

PERMAPAVE

RESIN BOUND GRAVEL PRODUCTS



PERMABOUND UVR



DALTEX



OX TOOLS



SOROTO

**PRODUCT CATALOGUE &
INSTALLATION GUIDE**

PERMAPAVE

What is PermaPave?

One of the first established multi-discipline brands in the UK resin bound gravel market, PermaPave pulls together the most popular and best quality products to provide an offering unlike any other.

We pride ourselves on the supply of high-quality aggregates, polyurethane resin binders, tools, machinery and accessories, all at highly competitive prices.

Our brands and partners are some of the best names and most renowned manufacturers in the industry and are known worldwide.

We bring these top brands together, making them available to you all in one place!



THE BEST BRANDS IN RESIN BOUND

X-Grid®

The best-selling sub-base ground reinforcement grid, X-Grid is tested to 420T/m²



The UK's leading manufacturer of polyurethane products for resin bound gravel

Daltex

Range of washed & kiln-dried aggregates & colour blends, specially made for resin bound



One of the best names in hand tools, made with the contractor in mind & designed to last

SoRoTo®

HARD WORKING SINCE 1986

SoRoTo forced action mixers are known for their durability and outstanding mixing style

Why use PermaPave?



Our product range is carefully selected to ensure that we only supply materials which are of the highest quality, from trusted manufacturers and distributors.

Our resin bound gravel kits are BBA approved which ensures that both contractor and end-user can have full confidence in the materials used and the installation process undertaken, including sub-base build up and batch checking.



We can offer an approved installer scheme which can help contractors to win more work in their area. Designed with the peace-of-mind of the end user in mind, this scheme will require entrants to comply with a set of tried and tested installation methods, as well as accurate record keeping.





Alpine

A striking mix of white gravels and speckles of silver. Modern and clean looks which can complement dark border colours or on its own.

Stone shape: **Round/Angular Mix**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**

Arcadia

This beautiful blend is a combination of bronze and grey tones. Highly popular, Arcadia can complement and contrast most modern colours.

Stone shape: **Round/Angular Mix**

Hardness rating: **7**

Ideal for: **Driveways, patios & paths**



Arizona

This rounded gravel contains several tones of brown and almond colours, mixed with some white and cream to give a beautiful overall finish.

Stone shape: **Rounded**

Hardness rating: **7**

Ideal for: **Driveways, patios & paths**



Athena

A blend of red and silver aggregates which can be used to create an individual and unique surface to give an eye-catching feel to an area.

Stone shape: **Angular**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**





Aurora

Chestnut and black tones contrast with golds and creams perfectly to create a delightfully fresh and modern surface finish for drives and paths.

Stone shape: **Round/Angular Mix**

Hardness rating: **7**

Ideal for: **Driveways, patios & paths**

Brindle

A wonderful blend of angular and rounded stone in brown, purples and pinks, creating a subtle, earthy finish. Perfect for most driveways and paths.

Stone shape: **Round/Angular Mix**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**



GRAVEL BLENDS

Cappuccino

Homely tones of yellows, greens and browns combine together to create a deep, rich surface with a varied texture and subtle effect.

Stone shape: **Rounded**

Hardness rating: **7**

Ideal for: **Driveways, patios & paths**



Carnival

A magnificent blend of warm colours, made up of red and golden yellow aggregates, this vibrant blend is ideal for both homes & commercial areas.

Stone shape: **Angular**

Hardness rating: **7**

Ideal for: **Driveways, patios & paths**





Champagne Pink

Understated and slight, the lilac, brown and purple aggregates combine and are offset against silver to produce an elegant blend.

Stone shape: **Round/Angular Mix**

Hardness rating: **6**

Ideal for: **Driveways, patios & paths**

Cornfield

Bright, vibrant and clean, Cornfield is made from a blend of white and golden aggregates. This is a highly popular blend for paths and driveways.

