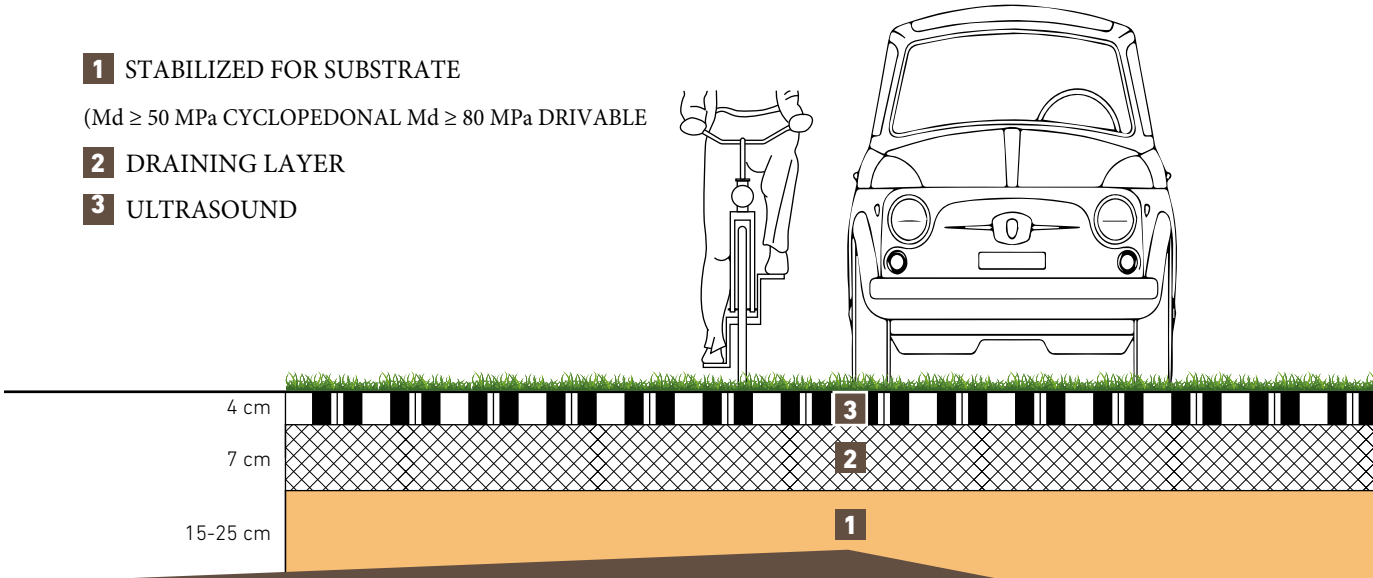
Eco-protective grass grate specific for the construction of draining floors in grass or in decorative aggregate for pedestrian, bicycle and vehicle use, even by heavy vehicles.
Garden Grid is an ecological grid as it is produced with materials deriving from renewable sources, specially designed and built to last over time and in conditions of use with high traffic frequency.
Equipped with a particular semi-flexible honeycomb structure with a thickness of 5mm, thanks to the knurled anti-slip profile, the special horizontal reinforcement, the expansion joints that prevent it from deforming in the summer and winter season and further strengthened in four points per element, it can also be used in particularly unfavorable conditions.
It offers the possibility of creating routes with steep slopes thanks to the anchor stake (Pin). Garden Grid does not hook to the ground but is equipped with solid non-releasing "click" joints that firmly join one grid to another while allowing quick removal for any underlying interventions.
It is a product with flexibility in the design process, in fact it can be filled with different types of materials, such as grass, thanks to which the ground remains green and natural, or it can be filled with a decorative aggregate.

