APPLICATION GUIDE

Ekovia®

Soil stabilisation with Saint-Astier® lime

SAINT-ASTIER

LIME, LIFELONG EXCELLENCE

EKO-V.I.A® is a lime for soil stabilisation, developed for pedestrian walkways, bicycle & coastal paths and greenways, as well as for landscaping projects such as golf courses and campsites.

A sustainable solution, it meets perfectly the expectations of architects, town planners and landscape architects, as it blends harmoniously into landscapes and enhances the natural heritage.

THE +

- **CONTRIBUTES TO SOIL DRAINAGE AND RAINWATER MANAGEMENT**
- **LIMITS THE USE OF PHYTOSANITARY PRODUCTS**
- **EASY TO INSTALL**
- **BLENDS IN PERFECTLY WITH ITS SURROUNDINGS**
- **ALL-MINERAL SOLUTION**

EKO-V.I.A® is an effective and long-lasting solution for stabilising soils with natural lime, it offers real advantages such as :

> It increases soil resistance to climatic stress such as rain, wind, runoff erosion and frost.

> It provides better soil compaction with reduced water content.

> It promotes drainage and prevents run-off, puddles and mud. It flocculates soil clays.

> The colour of the final floor is that of the aggregates used, ensuring perfect integration into the environment.

> It improves traffic conditions for pedestrians and light vehicles.

> It limits the appearance of vegetation and the use of phytosanitary products for soil maintenance.

> This mineral solution contains no components that could wash out or pollute groundwater.

EKO-V.I.A® APPLICATION

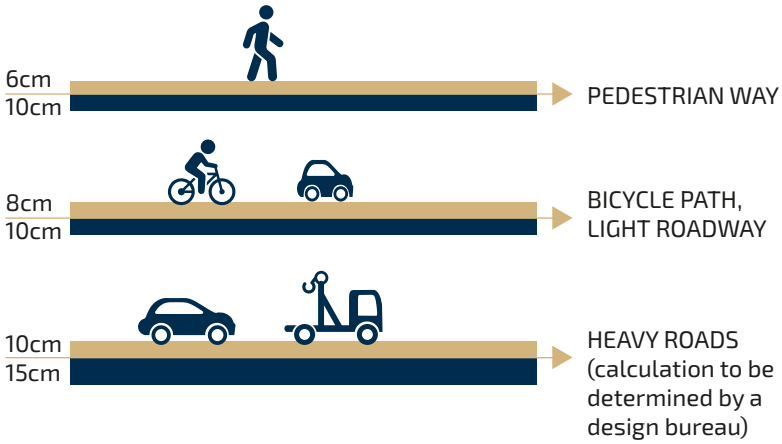
The use of EKO-V.I.A.® means that the finish can be adapted to suit each project.

By simply varying the dosage and application techniques, it is possible to obtain authentic finishes and respect the aesthetics of the environment, with aggregates of varying sizes depending on the desired finish.

Thanks to the unique permeability of Saint-Astier® lime, component of EKO-V.I.A®, the solution offers excellent soil drainage capacity and requires little maintenance.

Before starting to apply EKO-V.I.A®, check that the aggregates to be treat are free of organic matter and that their fines content is around 5%. The presence of very fine or highly absorbent aggregates can affect the hydration of EKO-V.I.A®.

RECOMMENDED THICKNESS



> Soil stabilisation can also be carried out using quarry materials (e.g. recycled materials, rubble, etc.), solid rock, granite or other crushed materials.

> The most commonly used particle size is 0/4mm.

> It can be manufactured in 0/6, 0/10 or 0/16 gradations on request, depending on the intended use.

> The aggregates used must comply with standard EN 13-242 for materials used with hydraulic binder or unused.

FEATURES

> EKO-V.I.A® is an HL 5-classified hydraulic lime, composed of NHL 5 natural hydraulic lime (>80%) and hydraulic binder.

> It sets and hardens gently, limiting shrinkage and cracking of existing soils.

SOIL PREPARATION

CLAY SOIL

> Strip topsoil
> Evacuate clay soil
> Place a 12 to 20 cm layer of natural gravel, depending on use, and compact.
> Moisten the substrate

FORM-FITTING BACKGROUND

> Strip topsoil
> Moisten the substrate

NB : In the case of "unstable" soil, careful compaction may be required with 5% EKO-V.I.A.®

DOSAGE

A= Recommended EKO-V.I.A.® dosage as a percentage by weight of the mixture

Exemple of dosing

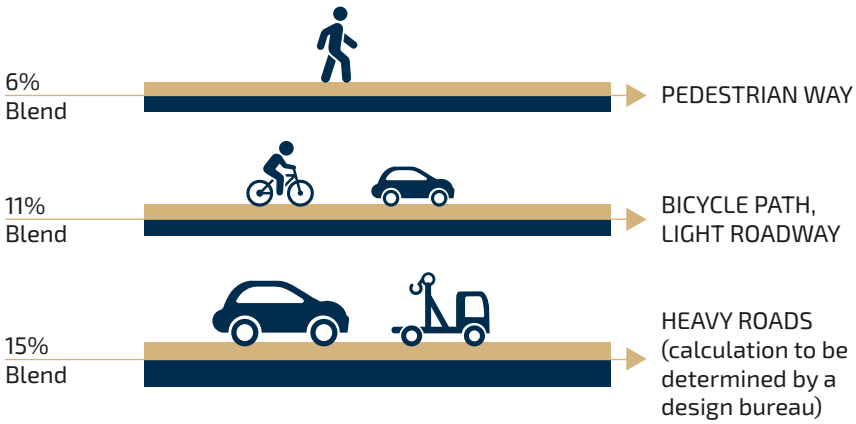
> 6% : Pedestrians
> 11% : Pedestrians with light traffic (bicycles, etc.)
> 15% : Pedestrians and occasional light vehicles

B= Dry aggregate density (Kg/l)

C= Thickness in m

D= m^2 of work

Kilos required for the job = C*D*1000*A*B



PRECAUTION

The application temperature must be between 5° and 30° C.

