

## NEUROFLOOR playground safety surfacing

### 1. Surface characteristics

NEUROFLOOR playground safety surfacing provides shock absorption and reduces the risk of injury during a potential fall. They are characterised by high durability and easy maintenance. Our surfacing meets the requirements of EN 1177+AC:2019-04 (HIC). The materials used to make the surfacing are certified by the Polish Hygiene Association. Thanks to the use of durable and weather-resistant EPDM Virgin, it is possible to make the surfacing in any colour in accordance with current Unirubber offer and the on-site installation allows for easy assembly of the play equipment. The SBR technical granulate used for the bottom layer comes from recycled rubber waste of the highest quality parameters.

NEUROFLOOR safety surfacing is laid on a primed asphalt, concrete, mineral or mineral-rubber base (*Fig. 1, layer 1*). The NEUROFLOOR system consists of two layers:

- Technical SBR granulate (2 - 6 mm) bound with PC 31-050/ PC 31-065 single-component polyurethane adhesive. The layer thickness depends on the height of the fall you want to cushion (*Figure 1, layer 2*).
- Virgin EPDM granulate (1 - 3.5 mm) bound with polyurethane adhesive. Depending on requirements, PC 31-050 (aromatic adhesive) PC 31-065 (aromatic adhesive at low temperatures), PC 31-033 (aliphatic adhesive for EPDM, UV resistant) or PC 31-075 (aromatic adhesive for EPDM with fast setting reaction) are used. The EPDM layer thickness is fixed (10 mm) (*Fig. 1, layer 3*).

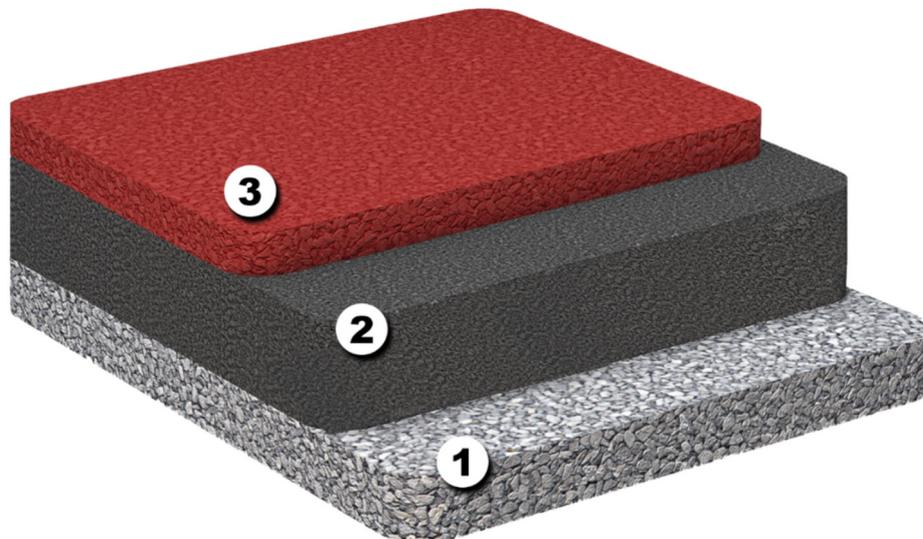


Figure 1. Schematic diagram of NEUROFLOOR safety surfacing.

### 2. Implementation:

NEUROFLOOR safety surfacing can only be installed under suitable weather conditions. It is not possible to install the system in the rain or on a moist substructure. SBR and EPDM granulates must be stored in a dry place before installation.

Moisture in the granulate may adversely affect the bonding of the granulate to the polyurethane adhesive and the final result of the critical fall height. Polyurethane adhesives with an expired expiry date should not be used.

**Before installing the surfacing, refer to the safety data sheets of the system components.**

The safety surfacing can be made on the following types of substructure:

- concrete or asphalt substructure in accordance with DIN 18035-6,
- mineral substructure of frost-resistant crushed stone aggregate,
- mineral-rubber sub-base with binder (ET).

NEUROFLOOR safety surfacing is permeable to water. To ensure the proper functioning of the surfacing it is also necessary that the substrate on which the surface is installed is water permeable or has adequate drainage to allow water to drain away.

