Star Uretech
Adhesives, Binders, Coatings

Architects manual

Introduction

The use of a synthetic resin adhesive to bond aggregates to surfaces has been established for some time, particularly in the highways sector where this concept is used for 'high-friction surfacing' on critical areas of road surface such as bends and approaches to junctions and crossings, where traffic is constantly braking.

This concept of bonding aggregate has attractions for other sectors and is being used to create aesthetically pleasing areas in architectural, streetscape and hard landscaping situations such as driveways, tree-pits and planters, where the aggregate particles are bound together with a resin binder in a 3-dimensional 'Screed' matrix, or bonded onto a horizontal surface as a 2-dimensional 'Coat and Scatter' surface dressing. The following pages provide guidance to architects and specifiers, in the selection of bonded aggregate surfacing where Star Uretech's binders are to be used as the basis of these surfaces.

Star Uretech produces variants of a patented resin system designed specifically for these types of application:-

TekGrip® DSR, DFX and DD2 are used for 2-dimensional, 'Coat and Scatter', 'Broadcast' or 'Bonded' systems, which are decorative versions of the highway industry high-friction surfacing, and best used for aggregate sizes not larger than 5mm.

TekGrip® DPB is designed for Screed or 'Bound' systems that have a significant depth, such as tree-pits where water permeation is critical. This system can be used for larger aggregate – up to 10mm, and has been developed for use with multi-sized 'engineered' blends, and while a wider particle size distribution improves matrix strength & trafficability, larger size aggregates produce a water permeable and SUDS compliant screed.

The technical and practical benefits provided by TekGrip® systems include moisture tolerance, low temperature cure and no primer requirement. This enables contractors to operate in a wider application window for the external application of these toppings. The finished surfaces give the appearance of traditional loose aggregate, but without the attendant problems of gradual displacement and migration of particles onto adjoining areas, rutting from traffic, and accumulation of partially buried and trapped rubbish.

Bonded & Bound Aggregate Landscape Systems.

Using TekGrip® DSR, DFX, DD2 and DPB.

Architectural considerations

When considering aggregate surfacing for roads, pathways, tree bases and hard landscaping in general, there are a number of advantages to using bonded rather than loose laid aggregate.

- The aggregate stays where it is laid and is not displaced by vehicle or pedestrian traffic.
- Design Freedom, e.g. permanent curves, edge definition, the combining of colours, etc. (figs.1&2)
- The aggregate does not 'rut' or 'track' where vehicles constantly take the same route.
- Rubbish does not become half buried, making it look unsightly.
- The topping is more readily cleaned.
- Raking is not necessary.

Fig 1: Coat and Scatter

Fig 2: Fully Bound Screed

Whilst the most important consideration from the specifier's point of view will probably be the colour and aesthetic aspect that a topping imparts to anything from a whole landscape to isolated tree bases (fig.3), there are a number of other aspects to take into consideration before settling on the most appropriate solution.

Fig 3: Tree Pit

These systems fall into one of two categories, 'Coat & Scatter' (sometimes referred to as 'bonded'), or 'Screed' (sometimes referred to as 'bound'). Not all aggregates are suitable for both types, and some create a more pleasing appearance in one type rather than the other. However the ultimate decision should be made by reference to a realistic sample.

Resin Bound & Resin Bonded Systems

Resin bonded or ‘Coat & Scatter’ (fig.4) defines the system where a layer of bonding resin is applied to the substrate and the aggregate is scattered generously onto the resin while it is still in a liquid state. Once the resin has cured, the excess aggregate can then be brushed off to leave a stable surface. This creates a topping that is a single layer, 2-dimensional surface. Resin bound or ‘Screed’ (fig.5) defines the technique where aggregate and binder resin are mixed together in a mechanical, forced-action mixer and the resultant mix is then screeded onto the work area to be treated.

Resin Bonded (Coat and Scatter)

The principle with ‘Coat & Scatter’ is for each individual aggregate particle to be embedded 50-60% into the resin layer. This is the optimum 'particle bond profile' and is the best compromise between the area of the aggregate particle that is bonded and the area of the particle remaining visible.

Fig 4: Coat and Scatter

Experience has shown that in order to achieve the best particle packing and thereby obliteration of the underlying resin, a small variation in particle size (fig 6) is better so that a nominal 3mm aggregate should contain some particles of 1-2mm. In general, 3mm or smaller aggregate (fig.7) has been found to give the best wear characteristics or ‘erosion index’, suffering less from 'flick-out' under traffic conditions. However, some inclusion of larger particles does give a more pleasing and less gritty appearance.

Fig 5: Screed

With particle sizes of 6mm and over, the gaps between the particles, even when packed as densely as possible, start to become visually more apparent, even if the bonding resin colour is sympathetic to the aggregate colour.

Fig 6: Dobbsweir 2mm to 5mm

In some instances a contrasting resin colour (fig.8) may be seen as attractive and Star Uretech can produce TekGrip® DSR, DFX & DD2 binders in colours to either blend or contrast with the aggregate.

Normally buff is used but grey, blue, yellow, terracotta, green and chocolate can be produced to a minimum quantity special order and a colour paste is available to tint buff to grey or buff to terracotta when only small quantities are required.

Fig 7: 1mm to 3mm Aggregate

Resin Bound (Screed)

The ‘Screed’ or ‘resin bound’ system is simply a screed in which aggregate particles are bound together with a resin binder. The principle with the ‘Screed’ is for all the aggregate particles to be completely coated with resin and compacted properly to maximise contact points resulting in a matrix packed as densely as possible to achieve maximum strength. A ‘Screed’ system is laid to a defined depth - which should be suitable for the desired end use and at least 3 times the depth of the largest particle and hence this system is a 3-dimensional matrix (fig.9, 10).

Aggregate

The TekGrip® systems will bond most aggregates provided they are dry and dust free. Correct choice of aggregate is important to optimise the long-term performance of a decorative aggregate surface and while appearance is usually the first consideration, other factors are pertinent. Hardness is particularly important, especially so in a ‘Coat & Scatter’ system as a soft aggregate will crush under traffic conditions.

Fig 8: Spanish Marble on DSR Buff

The selected products technical data sheet and approved aggregates list should be consulted for information on the hardness and suitability for use in the area concerned.

Fig 9: 3-Dimensional Screed

For ‘Coat & Scatter’ applications the particle size should not exceed 5mm as above this size the space between particles becomes more apparent, and while the resin adhesive is coloured to blend with the aggregate, it will become more visible. In reality, some variation in size gives the best particle packing, e.g. 1-3mm or 2-5mm.