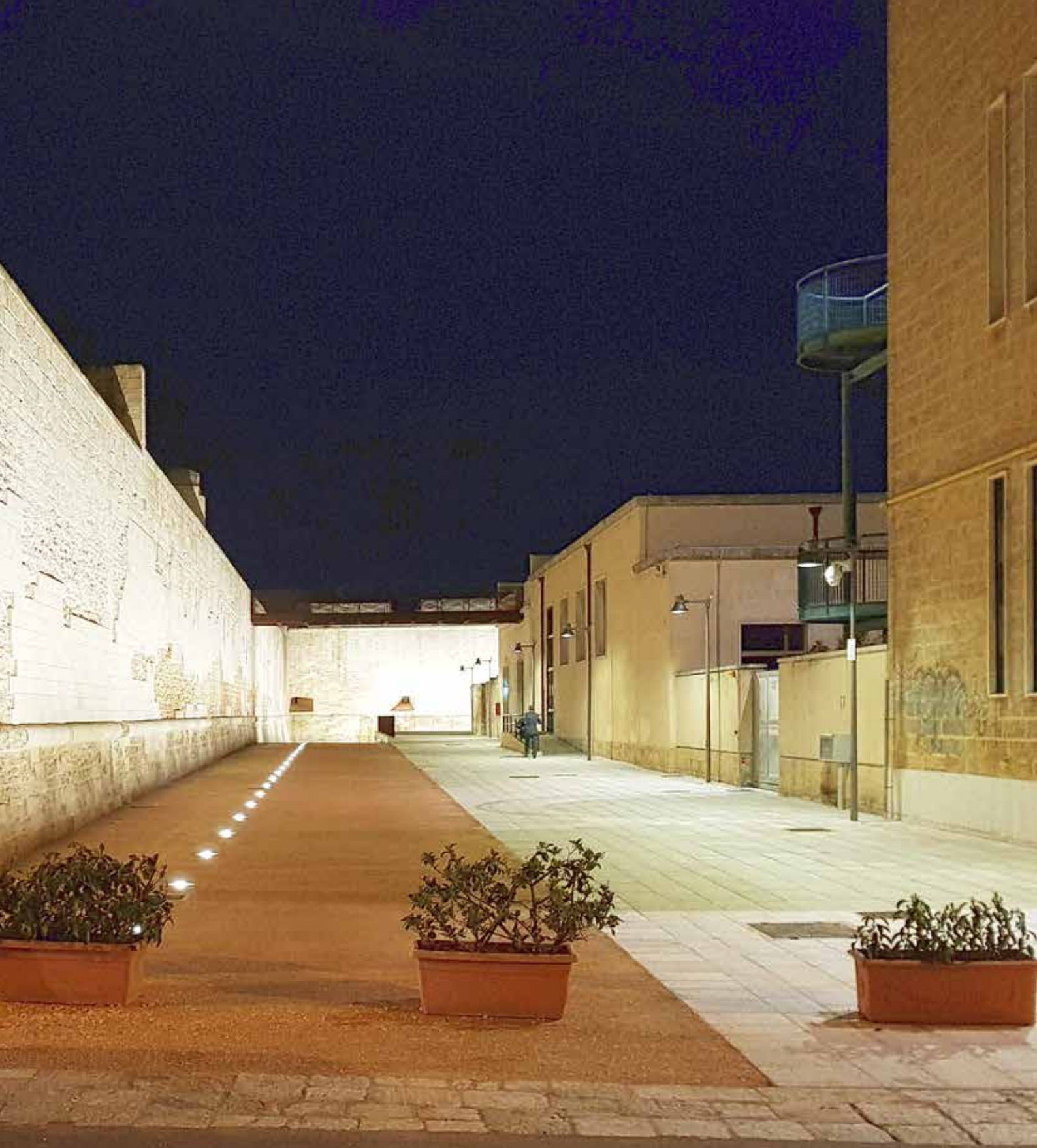
ADVANTAGES:

Possibility to reuse the land of the place, absolute environmental compatibility, very high drainage capacity of the finished work, very high resistance to vehicle maneuvering operations even in the coldest periods. Also resistant to the passage of heavy vehicles, very high durability. Easy installation thanks to the incorporated expansion joints.

FIELDS OF USE:

Urban public space, cycle paths, pedestrian paths, rural roads, wooded paths, paths in parks and gardens, cemetery roads, sports facilities, playgrounds, car parks, golf courses, squares, archaeological sites.





ECCE
Urban city walls (2016)

LUCCA
Urban walls of the city (2015)

LABORATORY

A tailor-made service

RESEARCH AND EXPERIMENTATION

The laboratory is the beating heart of the company, where curiosity is given space, challenges are accepted and ideas take shape.
Research and development is carried out with a "dynamic" approach, through constant technical-regulatory updating and the verification of new materials and methods.

This is how we manage to achieve the continuous improvement of technology. This, combined with an important series of tests carried out on the countless works carried out over the years, is our know-how.

CONTROL OF PRODUCTION

The particular characteristics of our products oblige us to a just in time production. This allows us to use “fresh” raw materials on which the laboratory always carries out quality checks. Sample checks are also constantly performed on each production batch and on the different production processes.