**Lack of drainage can lead to damage to the surfacing!**

Requirements for individual types of substructure:

TYPE OF SUBSTRUCTURE		
concrete or asphalt	mineral	mineral-rubber (ET)
in compliance with DIN 18035-6	frost-resistant crushed aggregate with a particle size of 0/22 0/60 mm minimum thickness 150 mm	for use on aggregate (200 mm) or old concrete or asphalt substructure
deviations measured by a 4 m patch not more than 10 mm	in the upper layer additionally broken aggregate of fraction 0/1 4 mm and thickness of 40 - 50 mm	deviations measured by a 2 m patch should not be more than 2 mm
slope of 2% for water flow or drainage	for low permeability surfacing, use a drainage or sand layer of 30 - 100 mm	Composition: quartz aggregate with a particle size of 3-5 mm, SBR granulate with a particle size of 1-4 mm and polyurethane binder (14-20%)

Before laying the safety surfacing, make sure that the surface is dry and free from dirt (e.g. dust, mud). If the substructure has cavities, these should be filled in. It is also recommended to install concrete or rubber edging. Before laying the surface, the substructure, edges and contact elements between the play equipment and the surface are impregnated with primer PC 11-010.

Mix the SBR granulate in the mixer for 3-5 minutes with the appropriate amount of adhesive until the granulate is completely covered by the binder. The mixed SBR granulate and binder is laid by hand or by machine using a paver. After levelling, it is recommended to smooth the layer with smoothing agent PC 11-050. The drying time of the layer depends on the temperature and humidity of the air. Low temperatures and humidity increase the drying time. It is not recommended to use PC 31-

050 during installation at temperatures below 10 °C.

The top layer of surfacing can be laid after approx. 24 hours. Virgin EPDM granulate is mixed in a mixer with an appropriately selected binder for 3-5 minutes. The choice of binder depends on atmospheric conditions during installation (temperature, sunlight) and the colour of the granulate (see *Polycomp Polyurethane Adhesive Selection Recommendations*).

- PC 31-050 (standard aromatic binder),
- PC 31-065 (standard aromatic binder for low temperatures)
- PC 31-033 (aliphatic binder for UV-sensitive EPDM),
- PC 31-075 (aromatic binder with fast setting reaction for EPDM granulate).

The mixture of EPDM granulate and binder is laid by hand or by machine in the same way as the SBR layer and finished with smoothing agent PC 11-050. When laying the top layer, avoid strong sunlight on the surfacing. In order to obtain a uniform surface colour, we recommend mixing bags from different pallets.

**3. Component wear tables and surfacing parameters**

Depending on the thickness, NEUROFLOOR systems provide fall absorption from 1.3 m to 3.4 m in accordance with the PN-EN 1177 standard. To achieve the critical fall height parameters described in this sheet, the following material proportions must be strictly adhered to.

<b>NEUROFLOOR 40</b>				
critical fall height: 1.3 m				
LAYER	COMPONENTS	CONSUMPTION [kg/m <sup>2</sup> ]	THICKNESS [mm]	APPLICATION METHOD
primer	PC 11-010	0.10 - 0.30	-	spray or roller
base	technical granulate SBR 2 -6 mm	18.75	30	manually or by machine
	PC 31-050/ PC 31-065	1.88		
upper	granulate EPDM Virgin 1.0 -3.5 mm	9.00	10	manually or by machine
	PC 31-050/ PC 31-065/ PC 31-033/ PC 31-075	1.80		
<b>NEUROFLOOR 50</b>				
critical fall height: 1.5 m				
LAYER	COMPONENTS	CONSUMPTION [kg/m <sup>2</sup> ]	THICKNESS [mm]	APPLICATION METHOD
primer	PC 11-010	0.10 - 0.30	-	spray or roller
base	technical granulate SBR 2 -6 mm	25.00	40	manually or by machine
	PC 31-050/ PC 31-065	2.50		
upper	granulate EPDM Virgin 1.0 -3.5 mm	9.00	10	manually or by machine
	PC 31-050/ PC 31-065/ PC 31-033/ PC 31-075	1.80		
<b>NEUROFLOOR 60</b>				
critical fall height: 1.8 m				
LAYER	COMPONENTS	CONSUMPTION [kg/m <sup>2</sup> ]	THICKNESS [mm]	APPLICATION METHOD
primer	PC 11-010	0.10 - 0.30	-	spray or roller