Fig 10: 3mm Terracotta Screed

Aggregates with a matt surface bond better than those with a glassy surface (fig.11) and calcined bauxite will give the best long-term performance with less particle loss from the surface. “Terracotta” is a red granite which also has good long term wearing properties.

Aggregates vary considerably in shape, size and size distribution, colour and hardness and some are relatively local to certain areas incurring high transportation costs to deliver them far field. Only approved, dry, dust-free decorative aggregates should be used.

Fig 11: 1mm to 3mm Chinese Bauxite

Coat & Scatter systems will generally use 3mm, 1-3mm, or 2-5mm aggregate (fig.12). With a Screed system there are more elements to consider and these are governed primarily by:-

- Traffic Loadings
- Particle Size
- Substrate

Tree-pits are perhaps the simplest to consider where a relatively large particle size of 6mm or 6-8mm, or even 6-10mm is used to ensure easy permeation of water to the tree roots (fig.13) and because this is always laid onto an unbound substrate the depth should be 50mm minimum. A tree pit is not trafficked to any significant extent and therefore an 'engineered' particle blend for greater strength is not always essential.

Particle Size & Distribution

The overall strength of a Screed system is greatly increased by 'engineering' the particle packing density to increase the point contact within the matrix.

This will be important if the area concerned is subjected to vehicle traffic. Star has approved a number of aggregate blends which have been designed for such applications (fig.14, 15).

Rolling Coat & Scatter systems produces a flatter, more uniform and visually pleasing finish by packing the aggregate particles as densely as possible and compensating for any minor localised variations in resin thickness.

This is particularly so with larger particles; the roughness of the overall surface is reduced as the projecting aggregate points are pressed down. If, however slip-resistance is a primary consideration, the surface should not be rolled.

Fig 12: 3mm to 5mm Red Granite

Fig 13: 6mm to 10mm Amber Flint

Fig 14: 1mm to 3mm Marble/Glass Blend

Fig 15: 1mm to 5mm Golden Beach

SUDS

When applied on a suitable substrate the TekGrip® DPB system is permeable. Use of a narrow particle size distribution of a larger aggregate increases the size of the interstices within the screed matrix so that the passage of water is virtually uninhibited and such a screed is thereby SUDS (Sustainable Urban Drainage Systems) compliant. (fig.13)

See note under substrates header.

The Resins

Star Uretech binders have been designed for bonding aggregate in a variety of applications - originally for high-friction surfacing on highways (fig. 16, 17). Two of these resins - TekGrip® DSR & DFX are polyureas (highly modified polyurethanes) which have been designed to be tolerant of less than ideal application conditions. In particular they:-

- Can be used on a variety of substrates including steel, cast and ductile iron. (fig. 18 & 19)
- Do not require a primer on concrete and bituminous substrates, nor, in most cases, on wood or metal.
- Will tolerate damp conditions, especially high moisture levels in substrate concrete.
- Will cure at low temperatures; (4-6 hours @ 3ºC, 1-2 hours @ 25ºC).

The combination of these characteristics means that Uretech resin adhesives provide a very real benefit to contractors and project managers alike because they widen the 'application window' for the installation of bonded aggregate systems. In practical terms, year round external applications may be contemplated and providing conditions are dry a skilled installer will be able to work in both the winter and summer months.

TekGrip® DD2 (Summer) is a conventional polyurethane and consequently must only be used in dry conditions. Its reduced cure speed makes it ideal for warm weather applications.

TekGrip® DSR (Professional), DFX (Flexible) and DD2 (Summer) binders are normally supplied buff but can coloured to complement aggregates using the range of TekGrip® Spectrum stainers. This is important for a Coat & Scatter system where small points of underlying binder will inevitably be visible causing shading of the finished area (fig. 20). In a screed system the aggregate particles are completely coated with a clear and un-pigmented resin binder.

TekGrip® DPB (Decorative Pebble Binder) is light-stable and therefore the natural colour of the stone is maintained (fig. 21).

Fig 16: Uretech HFS

Fig 17: High Friction Surfacing

Fig 18: HFS - Metal Deck Bridge

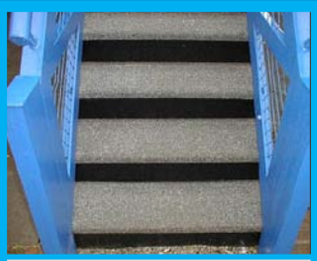


Fig 19: Non-Slip Metal Steps

Fig 20: Same Aggregate on Buff (T-Left) & Grey (B-Right)

Fig 21: Brittany Bronze/DPB

The Substrate

The substrate will normally be:-

- Concrete
- Blacktop / bituminous composition
- Metal
- Wood

No primer is necessary on either concrete or blacktop before application of Uretech TekGrip® adhesives but the substrate must be of sufficient structural integrity and depth to withstand the traffic loading to which it will be subjected. In the case of a Screed system installed in a tree-pit (fig. 22), the sub-layer will be soil, or possibly MOT. A layer of the prescribed aggregate should be laid loose onto the sub-layer to the same depth as the Screed will be laid. The depth of Screed should allow for the fact that the substrate has limited structural integrity and be laid typically at 50mm.

Fig 22: Tree Pit & Path/DPB

Fig 23: SMA Roadway

With a Coat & Scatter installation, if the substrate surface has a coarse texture (fig. 22) or contains depressions, holes or negative texture, then the resin consumption will increase markedly, possibly by as much as 100%, as resin will concentrate in the holes and depressions. When the aggregate is applied it may be submerged locally within these depressions, with greater resin displacement than on the surrounding area. This in turn will create localised high patches where the resin is more visible than elsewhere, detracting from an overall uniform appearance. The system is not designed to compensate for a poor surface and therefore the use of a scratch coat may be necessary to correct these defects.

Fig 24: Scratch Coat Build-Up

Scratch coat (fig.24) can be produced by mixing coarse, sharp, sand into TekGrip® DSR or DFX. In contrast, the Screed system is less sensitive to substrate variations and a scratch coat is not necessary, although it is advisable to fill out major depressions to ensure uniformity of application.

Fig 25: DSR Applied in winter

With both Screed and Coat & Scatter installations (fig.25) the substrate must be clean, dry and free of all loose and friable material (with the exception of screed systems being laid on MOT). Any oil contamination must be removed, as this will prevent adhesion of resin to the substrate. Use a proprietary degreasing agent that can be power washed off, well in advance of the work commencing.

