

# CONIPUR PG

## Two Layer, Water Permeable Fall Protection for Outdoor Playgrounds

**Fields of application** fall protection surface for playgrounds

**System data**

		product	consumption	application	remarks		
<b>Primer</b>	for asphalt	<b>CONIPUR 70</b>	0.15 kg/m <sup>2</sup>	airspray / roll	In case of the residual moisture in concrete of > 4%, CONIPUR 3785 must be used.		
	for concrete	<b>CONIPUR 4710</b> (CONIPUR 74)	0.20 kg/m <sup>2</sup>	airspray / roll			
		A surface preparation by blasting or grinding (incl. the necessary post-treatment) is usually required.					
<b>Fall Protection Layer</b>	<b>30 mm</b>	<b>CONIPUR 4020</b>	1.5 kg/m <sup>2</sup>	trowel	For other shock pad thicknesses (± 30 mm) the amounts of binder and rubber can be adapted proportionally.  For questions or more information, please contact our Technical Service.		
		recycled rubber granules, 2-6 mm	19.5 kg/m <sup>2</sup>				
		Depending on availability also larger granules, shred, crumb and/or fibres can be used which have an impact on the recommended binder consumption.					
		When using a mixture of rubber granules and fibres please do contact our Technical Service					
		For paver installation CONIPUR 6020 is used					
<b>Top Layer</b>		<b>thickness</b>	<b>10 mm</b> minimum	<b>12 mm</b> recommended	<b>15 mm</b> ideal	In order to achieve sufficient stability and durability of the EPDM layer, we recommend a layer thickness of 12 mm, optimally 15 mm.  CONIPUR 4020 is an aromatic binder, which will yellow when exposed to sun light.  For sensitive colours of the granules (e.g. blue, beige, grey) we recommend to use CONIPUR 4080 or CONIPUR 4090. For further information see "Playground EPDM – Binder Type".	
		<b>consumption kg/m<sup>2</sup></b>					
		<b>CONIPUR 4020</b>	1.9	2.3	2.9		trowel
		<b>CONIPUR EPDM</b> granules, 1-3.5 mm	9.6	11.5	14.4		
		For paver installation CONIPUR 6020 is used					
		semi-aliphatic binders CONIPUR 4080 (application by hand) or CONIPUR 6080 (paver installation)					
		aliphatic (UV stable) binders CONIPUR 4090 (application by hand) or CONIPUR 6090 (paver installation)					
<b>Top Coat</b>	optional	<b>CONIPUR 2210 AB</b>	0.3 kg/m <sup>2</sup>	spray (in two coats)	The application of a top coat improves the slip resistance, the UV-resistance and facilitates the maintenance		
		<b>CONIPUR 2210</b>					
		CONIPUR 2210 AB reduces the risk of germs being carried over the floor and provide no breeding ground for microorganisms.					

**Total thickness of the system** approx. 30 + x mm – a minimum layer of 30 mm is required to obtain a fall protection.  
 x = the thickness of the EPDM layer: at least 10 mm, recommended 12 mm, ideally 15 mm

Depending on the required HIC value and the required stability of the systems, **other thicknesses** for the fall protection layer will have to be chosen. For high HIC values, the thickness of the base layer may exceed 100 mm.

As **HIC** values largely **depend** on the **installation**, neither values nor test certificates are given here. As your partner **CONICA** offers you **HIC measurements** of your samples in our laboratory. Please contact your responsible sales manager or our Technical Service.

### Preparation

Substrates to be coated have to be firm, dry, load bearing and free of loose and brittle particles and substances, which impair adhesion such as oil, grease, rubber skid marks, paint or other contaminants.

In addition, the subbase must fulfil the relevant standards with special reference to flatness, gradients, thickness, water permeability and load bearing capacity.

CONIPUR PG is a **water permeable** surfacing system and requires a **water permeable base layer**. In case of a **water impermeable base layer**, a drainage or a slope of at least 2 % must ensure that (rain) water can drain off easily. Stagnant moisture must be avoided.

See also "Playground – Subbases".

The bond strength of the substrate must be at least 1.0 N/mm<sup>2</sup>.

The **moisture** level of **concrete** must not exceed 4 % (check with CM equipment), which corresponds to maximum 75 % relative humidity according to ASTM F 2170.

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

The **temperature** of the **products** before and during application is best between 15 and 25 °C.