base	technical granulate SBR 2 -6 mm	31.25	50	manually or by machine
	PC 31-050/ PC 31-065	3.13		
upper	granulate EPDM Virgin 1.0 -3.5 mm	9.00	10	manually or by machine
	PC 31-050/ PC 31-065/ PC 31-033/ PC 31-075	1.80		
<b>NEUROFLOOR 70</b>				
critical fall height: 2.0 m				
LAYER	COMPONENTS	CONSUMTION [kg/m <sup>2</sup> ]	THICKNESS [mm]	APPLICATION METHOD
primer	PC 11-010	0.10 - 0.30	-	spray or roller
base	technical granulate SBR 2 -6 mm	37.50	60	manually or by machine
	PC 31-050/ PC 31-065	3.75		
upper	granulate EPDM Virgin 1.0 -3.5 mm	9.00	10	manually or by machine
	PC 31-050/ PC 31-065/ PC 31-033/ PC 31-075	1.80		
<b>NEUROFLOOR 80</b>				
critical fall height: 2.2 m				
LAYER	COMPONENTS	CONSUMTION [kg/m <sup>2</sup> ]	THICKNESS [mm]	APPLICATION METHOD
primer	PC 11-010	0.10 - 0.30	-	spray or roller
base	technical granulate SBR 2 -6 mm	43.75	70	manually or by machine
	PC 31-050/ PC 31-065	4.38		
upper	granulate EPDM Virgin 1.0 -3.5 mm	9.00	10	manually or by machine
	PC 31-050/ PC 31-065/ PC 31-033/ PC 31-075	1.80		
<b>NEUROFLOOR 90</b>				
critical fall height: 2.3 m				
LAYER	COMPONENTS	CONSUMTION [kg/m <sup>2</sup> ]	THICKNESS [mm]	APPLICATION METHOD
primer	PC 11-010	0.10 - 0.30	-	spray or roller
base	technical granulate SBR 2 -6 mm	50	80	manually or by machine
	PC 31-050/ PC 31-065	5.00		

upper	granulate EPDM Virgin 1.0 -3.5 mm	9.00	10	manually or by machine
	PC 31-050/ PC 31-065/ PC 31-033/ PC 31-075	1.80		
<b>NEUROFLOOR 100</b>				
critical fall height: 2.4 m				
LAYER	COMPONENTS	CONSUMPTION [kg/m <sup>2</sup> ]	THICKNESS [mm]	APPLICATION METHOD
primer	PC 11-010	0.10 - 0.30	-	spray or roller
base	technical granulate SBR 2 -6 mm	56.25	90	manually or by machine
	PC 31-050/ PC 31-065	5.63		
upper	granulate EPDM Virgin 1.0 -3.5 mm	9.00	10	manually or by machine
	PC 31-050/ PC 31-065/ PC 31-033/ PC 31-075	1.80		
<b>NEUROFLOOR 110</b>				
critical fall height: 2.7 m				
LAYER	COMPONENTS	CONSUMPTION [kg/m <sup>2</sup> ]	THICKNESS [mm]	APPLICATION METHOD
primer	PC 11-010	0.10 - 0.30	-	spray or roller
base	technical granulate SBR 2 -6 mm	62.50	100	manually or by machine
	PC 31-050/ PC 31-065	6.25		
upper	granulate EPDM Virgin 1.0 -3.5 mm	9.00	10	manually or by machine
	PC 31-050/ PC 31-065/ PC 31-033/ PC 31-075	1.80		
<b>NEUROFLOOR 120</b>				
critical fall height: 2.9 m				
LAYER	COMPONENTS	CONSUMPTION [kg/m <sup>2</sup> ]	THICKNESS [mm]	APPLICATION METHOD
primer	PC 11-010	0.10 - 0.30	-	spray or roller
base	technical granulate SBR 2 -6 mm	68.75	110	manually or by machine
	PC 31-050/ PC 31-065	6.88		
upper	granulate EPDM Virgin 1.0 -3.5 mm	9.00	10	manually or by machine

	PC 31-050/ PC 31-065/ PC 31-033/ PC 31-075	1.80		
<b>NEUROFLOOR 130</b>				
critical fall height: 3.4 m				
LAYER	COMPONENTS	CONSUMPTION [kg/m <sup>2</sup> ]	THICKNESS [mm]	APPLICATION METHOD
primer	PC 11-010	0.10 - 0.30	-	spray or roller
base	technical granulate SBR 2 -6 mm	75.00	120	manually or by machine
	PC 31-050/ PC 31-065	7.50		
upper	granulate EPDM Virgin 1.0 -3.5 mm	9.00	10	manually or by machine
	PC 31-050/ PC 31-065/ PC 31-033/ PC 31-075	1.80		
	PC 31-050/ PC 31-031/ PC 31-020	1.80		

#### 4. Operation and maintenance

The uniform composition of the NEUROFLOOR system makes it easy to keep it clean, however, periodic cleaning and maintenance of the surface must not be forgotten.

Fine dirt, sand, leaves, grass clippings should be removed on a regular basis with a broom, leaf blower and/or water. Chewing gum can be removed manually after it has been frozen with ice. Once a year it is recommended to clean the surfacing with a pressure washer (using a pressure of no more than 120 bar and a distance of no less than 40 cm from the head). Do not use solvents or chemicals for cleaning that may damage the surfacing.

#### 5. Other information

All information contained in this data sheet reflects our current state of knowledge. The critical fall height values were measured during laboratory tests under standardised conditions. The final result on a playground can be affected by factors beyond Unirubber's control such as the quality of the substructure or failure to construct the surface according to the principles of good craftsmanship.

In case of any doubts during the selection of components, during the installation of the surfacing or in use, we recommend contacting the manufacturer.