Concrete

Concrete provides the best structural support for these surfaces. If the concrete is yet to be laid it should be installed to a depth commensurate to the traffic loadings; for light vehicle traffic this will be 125-150 mm, and typically 30N strength, with a single layer of reinforcing mesh. Due consideration should be given to anticipated movement and the installation of crack inducer or contraction joints (consult a structural engineer). The concrete should be a minimum 7 days old with a fine float or brushed finish and minimum strength of 25N. Any laitance should be removed. Trowel marks or ridges will reflect in the finished appearance of a Coat & Scatter system.

Blacktop

Blacktop covers various forms of 'bitumen bound surfacing', and is classed as 'flexible pavement'. New blacktop should be 10mm close graded using bitumen of maximum PEN 125 (preferably 90), well compacted and laid in accordance with BS 4987. Blacktop is always liable to some degree of movement which can result in visible cracks in the surfacing, more especially with Coat & Scatter systems because they lack the depth through which to dissipate the forces created by the movement. The specifier should give serious consideration to the use of TekGrip® DFX for use on blacktop. Be aware that blacktop is liable to movement (flow) especially where steep slopes are found. Precautions should be taken to minimise any movement within blacktop by observing the advice below.

- Ensure proper compaction. Refer to BS 4987
- Use base course blacktop with larger stone (10 mm) rather than a finishing layer which contains only fine particles. The more open textured surface which this produces can then be filled with scratch coat to maximise the coverage rate of binder.
- Do not use bituminous surfacing let down with fuse/flux oil to prolong the working time as this will only serve to increase the flexibility of the material.
- Do not install on top of sand carpet.

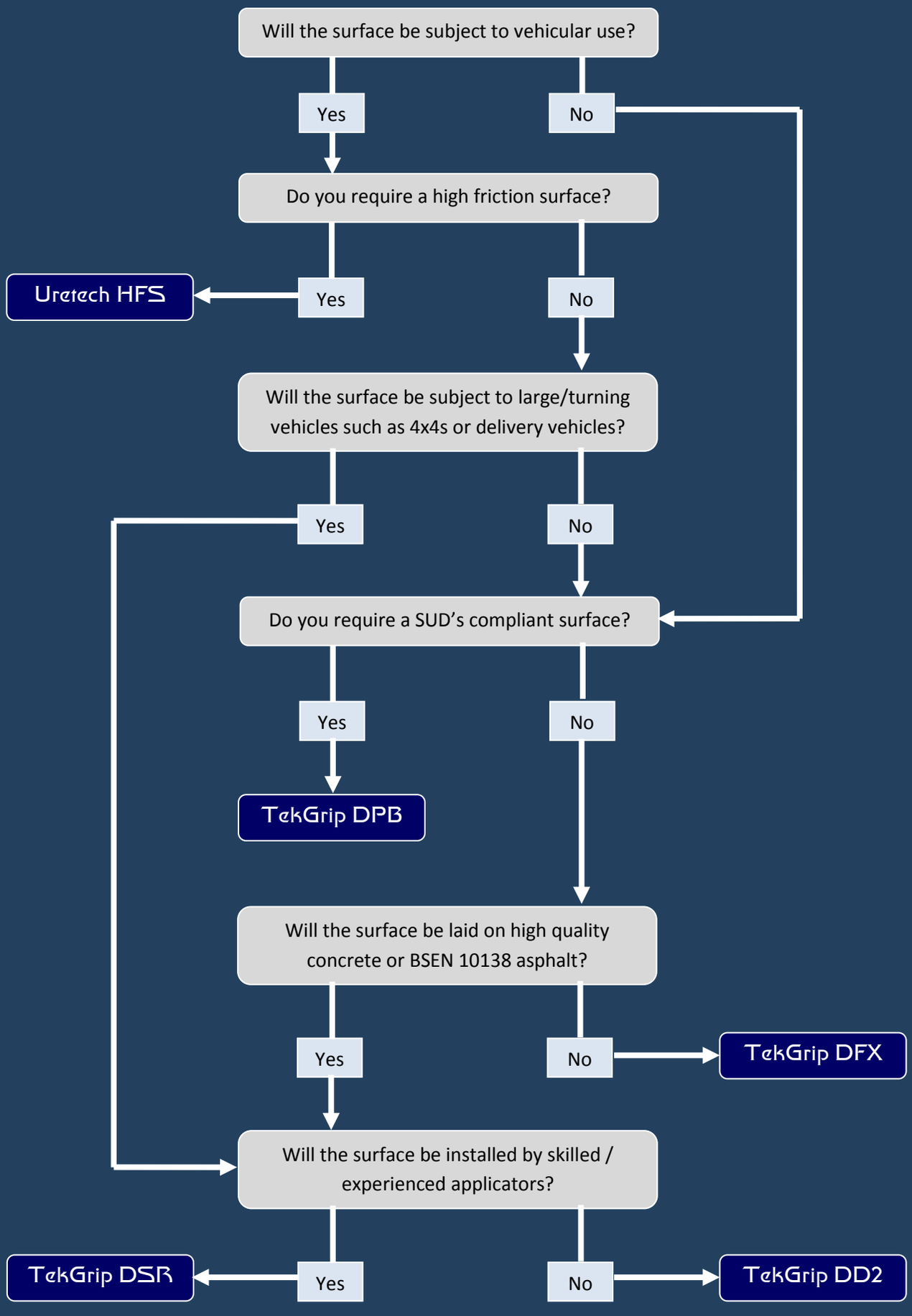
Fig 26: Coloured HFS

Fig 27: Coloured DSR

Fig 28: DFX on blacktop

TekGrip® DFX has been specially developed for use on blacktop, and although it does not have the wearing resistance (erosion index) of a "Type 1" high friction surfacing system such as TekGrip® DSR, the product does pass the Highways Agency scuffing test to Type 2 and should be more than adequate for all but the most demanding of wear requirements. TekGrip® DFX should always be used where the quality of the blacktop is unknown.

Which System to Use?



Aggregate Selection

The following table lists aggregates that are approved to be used in blends with TekGrip DPB (Bound). When selecting the correct aggregate for use with TekGrip DSR, DD2 or DFX a small (typically 1mm to 3mm) aggregate with a minimum performance rating of 4 should be used.