CONSULTING AND ASSISTANCE SERVICE TO DESIGNERS, COMPANIES AND PRE-PACKAGERS

QUALIFICATION OF THE BLENDS

Given the great variability of aggregates and aggregates that can be used with Terra Solida systems, linked to the geological complexity of our country, but also to the aesthetic and functional value of the same, in the context of each project, the laboratory preliminarily checks the suitability of the materials - be effectively used in flooring, through:

- The characterization of the identified aggregates.
- The measurement of the resistances obtainable from the same in experimental mixtures.

Thus obtaining the optimization of the context in water (or the water / binder ratio) of the mixture and the necessary dosage of binder, comparing the results obtained from the tests with the reference values adopted and proven by the experience of Terra Solid.

TECHNICAL ASSISTANCE ON SITU

In the subsequent executive phase, we provide the technical assistance necessary to reproduce the experimentally identified mix design and to achieve a correct implementation through effective application of the products. The results obtained are also verified, through the packaging of specimens (cu-bike or cylindrical according to the reference legislation) for the measurement of the performance of the applied mixture and, for NATURE-Stabil Road flooring, through the determination of the density on site obtained following compaction.

FRANCE - NICE, Driveway in the Russian Orthodox Cathedral of St. Nicholas (2015)

PORCIA (PN)
Flooring Villa Correr Dolfin (2015)

LUMEZZANE (BS)
Driveway in San Bernardo Park (2018)

SWITZERLAND - AGNO, MUZZANO
Cycle and pedestrian path (2018)

MANIAGO (PN)
Historic Park Paving (2016)

SWITZERLAND - AGNO, MUZZANO
Cycle and pedestrian path (2018)

ERACLEA (VE)
Driveway flooring Camping Le Dune (2017)

LUCCA (LU)
Driveway flooring at Tenuta dello Scompiglio (2015)

MILAN
Cycle and pedestrian path along the Villoresi canal (2016)

CESANO BOSCONE (MI)
Monsignor Moneta Square (2018)

SAN VITO DEI NORMANNI (BR) - Redevelopment of the archaeological park of the widespread museum Castello d'Alceste (2018)

LECCE
Urban city walls (2016)

CRISPIANO (TA) - Redevelopment of the Gravine Vallone Area Cycle and pedestrian paving (2018)

LUNI MARE (SP) - Cycle and pedestrian path (A12 Genoa-Livorno) Park of the National Archaeological Museum of Luni (2018)

MONTEPAONE LIDO (CZ) Waterfront redevelopment (2016)

DAM OF OCCHITO (FG)
Service driveways to the Occhito dam (2016)

www.diversa-mente.com

TERRA SOLIDA

THE OUTDOOR FLOORING
MADE ON SITE

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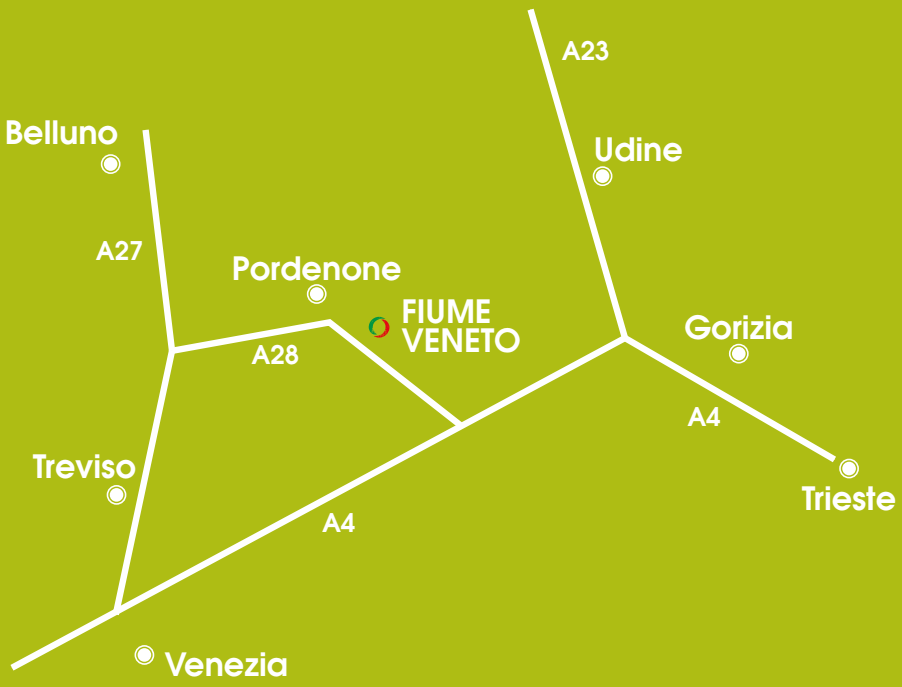

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