### Consumption

For the different grain sizes and thicknesses of the elastic layers we recommend the following consumptions:

SBR Layer in mm	qty SBR in kg / m <sup>2</sup>	quantity of binder in kg / m <sup>2</sup>
		2 - 6 mm
30	19.5	1.50
40	26.0	2.00
50	32.5	2.50
60	39.0	3.00
70	45.5	3.50
80	52.0	3.90
90	58.5	4.40
100	65.0	4.90
110	71.5	5.40
120	78.0	5.90
130	84.5	6.40

The quantities specified are mere **recommendations** and do not constitute guidelines. In case of other rubber types (with fibres, different shape of the granules, different grain size, etc.) the amount of binder must be adjusted.

For the **EPDM layer** following quantities must be calculated:

Thickness of the EPDM Layer	Consumption kg/m <sup>2</sup>		
	10 mm	12 mm	15 mm
CONIPUR 4020	1.9	2.3	2.9
CONIPUR EPDM granules, 1-3.5 mm	9.6	11.5	14.4
	Minimum	Recommended	Ideal

For the test reports we have used an EPDM layer of 10 mm covering the worst case. In order to achieve a **sufficient stability** and **durability** of the EPDM layer however, we recommend a **thickness** of 12 mm - ideal is the installation of a 15 mm EPDM layer.

### Application

Apply **CONIPUR 70** onto the pre-treated water permeable asphalt sub-base using airless spraying equipment.

For **precast concrete** parts such as curbs and drainage systems, **CONIPUR 4710** or **CONIPUR 74** is applied preferably with a low-pressure airless device (for further information see product data sheet).

Allow the solvent to evaporate and the base course to become **sticky**, before applying the following layer. Depending on the prevailing humidity of the air, this is the case after about two hours.

**CONIPUR 3785** is used for **fresh concrete surfaces** with a higher humidity level. **CONIPUR 3785** is applied by rolling or spraying. Puddling or thick layers are to be avoided.

For the first layer the **consumption** must be least **0.5 kg/m<sup>2</sup>** - do **not** sand.

To ensure the adhesion of the following polyurethane-based layer, the **2nd layer** of **CONIPUR 3785** (consumption min. 0.35 kg/m<sup>2</sup>) must be **sprinkled** with **oven-dried quartz sand** (grain size 0.3-0.8 mm). Unbound quartz sand must be removed after curing (see product data sheet for further information).

Apply only primer in areas where the following layer will be installed within the next **12 hours**. If the application of the base layer does **not** take place **within** the **12 hours** period, a new coat of primer has to be applied in order to avoid poor adhesion.

Mix the rubber granules, shred, crumb and/or fibres with **CONIPUR 4020** using a compulsory mixer. Install the fall protection layer at a **consistent density** to the specified thickness using a **hand trowel** and a screed.

Let the **layer cure** (harden) so that foot traffic or equipment do not leave any indentations. The curing process depends on temperature and humidity. If there is sufficient humidity in the air, curing is normally finished overnight.

The maximum **recoating interval** of the fall protection mat is **48 hours**. In case the EPDM layer be installed after this interval, the surface has to be primed with **CONIPUR 72**.

If the fall protection layer is **soiled** (dust, sand), the surface must be cleaned and **CONIPUR 72** must be applied after it has dried completely. The **CONIPUR 72** primer must also be used after **rain**.

Mix the **CONIPUR EPDM** granules with a share of **20 %** by weight of **CONIPUR 4020** using a compulsory mixer. Install the top layer using a hand trowel and a screed.

For **sensitive colours** of the granules we recommend to use **CONIPUR 4080** (semi-aliphatic) or **CONIPUR 4090** (UV stable, aliphatic). For more information, please refer to "Playground EPDM – Binder type".

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

Allow the EPDM layer to cure (harden). The curing process depends on temperature and humidity. Do not allow **foot traffic** until the surface is sufficiently cured. If there is enough humidity in the air, curing is normally finished overnight.

We recommend applying **CONIPUR 2210 AB** or **CONIPUR 2210** as **top coat**. Sealing extends life and simplifies maintenance (easier and more cost-effective cleaning in the long term).

The top coat is sprayed in **two coats** from **opposite** directions with an approximate total consumption of **0.30 kg/m<sup>2</sup>**.

Further information and application instructions are shown in the product data sheet.

### Remarks

For further information, please refer to the technical data sheets of the products or contact our Technical Service.

For application conditions please see our "General Application Guidelines for Sports Systems Indoor and Outdoor".

Suitable machinery is e.g. Plano Matic (paver) and Mixmatic (mixer) from SMG, Vöhringen/Germany.