The correct aggregate selection is essential in a resin bound system. Unless otherwise stated a specially washed, dried, dust free aggregate blend must be used in conjunction with TekGrip DPB. The appearance and performance of the finished surface is dependent on the type and size of aggregate used. A three part, dry, dust free, type 1 decorative aggregate blend should consist of approximately:

1 x TekGrip DPB 7kg kit - 50kg of small aggregate - 50kg of medium aggregate - 6kg of fine aggregate or sand (C16-30 or QS 0.7-1.2)

Failure to use an approved aggregate blend or apply TekGrip DPB at or above the required 'minimum' depth for the application type can result in reduced performance or product failure. Under no circumstances should builders sand, D30, D52 or D110 sand be used with TekGrip DPB.

Autumn Gold	Small	Medium	Large
	1mm-3mm	2mm-5mm	N/A
Foot Traffic	✓	BLEND	N/A
Vehicular Traffic	BLEND	BLEND	N/A
Treepit	X	✓	N/A

Type: Quartz & Granite / PSV: 54 / Performance: 3

Amber Flint	Small	Medium	Large
	N/A	2mm-4mm	N/A
Foot Traffic	N/A	BLEND	N/A
Vehicular Traffic	N/A	BLEND	N/A
Treepit	N/A	BLEND	N/A

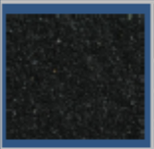
Type: Flint shingle / PSV: 45 / Performance: 2

Barley	Small	Medium	Large
	N/A	2mm-5mm	N/A
Foot Traffic	N/A	BLEND	N/A
Vehicular Traffic	N/A	BLEND	N/A
Treepit	N/A	BLEND	N/A

Type: Quartz / PSV: Not available / Performance: Not available

Beige Marble	Small	Medium	Large
	1mm-3mm	2mm-5mm	N/A
Foot Traffic	✓	BLEND	N/A
Vehicular Traffic	BLEND	BLEND	N/A
Treepit	X	BLEND	N/A

Type: Marble / PSV: 40 / Performance: 1



Black Basalt	Small	Medium	Large
	1mm-3mm	2mm-5mm	N/A
Foot Traffic	✓	BLEND	N/A
Vehicular Traffic	BLEND	BLEND	N/A
Treepit	X	BLEND	N/A

Type: Basalt / PSV: 60 / Performance: 3

Brittany Bronze	Small	Medium	Large
	1mm-3mm	2mm-5mm	6mm-10mm
Foot Traffic	✓	BLEND	X
Vehicular Traffic	BLEND	BLEND	X
Treepit	X	BLEND	✓

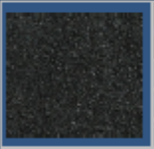
Type: Quartzite / PSV: 50 / Performance: 3

CCKC	Small	Medium	Large
	.5mm-1mm	1mm-2mm	1mm-3mm
Foot Traffic	BLEND	BLEND	BLEND
Vehicular Traffic	BLEND	BLEND	BLEND
Treepit	X	X	X

Type: Calcined Kaolinite / PSV: 66 / Performance: 5

Chinese Bauxite	Small	Medium	Large
	.9mm-1mm	1mm-3mm	N/A
Foot Traffic	BLEND	BLEND	N/A
Vehicular Traffic	BLEND	BLEND	N/A
Treepit	X	X	N/A

Type: Calcined Bauxite / PSV: 72 / Performance: 5



Copper Slag	Small	Medium	Large
	.2mm-.7mm	1mm-2mm	N/A
Foot Traffic	BLEND	BLEND	N/A
Vehicular Traffic	BLEND	BLEND	N/A
Treepit	X	X	N/A

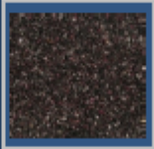
Type: Iron Silicate / PSV: 76 / Performance: 5

Corn Flint	Small	Medium	Large
	1mm-3mm	2mm-5mm	N/A
Foot Traffic	✓	BLEND	N/A
Vehicular Traffic	BLEND	BLEND	N/A
Treepit	X	BLEND	N/A

Type: Marine Flint Shingle / PSV: 35 / Performance: 2

Danish Quartz	Small	Medium	Large
	1mm-3mm	2mm-5mm	N/A
Foot Traffic	✓	BLEND	N/A
Vehicular Traffic	BLEND	BLEND	N/A
Treepit	X	BLEND	N/A

Type: Quartz / PSV: 50 / Performance: 4



Dark Ruby	Small	Medium	Large
	1mm-3mm	3mm-5mm	3mm-7mm
Foot Traffic	✓	BLEND	BLEND
Vehicular Traffic	BLEND	BLEND	X
Treepit	X	BLEND	✓

Type: Chrome Slag / PSV: 71 / Performance: 5

Dobbsweir	Small	Medium	Large
	N/A	N/A	3mm-6mm
Foot Traffic	N/A	N/A	BLEND
Vehicular Traffic	N/A	N/A	BLEND
Treepit	N/A	N/A	BLEND

Type: Quartzite / PSV: 35 / Performance: 3

Dorset Golden Pea	Small	Medium	Large
	1mm-2mm	1mm-3mm	2mm-5mm
Foot Traffic	BLEND	✓	BLEND
Vehicular Traffic	BLEND	BLEND	BLEND
Treepit	X	X	BLEND

Type: Quartzite / PSV: 55 / Performance: 3

Golden Beach	Small	Medium	Large
	1mm-3mm	N/A	N/A
Foot Traffic	✓	N/A	N/A
Vehicular Traffic	BLEND	N/A	N/A
Treepit	X	N/A	N/A

Type: Quartzite / PSV: 55 / Performance: 3

Golden Quartz	Small	Medium	Large
	1mm-3mm	2mm-5mm	N/A
Foot Traffic	✓	BLEND	N/A
Vehicular Traffic	BLEND	BLEND	N/A
Treepit	X	BLEND	N/A

Type: Quartz / PSV: 50 / Performance: 3

Green Granite	Small	Medium	Large
	1mm-3mm	2mm-5mm	N/A
Foot Traffic	✓	BLEND	N/A
Vehicular Traffic	BLEND	BLEND	N/A
Treepit	X	BLEND	N/A

Type: Dolerite / PSV: 62 / Performance: 5

Grey Granite	Small	Medium	Large
	N/A	3mm	N/A
Foot Traffic	N/A	BLEND	N/A
Vehicular Traffic	N/A	BLEND	N/A
Treepit	N/A	BLEND	N/A

Type: Granite / PSV: 55 / Performance: 2

Guyanan Bauxite	Small	Medium	Large
	.9mm-1mm	1mm-3mm	N/A
Foot Traffic	BLEND	✓	N/A
Vehicular Traffic	BLEND	BLEND	N/A
Treepit	X	X	N/A

