

PLAM CEM DRAIN

Draining concrete mix

DESCRIPTION

Plam Cem Drain Isoplam® is a system that allows the creation of continuous ecological monolithic concrete floors that are highly draining, sound-absorbing and characterized by high resistance to compression and wear.

It is achieved by spreading a mixture made of cement, local aggregates and special additives which guarantee the mix design correct workability and high resistance.

FIELDS OF USE

The Plam Cem Drain Isoplam® system is the ideal solution for all external paving, even passable by light vehicles, which requires a high degree of drainability and/or sound absorption.

It is widely used for the creation of:

- avenues and streets;
- sidewalks and cycle paths;
- squares;
- service and refueling stations;
- fuel depots;
- areas subject to environmental protection.

ADVANTAGES FOR THE FUTURE COSTUMER

The Plam Cem Drain Isoplam® system allows you to obtain:

- continuous flooring: it has a lower hygrometric shrinkage compared to a traditional concrete, given by the reduced amount of water and cement used;
- both pedestrian and drivable by light vehicles floors;
- passable already a few days after laying;
- non-slip;
- highly draining: it has a high hydraulic conductivity, given by the presence of the voids inside it;
- which do not stagnate the water and therefore ensure greater road safety by avoiding the phenomenon of runoff and aquaplaning;
- less exposed to the risk of freezing: the water does not stagnate superficially;
- which allow the recovery of groundwater as they return rainwater to the ground and are therefore suitable in areas subject to environmental protection;
- compressive strength: the strength value varies according to the degree of compaction and cohesion of the granular part;
- sound-absorbing: the open-pore finish increases the ability to absorb noise, increasing acoustic comfort;
- with reduced thermal emissivity as they have a high SRI (Solar Reflectance Index) due to the porosity of the surface and the choice of a light-coloured conglomerate: in this way urban heat islands are avoided;
- fire-resistant: the cement conglomerate does not contain flammable or oxidising substances;
- resistant to hydrocarbons: in fact, it does not contain components that can degrade on contact;
- environmentally friendly: it is free of resinous binders, does not release dangerous substances and uses natural aggregates and little cement;
- completely recyclable; does not allow the rooting of weeds; simple to maintain;
- natural or coloured greys (the use of a white colour increases the visibility of the surface at night).

ADVANTAGES FOR THE APPLICATOR

The Plam Cem Drain Isoplam® system

- guarantees safety for operators as it is spread "cold" and does not produce fumes or parts that can burn;
- it is easy to spread by using a road paver or by using mechanical smoothing machines;
- it reduces production times and related costs.

SUPPORT PREPARATION

The existing substrate must be compacted so as to obtain a uniform and stable surface.

Lay a layer of Isoplam non-woven fabric and, on this, a layer of granular material whose thickness (from 20 to 45 cm) will vary depending on the required drainability and on the intended use of the flooring.

APPLICATION

The mixture can be prepared in two ways:

Option a)

Solution for medium-small areas and by using the product Plam Cem Drain Isoplam in 25 kg bags.

In the concrete mixer on site, mix Plam Cem Drain with clean water at a rate of about 1.4 L/bag.

It is possible to add Plam Oxid Isoplam to the dough to obtain colours other than natural grey at a rate of 0.06-0.2 kg/bag depending on the desired colour intensity.

Mix until a homogeneous mixture and a moist earth-like texture are obtained.

Spread the product with Isoplam Concrete Rake and Isoplam manual or vibrating Screed in thicknesses from 5 to 15 cm depending on the intended use of the floor (pedestrian and cycling: 6-8 cm thick; parking area: 10-15 cm thick).

Compact properly with vibrating plate, manual compactor roller or roller screed roller and even the surface with Isoplam mechanical power trowel (helicopter) with suitable Isoplam plate mounted. The operator must wear the appropriate Isoplam smooth slippers so as not to mark the floor.

The dough must be processed within 30 minutes of mixing.

