

CONIPUR 4051

Standard Curing, Slightly Colour Stabilized, Single Component, PUR Binder

Product description

CONIPUR 4051 is a moisture curing, solvent free, unpigmented PUR binder of medium viscosity based on MDI.

Fields of application

CONIPUR 4051 is used as a moisture curing binder for recycled rubber granules and coloured EPDM granules for the installation (by hand) of small in-situ surfaces like children's playgrounds or multipurpose surfaces.

Properties

Due to the medium viscosity, CONIPUR 4051 is easily mixed with rubber of all types and there is hardly any run-off.

Compared to other binders, CONIPUR 4051 has a relatively short application time (approx. 15-45 min. depending on temperature/humidity), which limits the interval for making the construction joints. Therefore, CONIPUR 4051 can only be used for small surfaces.

For bigger surfaces which are installed with a paver, we recommend the use of CONIPUR 6020 (yellowing) or CONIPUR 6090 (UV resistant) (please refer to the according product data sheets).

CONIPUR 4051 is slightly colour stabilized. As a result, the discoloration of the binder caused by UV light is delayed so that the entire surface has a uniform appearance immediately after installation. The mechanical properties of the binder are not affected by the yellowing.

However, with certain colours of EPDM granules, a colour change on the surface will take place due to the formation of mixed colours. Thus, with blue surfaces, a green colouring is to be expected, in case of grey surfaces an evident yellow colouring. For green, yellow, red or orange-coloured EPDM layers, the yellowing of the binder is not as noticeable

This discoloration takes normally place - depending on the weather conditions - within the first hours / days and loses its intensity after a few weeks of normal use due to wear and weathering of the very thin binder layer on the top of the granules.

To avoid this (temporary) discoloration, we recommend the use of our aliphatic binder CONIPUR 4090 (installation by hand) or CONIPUR 6090 (paver installation). Please refer to the document "EPDM binder type".

Technical Data

Density	DIN 53217, at 23 °C	g/cm ³	approx. 1.05
Viscosity	at 23 °C	mPas	approx. 2900
NCO content	DIN 53185	%	approx. 9.4
Ready for foot traffic (SBR mat)	at 23 °C / 50% rel. humidity	h	approx. 24
Substrate and application temperature	minimum	°C	15
	maximum	°C	30
Permissible relative humidity	minimum	%	40
	maximum	%	75

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

Application method

Before and during application the ideal temperature of CONIPUR 4051 is between 15 and 25 °C.

The temperature of the sub-base must be at least 3 °C above the current dew point temperature.

The quantity of binder needed also depends on the grain size and type of granules used.

For a granule size (for the base layer) of 2-6 mm we recommend 10-14 % binder, for a granule size of 1-4 mm we recommend 14-19 % binder.

For the installation of a base layer, mix recycled rubber granules and/or buffing dust (normally SBR) with CONIPUR 4051 using a compulsory mixer rotating at approximately 300 rev/min, for 3-5 minutes. Ensure that

the mixer reaches the sides and bottom areas of the mixing vessel.

The homogenous mix is **applied by hand**. In order to achieve good surface strength, the rubber granule mat must be **compacted** thoroughly. If necessary, use a compaction roller.

Special attention must be paid to the construction **joints**, which must be carefully reworked using a smoothing trowel. If a joint connection has to be made to an already **cured** section, it must be primed beforehand with CONIPUR 4051 or CONIPUR 72 and reworked thoroughly. Otherwise **flaws** will develop at the **joints**, which can lead later on to **cracks** in the surface.

For an EPDM surface, **20 %** of CONIPUR 4051 is added to the EPDM granules (grain size 1-3.5 mm). The application process is the same as for recycled rubber granules.

The **reduction** of the **binder ratio** is **not** recommended, as the **mechanical characteristics decrease** and might even fall below the requirements of the relevant standard.

The **smoothing** of the surface **during application** of the binder-granule mix can be facilitated by using **SMOOTHING AGENT**, which is used to moisten the tools. It is a very pure product with only a slight odour. As the tools are only moistened, the consumption can be very low.

The **granules** must be **dry**, otherwise, humidity acts as a catalyst and accelerates the chemical reaction with the binder, causing the binder to foam, the formation of a non-homogeneous layer and of poor mechanical properties.

The ambient temperature, the temperature of the material and the substrate and the humidity of the air are of decisive importance for the curing of CONIPUR 4051. At low temperatures and humidity, the speed of reaction is reduced resulting in a longer pot life, re-coating interval and open time. At the same time, the viscosity increases requiring increased mixing time and a higher consumption. At high temperatures and humidity, the speed of reaction is accelerated and the contrary is true.

For the installation of the granule mats, we recommend the use of granules that have been **tested** and proven to be **suitable** for use with CONIPUR 4051.

In order to achieve the properties required in accordance with the relevant standard, the quantities and granulate sizes defined in the system data sheets must be used.

Cleaning agent

Re-usable tools must be cleaned carefully with CLEANER 40 or other suitable solvent (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 covered have to be dry, load bearing, free of loose particles and substances, which impair adhesion such as oil, grease, paint or other contaminants.

The **bound subbase** must fulfil the requirements according to DIN V 18035-6 in regards of compaction, flatness, gradients and permeability.

On **concrete**, it is necessary to apply CONIPUR 74 or CONIPUR 4710 (solvent free) (see product data sheets) before installing in situ rubber granule mats. The bond strength of the substrate must be at least 1.0 N/mm² (check with an approved pull off tester e.g. Herion, load rate 100 N/s).

The **residual moisture** of the substrate must not exceed **4 %** (check with CM equipment), which corresponds to maximum 75 % relative humidity according to ASTM F 2170. If using the calcium chloride test, the maximum allowable vapour emissions is 4.0 lbs. as per ASTM F 1869.

On **asphalt**, primer CONIPUR 70 must be used. Never use CONIPUR 74 on asphalt.

The **temperature** of the **sub-base** must be at least **3 °C** above the current dew point temperature.

Pack size

CONIPUR 4051 is supplied in 20 kg pails or 220 kg drums.

Colour

transparent, colourless – slightly yellowish

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 check the best before date on the label.

Safety precautions

CONIPUR 4051 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.

CONIPUR 4051 meets the requirements of the EC directive 2004/42/EC.