vebro polymers

vebro PU Crumb Binder (1-Pack)

vebro PU Crumb Binder is a strong, flexible, single pack, moisture-cure, polyurethane binder offering excellent UV resistance and high moisture tolerance.

vebro PU Crumb Binder is designed to bind SBR and EPDM rubber granules for a wide range of external surfacing applications.

Primarily, the product is used as a two-layer cushioned safety surface in exterior playgrounds and other leisure and recreation areas.

This system is made up of a shock pad base layer installed at min. 20.0 mm, consisting of SBR crumb granules reclaimed from recycled truck tyres followed by a colourwed wearing EPDM layer installed at a minimum of 15.0 mm.

Component	Weight		
vebro PU Crumb Binder	Small Kit	Drum	IBC
Total Unit:	**25.0 kg**	**220.0 kg**	**1,090.0 kg**

Density

Unit: 1.10 kg / ltr

Unit Weight

25.0 kg (22.7 ltr)
220.0 kg (200.0 ltr)
1,090 kg (990.0 ltr)

Coverage

Dependent on application.

Flash Point

>60°C Non-flammable

NCO Content

14%

HS Code

3909509090

Consumption

The recommended consumption of **vebro** PU Crumb Binder is as follows by weight of aggregate:

- **vebro** Rubber Crumb Granules (Base SBR) – 10%
- **vebro** Rubber Crumb Granules (EPDM) – 20%
- **vebro** Rubber Crumb Granules (EPDM Eco Black) – 25%
- **vebro** Rubber Crumb Granules (EPDM / Eco Black Mix) – 25%

Overcoating Time

~2 hours @ 20°C (some mechanical preparation may be required if outside of this window).

Speed of Cure

- Full Chemical Cure – 4 -6 hours

In winter months, we recommend the use of our **vebro** PU Binder Accelerator to increase the cure time of the material.

Storage

All components should be stored off the ground, in a cool dry area, away from direct sunlight between 5 – 30°. Avoid the unnecessary opening of containers and tightly re-seal after decanting.

If the material is not adequately sealed, any moisture present will activate the reaction process and form a skin on the product.

*These coverages are theoretical and may vary due to a number of factors including the condition of the substrate. It is the applicator's responsibility to ensure the substrate has been surveyed and tested. A recommended 5% wastage addition is advised on all orders.

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Rubber Crumb Granules

Wet pour rubber safety surfacing is a flexible two-course system which can be installed to varying depths. The non-slip top layer, known as the wearing course, consists of tough and durable EPDM (Ethylene Propylene Diene Modified) rubber granules. These clean cut and clean faced granules provide a well bonded surface with a high tensile strength that will prove to be extremely durable. Coloured surfaces are formed from virgin EPDM rubber and are coloured throughout.

Black surfaces or coloured mixes incorporate a recycled EPDM rubber derived from the waste produced in the manufacture of industrial rubber mouldings and also from rubber seals derived from the automotive trade.

The base course comprises granulated recycled SBR (Styrene Butadiene Rubber) to varying depths dependent on the play equipment installed within the area and any CFH requirements. The soft base layer cushions the fall, progressively deforming and lengthening the impact over time and distance.

CFH (Critical Fall Height)

The height of any potential fall dictates the extent of safety surfacing around the play equipment. Establishing the area size that needs soft surfacing differs for stationary equipment and swings. For more detail consult the Technical team.

Substrate Requirements

A sound, well prepared sub base is essential for a long lasting surface. When the depth of rubber safety flooring is >40.0 mm it can be laid directly onto an accurately laid free draining aggregate sub-base. For depths <40mm the base will need to Macadam, Concrete, or Compacted MOT Stone (Type 1 or 3). A sub base with adequate drainage is essential to ensure that water can be removed from the surface.

Application Instructions

Optimal Conditions

The best conditions to install **vebro**bound systems is when it is warm and dry between 5°C and 25°C.

If it is extremely hot, the resin can cure too quickly, making it difficult to trowel and create a uniform appearance.

If it is too cold, the resin can take longer to cure, resulting in a softer surface that's more susceptible to moisture damage - however we do have catalyst to increase the rate of cure in cold dry temperatures.

