

TECHNICAL INFORMATION
SWARCOPLAST Repair Kit



SWARCOPLAST Repair Kit

1	Main Characteristics	3
2	Packaging and Storage	3
3	Technical Information	3
3.1	Physical Properties	3
3.2	Aggregate	3
3.3	Material Performance	4
3.4	Spread Rates	4
4	Surface Preparation	4
4.1	Suitability of Road Surface	4
4.2	Preparation of the Road Surface	4
4.3	Concrete Substrates	5
5	Application	5
5.1	Weather Conditions	5
5.2	Installation	5
6	Certifications	6

Important Information:

Please consider our General Terms and Conditions and the general notes of the Technical Information Sheet! No liability is accepted for any errors! The information is provided to our best knowledge and experience. This information is, however, no warranty for any properties of the material. We provide this information without obligation, also regarding the rights of third parties. The user has to make sure that the material is appropriate for the respective application.

1 Main Characteristics

- A durable and easy to install patch kit that can be used to repair worn or damaged areas of high friction surfacing as well as ramps, paths and walkways.
- SWARCOPLAST Repair Kit provides an all in one solution with no specialist equipment required.
- Available in natural buff or dark (grey) calcined bauxite's, or green and red options are colour coated granite aggregates. SWARCO PUMAGRIP TYPE 1 binder is an off-white / light buff colour.

2 Packaging and Storage

The SWARCO PUMAGRIP TYPE 1 binder component of SWARCOPLAST Repair Kits is supplied in premeasured 3.75L quantities. The catalyst (hardener) is supplied in a sealed, pre-weighed 60g plastic tub. Dosage of the catalyst can vary according to material temperature – see the relevant Installation Method Statement for details. It is recommended that SWARCOPLAST Repair Kits should be kept totally dry and stored away from direct sunlight and areas of potential contamination.

3 Technical Information

The SWARCOPLAST Repair Kit comprises a two-component, polyurethane modified MMA binder and 100% road grade calcined bauxite or granite aggregate.

3.1 Physical Properties

Pot life at 20°C*	15 – 20 mins
Curing time at 20°C*	30 – 60 mins
Road surface temperature range	0 – 40°C
Density	1.6 ± 0.05 g/cm ³

* Dependant on ambient temperature and catalyst dosage

3.2 Aggregate

SWARCOPLAST Repair Kits use 100% calcined bauxite for buff and dark colours. Red and green repair kits use colour coated granite

Product	Bauxite (Buff and Dark)	Granite (Red and Green)
Polished Stone Value (PSV)	70+	55+
Aggregate Abrasion Value (AAV)	Max. 4	Min. 1.4
Gradation passing 3.35mm	Min. 95%	Min. 95%
Gradation passing 1.18mm	Min. 5%	Min. 5%

3.3 Material Performance

The properties of the installed product are designed to conform to the requirements below.

Parameter	Bauxite (typical value)	Granite (typical value)
Skid Resistnace Value (SRV)	75+	60+
Intial texture depth	2.0mm	2.0mm
Tensile adhesion at 20°C	1.8 N/mm ²	1.8 N/mm ²

3.4 Spread Rates

Aggregate	Approximately 7 kg/m ² using a 1-3mm stone
SWARCO PUMAGRIP TYPE 1 binder	2.3 - 2.8 kg/m ² on typical substrates, more on rough or open textures

4 Surface Preparation

4.1 Suitability of Road Surface

The system is deemed suitable for use on Highways with concrete or bituminous surfaces with texture depths of >0.5mm including >2.0mm without a pre-treatment, measured using the Sand Patch Test as defined in BS 598-105: 2000.

New bituminous substrates should be left to cool to 40°C prior to the installation of the system. Concrete surfaces should be a minimum of 28 days old and must be primed using SWARCOPLAST Primer Roll 120 primer prior to the installation of the system.

The use of a primer or applying an initial thinner coat of SWARCOPLAST PUMAGRIP TYPE 1 can help to reduce bleed through of bitumen on new substrates when circumstances do not allow the weathering in process to occur.

4.2 Preparation of the Road Surface

The road surface shall be clean, dry and free from ice, frost, loose aggregate, oil, grease, road salt and other loose matter that may impair the adhesion of the system.

