CONIPAVE PU 653/1

Single component PUR binder for stone carpet, transparent, moisture curing, solvent free, tough hard, UV-stable, aliphatic, for outdoor application

Material description

CONIPAVE PU 653/1 is a moisture-curing, solvent-free, medium-viscosity and transparent, **aliphatic** PUR binder.

Fields of application

CONIPAVE PU 653/1 is used as a moisture-curing binder for quartz minerals (round grain!) for the construction of decorative stone carpets. **Round stone grains show a higher bond** and are preferred. For this washed and oven dried grains must be used. The grain size is crucial for the water-permeable properties of the stone carpets, which are required for walking and biking trails and other open spaces.
A machine installation with a paver is generally possible if there is appropriate previous knowledge and a suitable grain size is used.

CONIPAVE PU 653/1 must be applied manual. A machine installation with a paver is generally possible if there is appropriate previous knowledge and a suitable grain size is used. Pre-tests are recommended.

Properties

CONIPAVE PU 653/1 has an average viscosity which, on the one hand, permits problem-free mixing with quartz mineral, but on the other hand prevents as much as possible drainage into the substrate.

CONIPAVE PU 653/1 is an aliphatic binder stone carpets and is characterized by a high UV resistance.

It is suitable for both the bottom and top covering, whereby CONIPAVE 610 can also be used for the base and levelling layer below (see relevant product data sheet)

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Technical data

Density	DIN 53217, at 23 °C	g/cm³	1.10
Viscosity	at 23 °C	mPas	4200
NCO-content	DIN 53185	%	13.0
Project- and working temperature	min. max.	°C °C	10 30
Permitted relative humidity	min. max.	% %	40 90
Working time	at 10 °C 20 °C 30 °C	min. min. min.	50 30 20
Ready for pedestrian traffic / re-coating interval	10 °C / 50 % rel. humidity 23 °C / 50 % rel. humidity	h. h.	36 20
Environmental impact assessment	DIN 18035-6		Requirements fulfilled

Above figures are guide values and should not be used as a base for specifications!

Application method

Please also note the information in our general processing guidelines.

CONIPAVE PU 653/1 is a one-component material whose temperature during processing should be between +10 and +25° C.

For the installation of a stone carpet, between 4 and 6 % by weight of CONIPAVE PU 653/1, depending on the grain size, are intensively mixed for about 3-5 minutes with the dry-stone gravel (round grain!) by using a continuously or intermittently operated compulsory mixer designed for this purpose. Concrete mixers are **not** recommended.

It must be ensured that the same mixing times are observed for each mixture in order to avoid differences in wetting and colour. This is especially true if coloured natural quartz is used, which can be coloured differently due to different mixing times.

The homogeneous mixture is then processed by hand. To ensure sufficient strength of the stone carpet it is necessary to compact it with pressure. If necessary, rerolling with a metal roller (max. 10 kg) is required.

A machine installation with a paver is generally possible if there is appropriate previous knowledge and a suitable grain size is used. Pre-tests are recommended.

Particular attention must be paid to the installation joints, which must be carefully reworked using a smoothing trowel and rammer. Otherwise, weak points will be created at the seams, which can later lead to cracks in the stone carpet.

To receive a smooth surface, we recommend our environmentally friendly SMOOTHING AGENT.

If a day seam connection must be made to an already hardened section, it must first be primed with CONIPAVE PU 653/1 worked wet on wet, very careful reworking and compaction is required.

The used stone grains e.g., marble, granite or natural quartz mineral should have a round grain, the largest grain **ideally** should not be larger than 8 mm and have a sufficiently large fine.

No dusty or damp stone grains may be used, as dust reduces the adhesion of the stones and the binding agent reaction is significantly accelerated by moisture and an even stone carpet installation is not possible; furthermore, foaming due to the moisture can lead to a reduction in adhesion between the stones. We recommend using washed and oven dried grains.

When using colour coated stone grains, care must be taken to ensure that colour abrasion (pigments) can already occur during transport and, especially when mixing, can lead to shading and colour changes on the finished surface due to different, **unequal mixing times per mixture.**

The stated c**onsumption data are guidelines and may vary in practice** due to the large number of different stone grains and sieve lines on the market.
The user is responsible for **checking the suitability** of the stone grains. If in doubt, sample areas are to be created.

Guide values and recommendations.

	Layer	Product	Consumption
1	Primer	CONIFLOOR EP 118, CONIFLOOR EP 110 or others on request (on cementitious substrate) alternative CONIPAVE PU 653/1 CONIPUR 70 (on bituminous substrates)	0,3 – 0,4 kg/m^2 light broadcasting QS 0,3-0,8 mm 0,15 – 0,2 kg/m^2 wet-in-wet ca. 0,15 kg/m^2
2	transparent binder	CONIPAVE PU 653/1 (aliphatic)	Granulation 6-12 mm 4 % 4-8 mm: 5 % 2-4 mm: 6 % Guide values!
3	washed and oven-dried stones (layer thickness min.3-times granulation)	Granulation 6-12 mm or Granulation 4-8 mm or Granulation 2-4 mm	ca. 16-18 kg/m^2/cm ca. 16-18 kg/m^2/cm ca. 16 kg/m^2/cm Guide values!

When installing, a uniform layer structure must be considered, even at the edges or to built-in parts and rising components, a minimum layer thickness must be guaranteed.

For the curing of CONIPAVE PU 653/1, temperature and humidity are of crucial importance. Thus, the chemical reaction is delayed at low temperatures and humidity's, which increases curing and rework ability times. At high humidity's and temperatures, the chemical reactions are accelerated, so shorten the curing time, but also the time available for processing accordingly.
At a relative humidity of less than 40%, the already installed but not hardened stone carpet should be **carefully** sprayed with water to counteract too long a curing time, which ultimately leads to a deterioration of the strength of the stone carpet.