If there is high humidity during installation this can lead to an inconsistent texture and compromised aesthetic appeal.

Other weather conditions to avoid include, rain, fog or mist, where water ingress can cause "blooming" or whitening within the product.

Although the **vebro** PU Crumb Binder is moisture tolerant we strongly advise against working in wet / rainy conditions Don't ever lay onto wet surfaces - standing water should be well brushed away and directed to drains.

Mixing

It is recommended that the materials are mixed using a force action mixer as the **vebro** PU Rubber Crumb Binder and rubber gravel aggregates must be agitated and not just stirred.

First weigh out the **vebro** PU Rubber Crumb Binder in a silicone mould or vessel, this will ensure that any residual binder can be easily scraped out and poured into the mix with the aggregates and prevent skins forming in the vessel for subsequent mixes.

The following ratios of **vebro** PU Rubber Crumb Binder by weight of aggregates are recommended:

- **vebro** Rubber Crumb Granules (Base SBR) – 10%
- **vebro** Rubber Crumb Granules (EPDM) – 20%
- **vebro** Rubber Crumb Granules (EPDM Eco Black) – 25%
- **vebro** Rubber Crumb Granules (EPDM / Eco Black Mix) – 25%

Thoroughly mix all components in a forced action mixer for 3 – 4 minutes,

Application

The shock pad should be mixed, barrowed out and poured in-situ. Set screeding bars to the required depth and loosely screed out the material, allowing it to settle and find its own level with its own weight.

The system is designed to offer both SuDS compliance and a level of cushioning, do over compact the material. Lightly close with a trowel, roller or power float

This material will cure in 4 – 6 hours (rock hard) but typically has 2 hours of gel time as standard. This can be catalysed, if necessary, in scenarios where works must be completed quicker.

In terms of the second layer, the above steps should be followed – increasing the binder addition as required. ***More binder is needed in the wear coat to prevent the surface from fretting and shedding.***

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A three-man crew is recommended; one operative to mix, one operative to barrow out and trowel and one operative to lightly roll the material to a level finish. Again, take care not to over compact the material, it should be light and spongey.

Tool Lubrication
An oil-based lubricant such as **vebro** Release Agent is recommended to mist over both the trowel and roller to prevent sticking.

Washing-up liquid and water is not recommended; **vebro** PU Crumb Binder is a 1-comp moisture cure binder that will react with moisture. Residual water on the trowel could lead to inconsistencies or a milky colour in the finish.

Likewise, do not use diesel, this is an aggressive solvent and will react negatively with the polyurethane resin binder. A light mist of **vebro** Release Agent will help to glide over the levelled material.

Designs & Patterns

Many designs can be incorporated into a wet-pour rubber crumb surface, hop scotches, footprints, flowers, caterpillars etc as well as custom logos, emblems and / or badges. These can be prefabricated off site for a very reasonable cost and simply primer bonded to the shock pad. Crews then just install the surface layer up to the edges of the prefab designs.

UV Resistance

vebro PU Crumb Binder is not aliphatic rather based on an aromatic polyurethane chemistry. As such, when used as a wearing layer the binder will yellow slightly, this is most pronounced in the warmer months as well as on lighter colours such as light blue, white or grey.

However, this top layer of binder is very thin and within a period of roughly 3-months will have abraded away exposing the coloured crumb aggregates – i.e. the yellowing from the binder will quickly fade.

The best colours to opt for are Red, Blues, Green and Black to minimise any period of yellowing.

Further Information

Information relating to the safe handling of this product can be found in the Material Safety Data Sheet. Local regulations concerning the safe handling of resin based coating materials must be observed. Suitable protective clothing including eye protection must be worn at all times.

All consumptions listed are for recommendation purposes only. Detailed application instructions and system build-up advice can be provided on request through our Technical Services team.

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Argyle House, Stanley Green Trading Estate, Epsom Avenue, Handforth, Wilmslow, Cheshire, SK9 3RN, United Kingdom

w: vebropolymers.com | e: hello@vebropolymers.com | t: +44 (0) 1618 738 396