

TP Resin SF Technical Data

DESCRIPTION

TP RESIN SF is a high performance, two-component, UV stable resin binder for use in **TREE PIT SURFACING** and in **RESIN BOUND PAVING** in pedestrian areas. It can also be used to bind close graded stone designed to take the loading from occasional light vehicles.

This clear polyurethane resin has been formulated to achieve a binder with resilience and toughness with a degree of flexibility. It is supplied as either a single component together with a separate actuator or as 2 components. The cured material exhibits good strength and is non-yellowing.

DESIGN GUIDELINES

Resin Bound Paving / Tree Pit Surfacing mix proportions and layer thickness depend on many factors including superimposed loading, stone size and grading, stone type and the nature of the substrate.

Tree Pit Surfacing for example which sits directly over permeable stone and tree soil is usually 40 to 50mm thick with a TPSF binder content of between 4 & 5%. The stone used for a tree pit would be open graded to allow both water and air to reach the tree's roots and would be laid around any watering points and up to a tree collar.

The thickness of resin bound paving is not only determined by the loading and nature of the substrate but also the maximum size of stone used (a minimum of 3-4 times the size of the largest stone used in the mix).

At least 4% by weight of TPSF Resin should be used in purely decorative areas with no superimposed loading. This should be increased to 5 or 6% depending on the loading, stone size, grading and type.

Used with close graded stone at least 6% TPSF Resin must be used increasing with the percentage of fines in the mix (the binder/resin content increases with the superimposed loading, with softer, brittle or pervious stone types and with grading)

A modified binder is required for tumbled glass at increased percentages (refer Optus)

If in doubt about the amount of binder required refer to Optus detailing the mix of stone being used, the loading conditions, the surface onto which the product is to be laid and any other salient information.

A 3.1kg unit of TP Resin SF provides approximately 4% binder when combined with 75kg of stone and 6% when combined with 50kg of stone. Larger unit sizes are supplied to suit the mix size and the percentage binder.

Depending on the slope of the substrate, the use of the surface and the type of stone it may be necessary to apply a surface scatter of anti-slip material to improve the frictional characteristics of the surface.

SURFACE PREPARATION

General

Ambient temperature should be between 5°C and 35°C during application and cure. The substrate should be dry and there should be no threat of rain.

For low temperature applications and application onto ramps refer to Optus.

Concrete Substrate:

Concrete substrates should be at least 28 days old. Remove all contamination including oils and greases, laitance, algae, moss, etc. Remove any dust by vacuuming. Dry thoroughly and prime if substrate is at all permeable.

Bituminous Substrate:

Remove all contamination including oils and greases. Sweep clean to remove any dust. Dry thoroughly.

Tree Pits

Above the tree root ball a solid base should be created to accept the Tree Pit Surfacing system. This will include at least 50mm of granular (5-10mm size) material separated from the underlying fill or tree soil with a geo-textile as necessary to avoid migration. The surface should be completely dry before application of the surfacing.

For a heavier duty solution the surfacing can be placed in a plastic geogrid / matrix paver

MIXING AND APPLICATION

TP Resin SF binder

2 Pack System

TP RESIN SF is supplied in pre weighed packages. Stir Pack B well until a consistent colour and pour into a container. Add Pack A and mix together until homogeneous (about 2 mins)

Single Pack and catalyst

TP RESIN SF can also be supplied in a single container that should be mixed thoroughly for about 1½mins. Following this the catalyst is added and mixing continued for a further 1½mins.

Binder & Aggregate

Place the required weights of dry natural aggregate into a mixer. Commence mixing and pour in mixed TP Resin SF. Mix for a minimum of 1 minute ensuring aggregate is evenly coated.

Application

The application area must be contained in order to support the wet resin mix before it cures. In a tree pit this will typically take the form of a kerb and a temporary or permanent collar around the trunk (to allow for growth).

Apply immediately to prepared area. Either tamp down or finish with a trowel. Depending on the aggregate chosen and the type of use a light scattering of crushed glass or similar may be required to improve slip resistance (particularly with rounded stone).

COVERAGE AND CURE

Coverage rate varies with depth, stone type and stone size. Typical coverage rates are as follows:

1. A 16mm depth of resin bound paving using a 1-5mm stone blend with 5% TPSF resin requires: **1.34kg TPSF & 25.6kg of stone /sm.**

2. A 16mm depth of resin bound paving using a 0.3 - 6mm close graded stone blend with 6% TPSF requires: **1.75kg TPSF & 27kg of stone /sm.**

3. A 40mm depth of tree pit surfacing using a 6 - 10mm tree pit stone mix with 4% resin requires: **2.6kg TPSF & 62kg of stone /sm**

These figures are for guidance only and refer to specific applications. Please refer to Optus.

TECHNICAL PROPERTIES

Pot Life 20°C:	20 minutes
Cure @20°C:	3.0 – 4.0 hours
Tensile Strength	3.01 N/mm ² (7day)
	5.38 N/mm ² (3mths)
Elongation at break	55.90% (7days)
	36.33% (3mths)

HEALTH AND SAFETY

It is recommended that barrier cream, gloves, boots and overalls be worn when using TP RESIN SF. A face mask should always be worn.

For full details please refer to the appropriate material safety data sheets.



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