Installation in winter (November to March) is strongly discouraged due to the risk of frost affecting the soil at its very young age.

Application in hot weather (>20°C) requires special precautions:

> Covering during transport

> Wetting the substrate

> Light misting/dampening of the product for 7 days after application (2 to 4 times per day)

STEPS

The mix is produced on site using a concrete mixer, a concrete mixing bucket or a concrete mixing plant installed in the aggregate quarry. Cold mixing reduces energy requirements compared with conventional bituminous solutions, and cuts CO_2 emissions.

APPLICATION

1 Wet the surface before application with a light spray of water and allow the water to dry.

2 Place the filler + EKO-V.I.A.® mixture, maintaining as even a thickness as possible. Allow for a reduction in thickness of around 20% of the raw material after compaction. Adjust and compact.

3 Level the mixture using a ruler or similar instrument.

4 Compact the soil treated with EKO-V.I.A.® using a roller compactor or similar.

5 If necessary, brush or rake to obtain a rougher appearance.

6 Keep the work damp with moderate spraying for a week.

After completion of the work, a minimum waiting period of 7 days is required before step over and for light vehicles 28 days.

TECHNICAL TIPS FOR INSTALLATION

The surface of EKO-V.I.A.® must be covered after installation, either by spraying with a suitable (light) curing compound, or by covering with a polyane film for at least 24 hours.

Once compacted, EKO-V.I.A.® has sufficient bearing capacity to withstand occasional foot traffic immediately afterwards.

To avoid damaging the surface of the structure before the treated material has set, all traffic should be avoided - 24 hours for pedestrians and 7 days for vehicles.

EKO-V.I.A.® complies with European health, safety and environmental requirements.

EKO-V.I.A.® is compatible with in-place material recycling.

If you have any technical questions or would like to receive support in implementing our solution, please do not hesitate to contact your Saint-Astier® representative









TECHNICAL DATA

Ekovia® HL 5

FEATURES AND SPECIFICATIONS

	AVERAGE VALUES	UNIT
FREE LIME CONTENT	17	Mass %
FREE WATER	0,7	Mass %
SO_3	0,15	Mass %
REFUSAL AT 90µm	2,5	Mass %
REFUSAL AT 200µm	0,2	Mass %
POWDER DENSITY	0,75	kg/l
REAL DENSITY	2,6	kg/l
BLAINE	6 000	cm^2/g
7-DAY RESISTANCE	9	MPa
28-DAY RESISTANCE	15	MPa
MODULUS OF ELASTICITY	15 000	MPa
INITIAL SETTING TIME	2,5	h
FINAL SETTING TIME TO SET END	5	h

EKO-V.I.A.® is an HL 5 hydraulic lime complying with the NF EN 459-1 standard for construction limes. The EKO-V.I.A.® solution has undergone laboratory characterisation (euskontrol report available on request) and on-site characterisation (ASTEEN environnement et géotechnique).

LABORATORY TESTS: MECHANICAL PERFORMANCE ON COMPACTED SOIL (0/20mm) according to modified Proctor test NF EN 13 286-2

% OF EKO-V.I.A.®	7-DAY COMPRESSIVE STRENGHT	Optimum density (kg/l)	Optimum water percentage
6	3.03	2.24	6.7
11	4.47	2.20	7
15	5.75	2.17	7.6

FIELD TESTS

MATERIALS	EKO-V.I.A.® DOSAGE in kg/m³	WATER PERMEABILITY (in mm)	PERMEABILITY COEFFICIENT	DEFORMATION MODULE EV1 (in MPa)	DEFORMATION MODULE EV2 (in MPa)	K EV2/EV1	WERTERGAARD REACTION MODULE (in MPa/m)
Rolled 0/8 gravel	110	0,27	$7{,}43.10^{-8}$	33,9	45	1,33	93
Rolled 0/8 gravel	80	0,29	$8{,}24.10^{-8}$	25,6	30,8	1,21	70
Crushed 0/16 gravel	120	0,63	$9{,}2.10^{-8}$	32,7	43,3	1,32	70
Soil in place and crushed 0/20	180	2,21	$6{,}14.10^{-7}$	19	25	1,32	36
Soil in place (excluding topsoil)	180	1,51	$2{,}31.10^{-7}$	14,8	22,7	1,54	25
Sand 0/3 (sea sand)	180	0,47	$1{,}22.10^{-7}$	35,2	66,2	1,88	140

MSDS and DOP available on our website
www.stastier.co.uk/

YOUR PERSONAL CONTACT :

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