Type: Calcined Bauxite / PSV: 71 / Performance: 5

HM Quartz	Small	Medium	Large
	1mm-3mm	2mm-5mm	N/A
Foot Traffic	✓	BLEND	N/A
Vehicular Traffic	BLEND	BLEND	N/A
Treepit	X	BLEND	N/A

Type: Alluvial Quartz / PSV: 50 / Performance: 3

Jerez Yellow	Small	Medium	Large
	1mm-3mm	2mm-5mm	N/A
Foot Traffic	✓	BLEND	N/A
Vehicular Traffic	BLEND	BLEND	N/A
Treepit	X	BLEND	N/A

Type: Marble / PSV: 40 / Performance: 1

Pearl Quartz	Small	Medium	Large
	N/A	2mm-5mm	N/A
Foot Traffic	N/A	BLEND	N/A
Vehicular Traffic	N/A	BLEND	N/A
Treepit	N/A	BLEND	N/A

Type: Quartzite / PSV: 40 / Performance: 1

Multi-Flint	Small	Medium	Large
	1mm-3mm	N/A	N/A
Foot Traffic	✓	N/A	N/A
Vehicular Traffic	BLEND	N/A	N/A
Treepit	X	N/A	N/A

Type: Calcined Flint / PSV: 56 / Performance: 2

Red Granite	Small	Medium	Large
	1mm-3mm	2mm-5mm	N/A
Foot Traffic	✓	BLEND	N/A
Vehicular Traffic	BLEND	BLEND	N/A
Treepit	X	BLEND	N/A

Type: Granite / PSV: 53 / Performance: 5

Rhine Gold	Small	Medium	Large
	N/A	2mm-5mm	N/A
Foot Traffic	N/A	BLEND	N/A
Vehicular Traffic	N/A	BLEND	N/A
Treepit	N/A	BLEND	N/A

Type: Quartz / PSV: 50 / Performance: 3

Salmon Pink	Small	Medium	Large
	N/A	2mm-5mm	N/A
Foot Traffic	N/A	BLEND	N/A
Vehicular Traffic	N/A	BLEND	N/A
Treepit	N/A	BLEND	N/A

Type: Granite / PSV: 52 / Performance: 5

Silver Grey Granite	Small	Medium	Large
	1mm-3mm	2mm-5mm	N/A
Foot Traffic	✓	BLEND	N/A
Vehicular Traffic	BLEND	BLEND	N/A
Treepit	X	BLEND	N/A

Type: Granite / PSV: 54 / Performance: 4

Staffordshire Pink	Small	Medium	Large
	N/A	N/A	3mm-6mm
Foot Traffic	N/A	N/A	BLEND
Vehicular Traffic	N/A	N/A	BLEND
Treepit	N/A	N/A	BLEND

Type:Quartzite / PSV: 35 / Performance: 1

Summer Gold	Small	Medium	Large
	N/A	2mm-5mm	N/A
Foot Traffic	N/A	BLEND	N/A
Vehicular Traffic	N/A	BLEND	N/A
Treepit	N/A	BLEND	N/A

Type: Quartzite / PSV: 50 / Performance: 2

Trent Pea Gravel	Small	Medium	Large
	N/A	3mm-6mm	6mm-10mm
Foot Traffic	N/A	BLEND	X
Vehicular Traffic	N/A	BLEND	X
Treepit	N/A	BLEND	✓

Type: Alluvial Quartz / PSV: 35 / Performance: 2

Tweed	Small	Medium	Large
	N/A	2mm-4mm	N/A
Foot Traffic	N/A	BLEND	N/A
Vehicular Traffic	N/A	BLEND	N/A
Treepit	N/A	BLEND	N/A

Type: Flints & Quartzites / PSV: 40 / Performance: 2

White Dolomite	Small	Medium	Large
	.5mm-1mm	1mm-2mm	N/A
Foot Traffic	BLEND	BLEND	N/A
Vehicular Traffic	BLEND	BLEND	N/A
Treepit	X	X	N/A

Type: Dolomitic Marble / PSV: 30 / Performance: 1

White Flint	Small	Medium	Large
	N/A	2mm-5mm	N/A
Foot Traffic	N/A	BLEND	N/A
Vehicular Traffic	N/A	BLEND	N/A
Treepit	N/A	BLEND	N/A

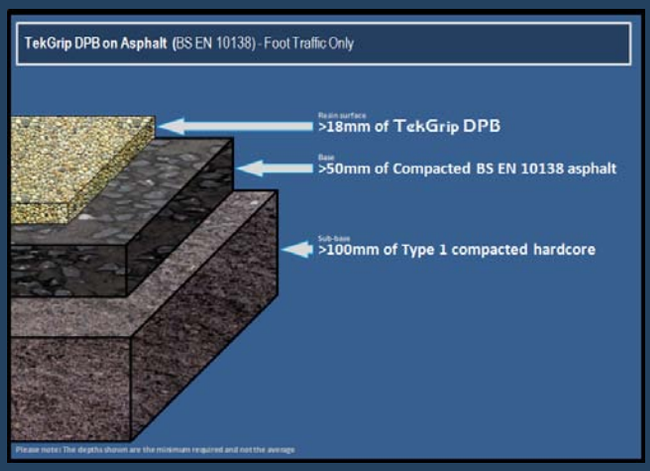
Type: Flint / PSV: 57 / Performance: 2

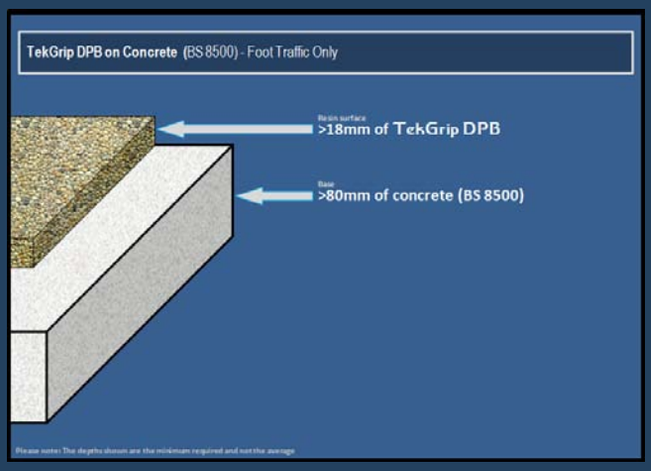
C16-30 Sand	Small	Medium	Large
	16-30	N/A	N/A
Foot Traffic	BLEND	N/A	N/A
Vehicular Traffic	BLEND	N/A	N/A
Treepit	X	N/A	N/A