Properly cover the flooring with nylon sheets for at least a week, in order to allow proper curing and avoid the formation of cracks.

Option b)

Solution for medium to large areas and by using Plam Cem Drain in a concrete mixer.

The material arrives pre-dosed and mixed (also coloured on request) in concrete mixer tank with a capacity of 10 m³, loaded with a maximum of 6 m³ of conglomerate (the quantity of draining concrete transported must not exceed 3/5 of the volume of the concrete mixer tank).

It should be noted that the product cannot be pumped: make sure in advance that the concrete mixers that transport it have adequate access to the site.

It is possible to apply both by means of a road finishing machine and by using a manual or vibrating screed and subsequent compaction with a vibrating plate, manual compactor roller or roller screed roller and smoothing with a mechanical power trowel machine (helicopter) with a suitable mounted plate. The operator must wear the appropriate smooth slippers so as not to mark the floor.

Layer a layer of Plam Cem Drain varying in thickness from 5 to over 40 cm depending on the intended use of the floor (pedestrian and cycling: 6-8 cm thick; parking area: 10-15 cm thick; road: ≥40 cm thick).

The mixer must be unloaded within one hour of the start of mixing in the plant and the mixture must be processed within 15 minutes of unloading.

Apply Isoplam Antieaporante to allow for correct curing and avoid the formation of cracks..

Notes: The degree of compaction determines the degree of drainability of the pavement. Excessive compaction reduces drainability; inadequate compaction makes the floor less resistant.

JOINTS

Depending on the thickness and intended use of the flooring, the Designer will provide for the creation of control joints on the flooring that must be made (by means of Isoplam or flexible concrete joint cutters) immediately after the compaction phases or they will have to be created beforehand using disjunction blades or by making cuts on site.

MAINTENANCE

Floors made with Plam Cem Drain do not require special maintenance.
In the event of dust or debris deposition that makes it necessary to restore drainability, the floor can be washed with a pressure washer or vacuum sweeping machines.

TECHNICAL DATAS

Look and color	In a bag: dry mixture of natural grey colour In a concrete mixer: ready-to-use conglomerate of natural grey colour
Workability	Moist soil
Packaging	In Kg 25 bags In truck mixer from 6 m ³
Processing temperature	From 5°C to 30°C
Average Workability (Pot life) at 20°C	Bagged material: 30 minutes from the dough Material in the concrete mixer: 15 minutes from unloading
Drivability	Pedestrian: after 24 hours (with nylon still installed) Passable by light vehicles: after at least 7 days Passable by vehicles in general: after 28 days
Storage	for mix design with Bag: at least 24 months in a dry and protected place, at a temperature between 10°C and 30°C in the original package.
Indicative consumption	18 Kg/m ² for cm thickness
Aggregate max diameter	6 mm or 11 mm
Indicative drainability	>200 L/m ² /min for mix design with max 11 mm grit >100 L/m ² /min for mix design with max 6 mm grit
Crushing resistance at 28 gg (UNI EN 12390-3)	≥20 MPa
.Resistance to slipping	R11 (DIN 51130:2014)
Flexibility resistance	>1 Mpa
De-icing salts resistance	Excellent
Chemical agents Resistance	Excellent
Heat resistance	Incombustibile
.Flammability	Not flammable
.Resistance to freezing and thawing cycles	Excellent
.SRI	>29

.Runoff coefficient ψ	0,40
.Communicating voids %	Between 15% and 25%

SAFETY

Plam Cem Drain is intended for professional use only.
Consult the safety data sheet before use.

IMPORTANT

All information contained in this sheet is based on the best practical and laboratory experiences. It is the customer's responsibility to verify that the product is suitable for the intended use. The manufacturer accepts no liability for the results of incorrect applications. It is recommended to always carry out tests on small surfaces before application. This sheet replaces and cancels the previous ones. Please also note that Isoplam products are intended for professional use and that Isoplam organizes periodic courses on the products for those who request them. Anyone who uses these products without being authorized to do so does so at their own risk.