Where the road surface does not comply with the above conditions it shall be cleaned by the Installer or others, by grit blasting, high pressure water jetting, low pressure water/abrasive blast cleaning, scarifying, scabbling or other means approved by the Purchaser. To remove dust and other loose matter the road surface should be vigorously brushed or treated with hot compressed air. Any oil visible on the road surface shall be removed by washing and scrubbing with a suitable detergent solution followed by flushing with clean water or by other suitable means.

Existing road markings, ironwork, road edges of area to be treated and road studs shall be suitably masked.

4.3 Concrete Substrates

On concrete substrates, SWARCOPLAST PRIMER Roll 120 shall be applied using a short pile paint roller or serrated edge squeegee at a typical coverage rate of 0.4kg/m², depending on the substrate texture and porosity. The road surface temperature shall be between 0 and 40°C. The SWARCOPLAST PRIMER Roll 120 needs to be catalysed according to the following table:

Substrate temperature (°C)	Primer pack (kg)	BPO powder catalyst (g)
0 - 5	20	1,200
5 - 15	20	800
15 - 25	20	400
25 - 40	20	200

5 Application

5.1 Weather Conditions

Installation of the system shall only be carried out with a road surface temperature of 0°C to 40°C. Road surfaces shall be dry before and during the installation of the system.

5.2 Installation

The SWARCOPLAST Repair Kit system is a two-component cold applied chemically curing polyurethane modified methyl methacrylate compound, consisting of a pre-accelerated base resin, blended fillers, and a powder catalyst (BPO), supplied in pre-weighed quantities ready for on-site mixing. The total kit size is 6kg resin (SWARCO PUMAGRIP TYPE 1) with 60g pot of BPO powder catalyst (More catalyst may be required for faster curing times in colder temperatures, please see the below table). The calcined bauxite aggregate is supplied loose in the kit tub itself and weighs 14kg.

Substrate temperature (°C)	Resin pack (kg)	BPO powder catalyst (g)
0 - 5	6	150
5 - 15	6	120
15 - 25	6	60
25 - 40	6	30

The catalyst level is critical – the minimum catalyst level is 30g per 6kg pail. Using less catalyst will cause partial curing and lead to product failure. Excessive levels of catalyst can lead to premature gelling and curing, which can lead to reduced adhesion to the substrate and product failure.

SWARCOPLAST Repair Kits should be kept out of direct sunlight during storage and use. Storage at elevated temperatures can lead to degradation of the system. Application of hot SWARCO PUMAGRIP TYPE 1 material can lead to premature gelling or curing, which can adversely affect product performance.

When using the minimum catalyst level during hot temperatures, extra time should be given to stir the mixture to ensure the catalyst mixes in fully, to prevent any curing issues.

Immediately prior to use, stir the binder thoroughly using the mixer provided until the resin is fully homogenised. Add the provided pot of BPO powder catalyst and mix thoroughly for at least 30 seconds. Ensure that the binder at the bottom and sides of the container is completely

mixed in. Do not delay once the catalyst has been added, a chemical reaction is occurring that if left in the pail will ruin the mix.

The mixed binder and catalyst shall then be spread onto the dry prepared road surface uniformly with the spreader provided at a maximum coverage area of 2 m² per kit. Coverage will vary according to the texture and porosity of the road surface.

If there are any delays, the spreader must be checked before any work restarts to ensure that no cured material is left on the spreader, which could lead to low coverage rates and ultimately shedding of the material. On more open textured surfaces a lower area than 2 m² may be achieved.

The Chinese, Guyanan or Indian calcined bauxite aggregate provided, graded 1 mm – 3 mm (completely clean and dry) shall be broadcast over the binder ensuring that all areas are covered to excess. Where the binder bleeds through, more aggregate shall be applied. The layer of aggregate shall not be disturbed whilst the binder is still wet.

The masking tape shall be removed immediately after the patch has been laid, before the binder begins to gel. After the binder has fully cured, the excess aggregate shall be removed by sweeping or other suitable means.

6 Certifications

The management system of SWARCO HITEX LTD has been assessed and registered as meeting the requirements of BS EN ISO 9001 and BS EN ISO 14001.