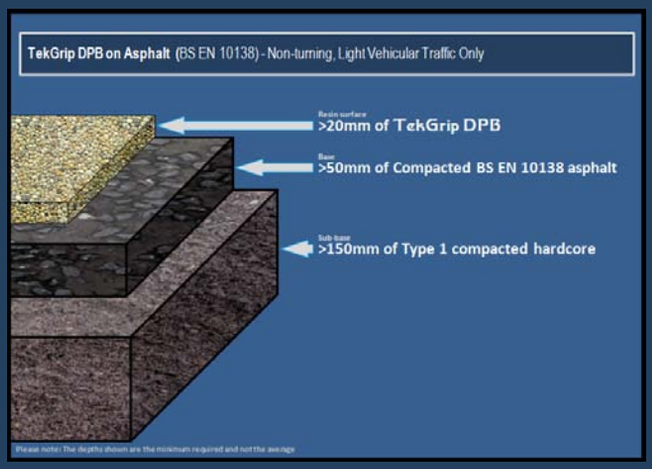
Type: Rounded sand / PSV: Not applicable / Performance: Not applicable

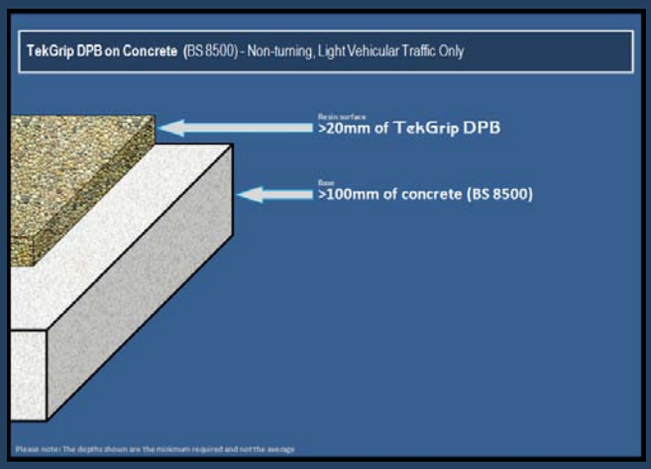
Aggregates vary considerably in cost, shape, size, colour and hardness and some are relatively local to certain areas incurring high transportation costs to deliver them far afield. Only dry, dust-free decorative aggregates that have been approved by Star Uretech should be used.

