vebro polymers

vebro PU HTS Binder (1-Pack)

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

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

Primarily, the product is used to bind SBR rubber and natural stone aggregates at a ratio of 50:50 by weight in order to construct a sub-base prior to the installation of resin-bound finishes where vehicular traffic is to be received, or as a wearing surface for pedestrian, equestrian and bicycle traffic only.

In both instances, the use of the 50/50 rubber gravel mortar eliminates the need for a macadam sub-base in SuDS compliant systems.

Component	Weight		
vebro PU HTS 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

~5 sqm / 25.0 kg unit based on 40.0 mm thickness and 50/50 SBR rubber / gravel mix.

Flash Point

>60°C Non-flammable

NCO Content

14%

HS Code

3909509090

Consumption

The recommended consumption of **vebro** PU HTS Binder is 14% by weight of the 50/50 SBR rubber / gravel mix. A minimum 40.0 mm thickness is recommended.

Overcoating Time

~12 – 24 hours @ 20°C (some mechanical preparation may be required if outside of this window).

Speed of Cure

- Light Foot Traffic – 6 hours
- Full Chemical Cure – 10 - 12 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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Aggregates

The **vebro**bound Nature Trail system comprises a 50/50 mix of granulated recycled SBR (Styrene Butadiene Rubber) and washed, dried natural stone aggregate.

Many natural stones are quarried where there are natural iron deposits present. Where this is the case, the chosen stone carries a small risk of 'iron spotting' (Small rust coloured spots on the finished surface). This should be pointed out to customer prior to ordering.

Substrate Requirements

When used as a binding agent with a 50/50 rubber gravel mix, **vebro** PU HTS Binder is suitable for use without a sub-base. However if an area is prone to water retention or ponding then it is advisable to replace the existing earth/soil with porous Macadam, porous Concrete, Compacted MOT Stone (Type 1 or 3) all of which are suitable sub bases.

Substrate Preparation

One of the most common applications is for pathways without existing sub bases. In these instances it is recommended to consult with the client and ascertain the areas that do not drain or are prone to flooding and retain water.

It is best practice to dig out a minimum 150.0 mm, and in some instances 500.0 - 600.0 mm, and replace this with compacted Type 3 MOT stone. This will ensure that the surface areas subject to excessive or prolonged rain fall will be usable and prevent damage caused by freeze and thaw in the winer months.

When using nonporous sub bases, place ensure adequate drainage is in place prior to installation.

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 HTS 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 HTS Binder and rubber gravel aggregates must be agitated and not just stirred.

First weigh out the **vebro** PU HTS 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 HTS Binder by weight of aggregates are recommended:

- **vebro** PU HTS Binder – 14% by weight7.0 kg
- **vebro** Rubber Crumb Granules (Base SBR) (2.0 – 6.0 mm) 25.0 kg
- **vebro** Decorative Stone* (1.0 – 3.0 mm) 25.0 kg

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

Application

The material 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 10 – 12 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.

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

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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.

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.

UV Resistance

vebro PU HTS 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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