Stone shape: **Angular**

Hardness rating: **7**

Ideal for: **Driveways, patios & paths**



Domino

Striking and dramatic, Domino is a combination of contrasting white and black stones which is sure to create a lasting first impression.

Stone shape: **Round/Angular Mix**

Hardness rating: **7**

Ideal for: **Driveways, patios & paths**



Dune

A smooth blend of warm and sandy coloured aggregates, Dune produces an even texture with a mix of rounded and angular stones. A highly popular colour.

Stone shape: **Round/Angular Mix**

Hardness rating: **7**

Ideal for: **Driveways, patios & paths**



Eclipse

Pitch black gravel blended with silver flecks which creates a sparkling combination of dark tones which can be used equally to complement or contrast.

Stone shape: **Angular**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**

Eden

Perfectly autumnal, Eden combines green accents with summery yellows. This blend is perfect for use against lawned areas in paths or as a driveway.

Stone shape: **Round/Angular Mix**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**



GRAVEL BLENDS

Fossil

A combination of cream and silver aggregates which provides a light and modern feel which is perfect for contemporary homes and offices alike.

Stone shape: **Round/Angular Mix**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**

Glacier

White and off-white tones blended together to give a classically cool, crisp and elegant finish. This is one of the most neutral blends available.

Stone shape: **Angular**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**





Golden Pearl

A semi-rounded and smooth-textured blend of browns, yellows and off-white tones which provides a warm, smooth and durable finish which is highly popular.

Stone shape: **Round/Angular Mix**

Hardness rating: **7**

Ideal for: **Driveways, patios & paths**

Harlequin

Dramatic and classic, Harlequin contrasts the attractive silver flecks with a powerful black aggregate. This colour is really in vogue with designers.

Stone shape: **Angular**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**



Harvest Gold

Warm, homely and golden, this blend is dominated by brown tones, complemented with seams of gold running through. A truly classic blend.

Stone shape: **Round/Angular Mix**

Hardness rating:

Ideal for: **Driveways, patios & paths**



Heather

Multiple green tones and plum lowlights make Heather a truly attractive blend. Hard and long-lasting, Heather is perfect for driveways and paths.

Stone shape: **Round/Angular Mix**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**



Merlot

A bold, rich, burnished red which is a striking choice, often working well with other strong colour choices. Useful for both contemporary & traditional design.

Stone shape: **Angular**

Hardness rating:

Ideal for: **Driveways, patios & paths**

Moonshadow

A striking blend of silver, grey and black which provides a level of contrast which is perfect for modern, contemporary surroundings.

Stone shape: **Angular**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**



GRAVEL BLENDS

Morning Mist

Delicate and light, Morning Mist is made up of silver and cream tones, blended with pearl spots to give a distinctive and premium feel.

Stone shape: **Round/Angular Mix**

Hardness rating:

Ideal for: **Driveways, patios & paths**

Onyx

There are few blends which can match the drama and mood of Onyx. Wrapped with a high-gloss finish, this can be used to contrast against bright colours.

Stone shape: **Angular**

Hardness rating: **7**

Ideal for: **Driveways, patios & paths**





Orchid

This natural and neutral-coloured blend is made up of rounded greys, yellows and creams, with clusters of pink, purple and brown. A timeless classic.

Stone shape: **Round/Angular Mix**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**

Oyster

Naturally light quartz colours mixed with striking flecks of black, this colour blend has depth and character. Suitable for many settings around the home or office.

Stone shape: **Round/Angular Mix**

Hardness rating:

Ideal for: **Driveways, patios & paths**



Pearl Blush

A blend of creamy whites and yellows offset against greys and reds. Hard and durable this mix is both stunning and hard-wearing, making it a diverse choice.

Stone shape: **Round/Angular Mix**

Hardness rating:

Ideal for: **Driveways, patios & paths**

Pink Opal

Angular and rounded gravels are combined in this blend to create a soft and classic finish. Pinks, purples and browns mix to offer a timeless look.