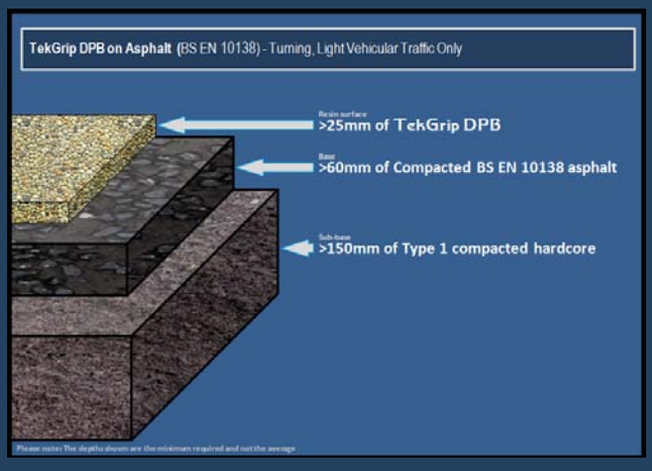
TekGrip DPB Specifications

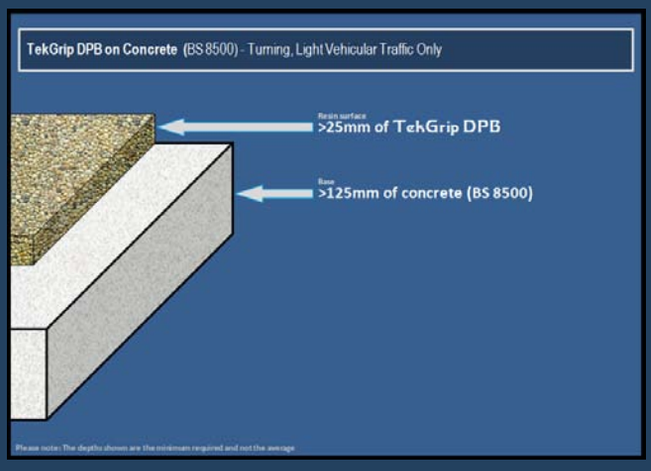


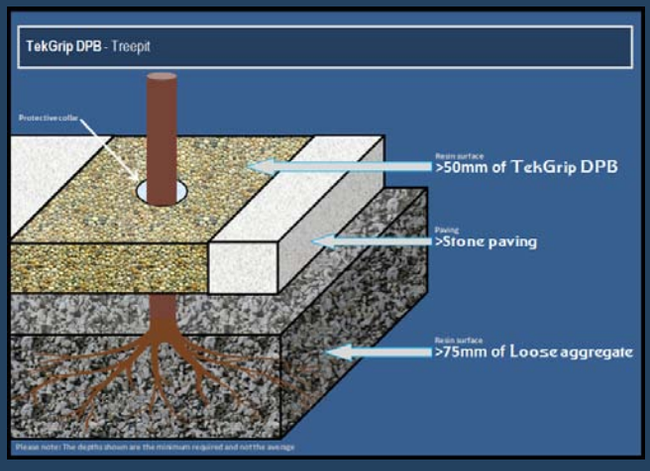




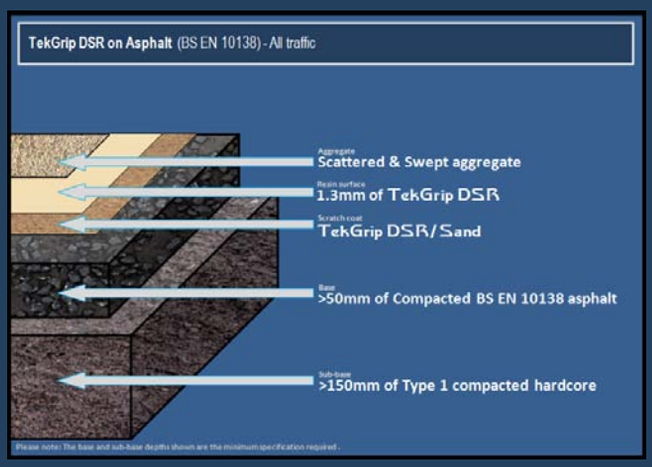


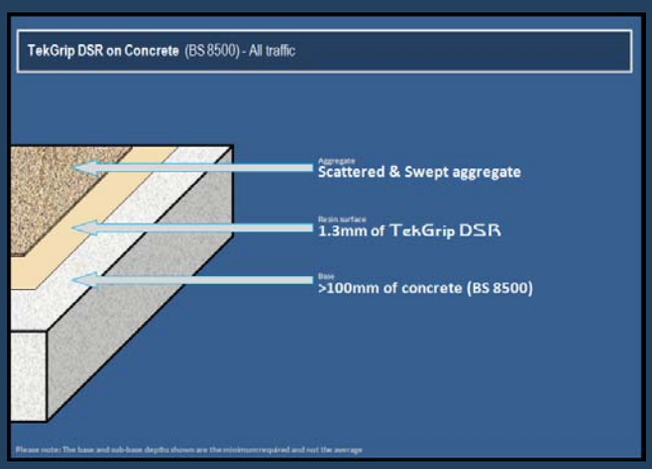




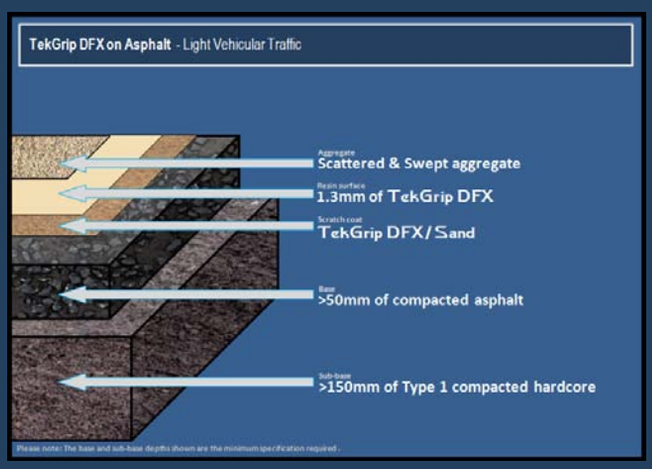


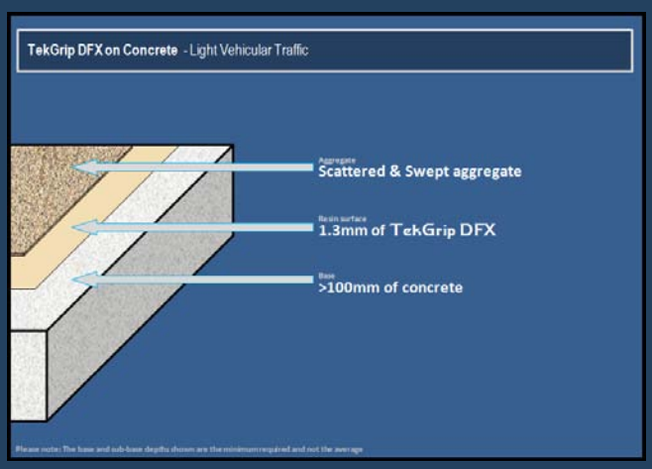
TekGrip DSR Specifications



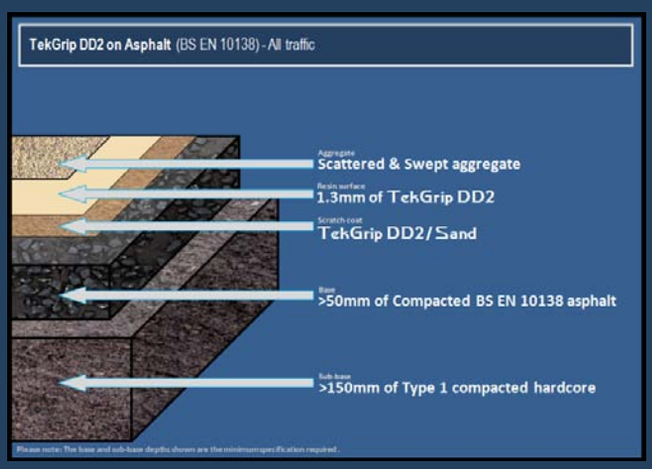


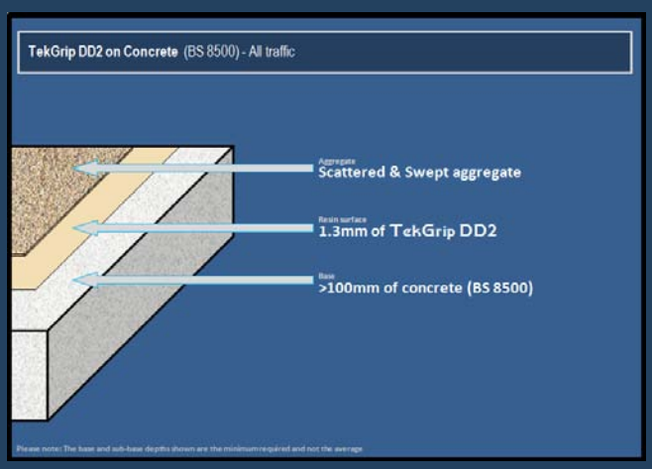
TekGrip DFX Specifications





TekGrip DD2 Specifications





Product Overview

Product	Type	Use	Technical Data	
TekGrip® DSR (Professional)	3 Component Resin Bonded Coat & Scatter Professional Grade	Decorative aggregate bonding adhesive for Concrete roads, paths and drives; Hot Rolled Asphalt (HRA); Stone Mastic Asphalt (SMA); Metal; non-oily wood.	Pot Life: (25°- 5°)	8 mins -15 mins
			Cure Time: (25°- 5°)	1½ hrs - 4 hrs
			Approvals:	Highways' Agency "Scuffing" Test T1
TekGrip® DFX (Flexible)	3 Component Resin Bonded Coat & Scatter Flexible Grade	Decorative aggregate bonding adhesive for application to, bitumen bound or 'blacktop' surfaces.	Pot Life: (25°- 5°)	8 mins -15 mins
			Cure Time: (25°- 5°)	1½ hrs - 4 hrs
			Approvals:	Highways' Agency "Scuffing" Test T2
TekGrip® DD2 (Summer)	2 Component Resin Bonded Coat & Scatter Summer Grade	Decorative aggregate bonding adhesive for Concrete roads, paths and drives; Hot Rolled Asphalt (HRA); Stone Mastic Asphalt (SMA); Metal; non-oily wood.	Pot Life: (25°- 5°)	15 mins -35 mins
			Cure Time: (25°- 5°)	2 hrs - 4 hrs
			Approvals:	Highways' Agency "Scuffing" Test T1
TekGrip® DPB (Pebble Binder)	3 Component Resin Bound Screed Decorative Grade	Binder for Decorative Surfacing Screeds at depths of 15mm upwards for 3 dimensional pebble matrix; gives gloss finish.	Pot Life: (25°- 5°)	At least 1 hour
			Cure Time: (25°- 5°)	6 hrs - 24 hrs
			Approvals:	Not applicable
Uretech HFS (High Friction Surfacing)	3 Component Resin Bonded Coat & Scatter Highway Grade	Aggregate bonding adhesive for High Friction Surfacing; Concrete roads, paths and drives; Hot Rolled Asphalt (HRA); Stone Mastic Asphalt (SMA); Metal; non-oily wood.	Pot Life: (25°- 5°)	8 mins -15 mins
			Cure Time: (25°- 5°)	1½ hrs - 4 hrs
			Approvals:	BBA HAPAS & Highways' Agency "Scuffing" Test T1