For solidification of the surface and better grain incorporation e.g., on with car traffic used surfaces, the stone carpet surface can be rolled again after curing with the binder CONIPAVE PU 653/1.

At low temperatures, curing can be slightly accelerated by use of catalyst. The quantity of catalyst needed depends on the ambient conditions, has to be defined at the job site, and may vary daily.

As a guide, 0.2 % of ACCELERATOR 10 as a percentage of the binder may be used.

Cleaning agent

Re-usable tools should be cleaned carefully with CLEANER 40, CONICA SMOOTHING AGEN or other suitable solvents (e.g., butyl acetate) before curing has taken place. Never use water or alcoholic solvents as cleaners on uncured materials!

Substrate condition

Substrates to be coated must be dry, load bearing, free of loose particles and substances, which impair adhesion such as oil, grease, paint, or other contaminants. When using on unbound, solidified or hydraulically bound subsoil, please note the information below.

The stone carpet should have a coefficient of thermal expansion like that of the substrate in the case of non-positive installation.

Depending on the geometry of the surface to be laid, we recommend decoupling the stone carpet from rising components and built-in components (e.g., drainage channels, gullies) and use elastic joint sealants.

For larger areas and for very long distances it is recommended to apply joints, especially in areas where the floor plan is interrupted (e.g., planting areas).

The decoupling and joints should do to avoid later occurring, uncontrolled cracking due to thermal changes in length and resulting stresses. The field sizes depend on the conditions on site, 10 m is recommended as a guide.
Existing construction joints (work seams) and expansion joints are to be taken over in any case.

Concrete water impermeable
In superstructure of water impermeable concrete, a primer with e.g., CONIFLOOR EP 118, CONIFLOOR EP 110 or CONIPAVE PU 653/1 (see technical data sheet) can be used.

To ensure adequate drainage, the subsurface must have a gradient of at least 2%.

The surface moisture of the concrete must not exceed 4%.

Concrete water permeable
In superstructure of water permeable concrete, a primer with e.g., CONIFLOOR EP 118, CONIFLOOR EP 110 or CONIPAVE PU 653/1 (see technical data sheet) can be used.

As these can only be rolled up thinly in order not to close off the open-pored structure of the concrete, CONIPUR 4710 can be used as an alternative primer in the airless spraying process. Ask our technical service about this.

The surface moisture of the concrete must not exceed 4%.
If necessary, layers of cement paste must be removed by grinding or shot blasting. The adhesive tensile strength should not be less than 1.0 N/mm². Preliminary tests are recommended on water-permeable concrete.

Unbound, compacted base substrates / hydraulic bound subsoil
It can also be installed on mechanically compacted base layers (e.g., concrete pebbles), whereby the base layer must have a thickness of at least 100 mm and a compaction of at least 96%. Alternatively, hydraulically bound base courses are also suitable, but these must water permeability.

The surface moisture of the concrete must not exceed 4%.

Asphalt water permeable (Drain asphalt)
For laying on asphalt surfaces outdoors, open-pored, water-permeable asphalt substrates in accordance with EN 13108-7 are to be used which are designed for the corresponding load (e.g., drivable by cars).

Cast asphalt is unsuitable for outdoor and indoor use due to the large thermal length changes and insufficient water permeability for outdoor.

The surface moisture of the concrete must not exceed 4%.

The substrate must be sufficiently permeable to water. Required permeability coefficient of kf ≥ 5.4 × 10-5 m / s. For trafficable areas (e.g., with cars or light service vehicles), especially on unbound or hydraulic bound subsoils, we recommend a total minimum layer thickness of 50 - 60 mm depending on the grain size and compaction (up to max. 2.8 t load).
Definition of trafficable areas are occasionally used areas for service purposes or privately used paths and parking areas, no public roads, or areas with permanent traffic.
Access to garage entrances and parking areas (with a car up to a maximum of 2.8 t) is only possible from a layer thickness of 30 mm, provided that the underlying asphalt or concrete substrates are designed for this load and depending on the grain size and compression.

For pedestrian areas or areas used by bicycles, wheelchairs or similar, 20 - 30 mm is sufficient, depending on the substrate strength and used grain.

High pressure point loads should generally be avoided. Furniture such as tables, chairs, benches, or the like must be provided with appropriate support buffers in order to avoid grain breakouts on the surface.

The substrate temperature must be at least 3 °C above the current dew point temperature.

When laying on water-impermeable surfaces (for example concrete), sufficient cross-slope for drainage of the surfaces should be provided.

In general, appropriate drainage systems are to be provided for all water-permeable and impermeable surfaces.

In general, the loads and uses are to be adapted to the respective layer thicknesses and stone aggregates used, which are to be checked by the user on his own responsibility.
To ensure adequate drainage, the subsurface must have a gradient of at least 2%.

The surface moisture of the concrete must not exceed 4%.

Pack size

CONIPAVE PU 653/1 is supplied in 220 kg drums and 20 kg pails.

Colour
Transparent

Storage
Store in original closed packing, under dry conditions at a temperature range of 5 - 25 °C.

Do not expose the drums to direct sunlight.

Before use, please see "best before" date on the pail / drum.

Safety precautions
CONIPAVE PU 653/1 is non-hazardous in its cured condition.

For protective measures, transport regulations and waste management please refer to the Material Safety Data Sheet of the product.

CONIPAVE PU 653/1 meets the requirements of the EC directive 2004/42/EC.
The limit value for products ready for use (product type according to table IIA j Type sb) is:
Level II (from 2010) <500 g/l VOC.
When ready to use, this product contains less than 500 g/l VOC.

CE-Label:
See Declaration of Performance.

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