Stone shape: **Round/Angular Mix**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**





Polarix

Contrasting & dramatic, black and silver-grey aggregates combine to provide a perfect colour for urban pedestrian settings. Contemporary, modern & sleek.

Stone shape: **Angular**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**

Riviera

Bursting with character and effortless beauty, Riviera combines sandy tones with amber and silver flecks to create a finish which is eye-catching, yet subtle.

Stone shape: **Round/Angular Mix**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**



GRAVEL BLENDS

Rock Pool

A hard pearl quartz mixed with plum undertones, this blend is full of character and distinction. This is a classic blend which can be laid in most settings.

Stone shape: **Round/Angular Mix**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**



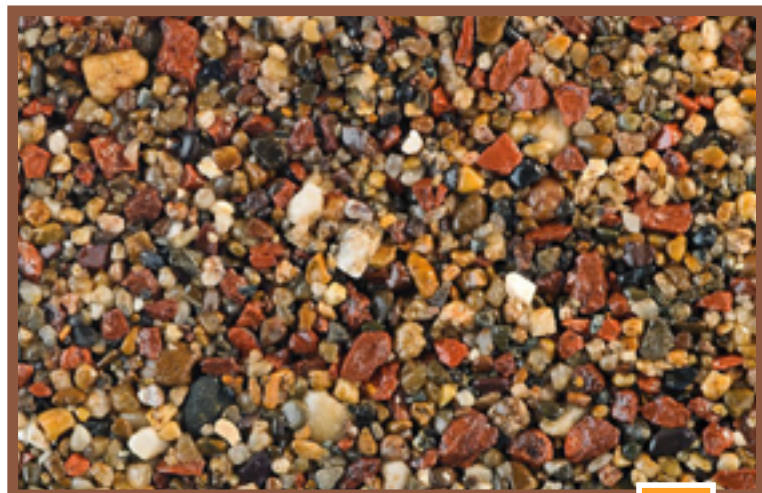
Rose Garden

A specially selected combination of round, shiny stone mixed with granite which has beautiful golden and red highlights. Ideal for red brick buildings.

Stone shape: **Round/Angular Mix**

Hardness rating:

Ideal for: **Driveways, patios & paths**





Santorini

Red and white aggregates which have been blended to create a stylish and sensational colour blend, inspired by the Mediterranean love of terracotta.

Stone shape: **Angular**

Hardness rating:

Ideal for: **Driveways, patios & paths**

Seashore

Inspired by the coast, this blend of creams, yellows and greys produces a warm and slight tone. This works beautifully with most types of settings.

Stone shape: **Round/Angular Mix**

Hardness rating:

Ideal for: **Driveways, patios & paths**



GRAVEL BLENDS



Sienna

A stunning mix of browns, oranges and reds, Sienna offers an inviting finish which is contemporary and modern without being brash or obtuse.

Stone shape: **Round/Angular Mix**

Hardness rating:

Ideal for: **Driveways, patios & paths**

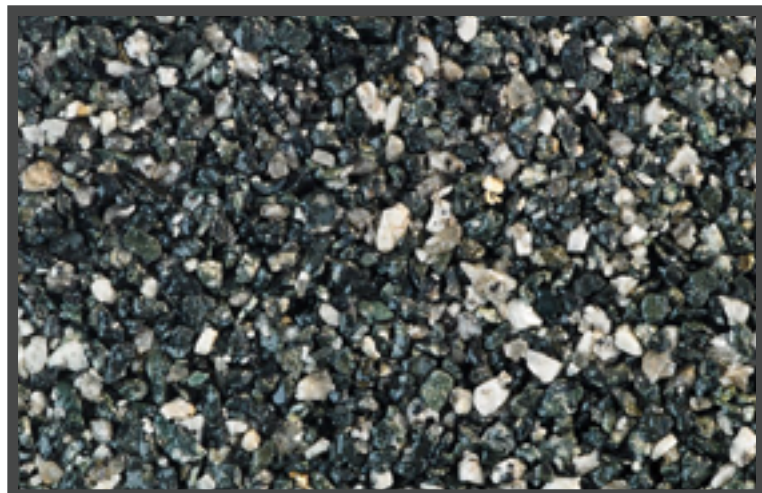
Slate Grey

A beautiful slate coloured blend which is formed of differing shades of grey. Speckled with spots of lighter gravel, this is a timeless classic.