Coverage Rates

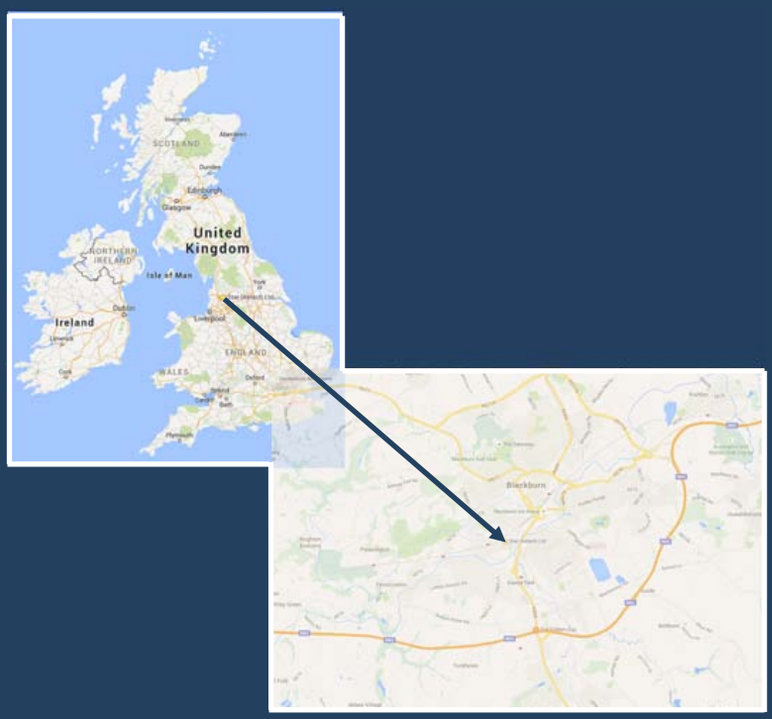
		Foot Traffic Only			Non-turning, light vehicular traffic		
		50mm BSEN 10138 Asphalt	50mm BSEN 10138 Asphalt (Scratch-Coat)	80mm BS 8500 Concrete	50mm BSEN 10138 Asphalt	50mm BSEN 10138 Asphalt (Scratch-Coat)	100mm BS 8500 Concrete
TekGrip DD2 19kg Kit	Single Kit	5.0m²	8.0m²	8.0m²	5.0m²	8.0m²	8.0m²
	Aggregate	40kg	40kg	40kg	40kg	40kg	40kg
TekGrip DFX 20kg Kit	Single Kit	6.0m²	9.0m²	9.0m²	6.0m²	9.0m²	
	Aggregate	40kg	40kg	40kg	40kg	40kg	
TekGrip DPB 7kg Kit	Single Kit	3.2m²		3.2m²	2.9m²		2.9m²
	Aggregate	100kg		100kg	100kg		100kg
TekGrip DSR 20kg Kit	Single Kit	6.0m²	9.0m²	9.0m²	6.0m²	9.0m²	9.0m²
	Aggregate	40kg	40kg	40kg	40kg	40kg	40kg
Uretech HFS 20kg Kit	Single Kit				6.0m²	9.0m²	9.0m²
	Aggregate				40kg	40kg	40kg

		Turning, light vehicular traffic			All traffic		
		60mm BSEN 10138 Asphalt	50mm BSEN 10138 Asphalt (Scratch-Coat)	125mm BS 8500 Concrete	50mm BSEN 10138 Asphalt	50mm BSEN 10138 Asphalt (Scratch-Coat)	100mm BS 8500 Concrete
TekGrip DD2 19kg Kit	Single Kit	5.0m²	8.0m²	8.0m²	5.0m²	8.0m²	8.0m²
	Aggregate	40kg	40kg	40kg	40kg	40kg	40kg
TekGrip DFX 20kg Kit	Single Kit						
	Aggregate						
TekGrip DPB 7kg Kit	Single Kit	2.3m²		2.3m²			
	Aggregate	100kg		100kg			
TekGrip DSR 20kg Kit	Single Kit	6.0m²	9.0m²	9.0m²	6.0m²	9.0m²	9.0m²
	Aggregate	40kg	40kg	40kg	40kg	40kg	40kg
Uretech HFS 20kg Kit	Single Kit	6.0m²	9.0m²	9.0m²	6.0m²	9.0m²	9.0m²
	Aggregate	40kg	40kg	40kg	40kg	40kg	40kg

Contact

Star Uretech
Enterprise House
Hollin Bridge Street
Blackburn, Lancashire
BB2 4AY

Tel: (0)1254 663444
Fax: (0)1254 681886
Email: info@star-uretech.com
Web: www.star-uretech.com



How to find us

► Leave the M65 at Junction 4 and follow the signs for Blackburn A666 and Ewood Park.

► Continue along Earcroft way, turning right at the end.

► Follow the A666 for a mile towards Blackburn, passing Ewood Park Football Stadium on your right.

► Follow the road to the left and then bear right keeping on the A666 but move into the left hand lane.

► Bear left onto Aqueduct Road and head under the aqueduct bridge.

► At the mini roundabout take the second exit onto Hamilton Street and follow the road around the corner and down Hollin Bridge Street for 150 metres.

► After the park on your left is the Star Uretech building.

► Before the Railway bridge turn left into our car park.

Notes:

Star Uretech

Adhesives, Binders, Coatings

MJA-V12-220515