Stone shape: **Angular**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**





Solstice

A fiery red granite aggregate which is set aside angular pink, cream and grey stones to create a spectacular blend to add instant impact to a surface.

Stone shape: **Round/Angular Mix**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**

Sorrento

Vibrant and spectacular, the combination of red and green angular gravels produces a practical and highly versatile gravel blend, suitable for most settings.

Stone shape: **Angular**

Hardness rating:

Ideal for: **Driveways, patios & paths**



GRAVEL BLENDS



Sovereign

A spectacular mix of angular gravel in a deep green shade mixed with specks of cream, yellow & white angular aggregate which makes for a classic, stylish finish.

Stone shape: **Round/Angular Mix**

Hardness rating:

Ideal for: **Driveways, patios & paths**

Springtime

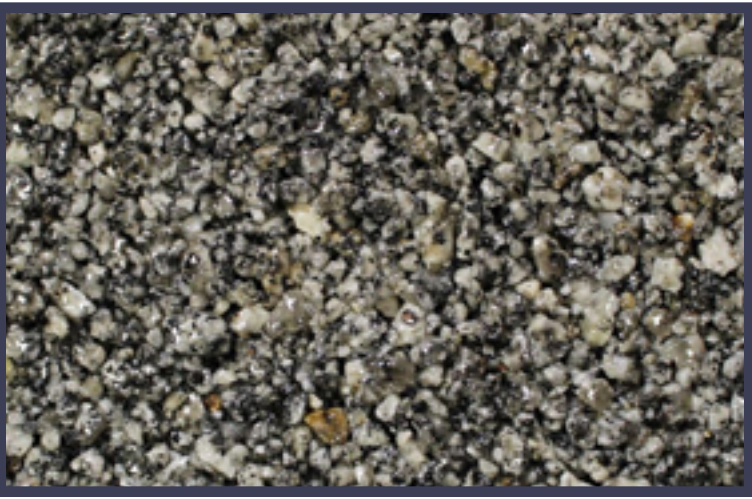
This hugely popular blend is a mix of golden, white, red and brown aggregates produces an attractive, pleasing and traditional colour tone.

Stone shape: **Round/Angular Mix**

Hardness rating:

Ideal for: **Driveways, patios & paths**





Steel Blue

This stunning blend is made up with blue, black and silver toned aggregates and creates a modern, contemporary feel to any surface, particularly against red brick.

Stone shape: **Angular**

Hardness rating: **6**

Ideal for: **Driveways, patios & paths**

Sunlight

This golden beige blend of gravels is bright and vibrant without being loud or obtrusive. This makes Sunlight a fantastic choice for both garden paths and patios.

Stone shape: **Angular**

Hardness rating: **5**

Ideal for: **Driveways, patios & paths**



Sunset

Warm tones of pink, lilac and brown fuse in this mix of crushed angular aggregate which can create huge appeal for all property types and surroundings.

Stone shape: **Angular**

Hardness rating: **6.5**

Ideal for: **Driveways, patios & paths**

Titan Silver

This is truly a best seller. A show-stopping colour which contains both dark grey & light grey stones with white flecks, this is suitable for practically anywhere.

Stone shape: **Angular**

Hardness rating: **6**

Ideal for: **Driveways, patios & paths**





White Gold

A distinguished blend of golden and white stone which consists of varied aggregate size and texture which offers a bright and summery feel.

Stone shape: **Angular**

Hardness rating: **7**

Ideal for: **Driveways, patios & paths**

Winter Sage

Ideal for a contemporary and modern surrounding, Winter Sage offers depth and contrast with its blend of dark greens, rich golds, creams and light grey stones.

Stone shape: **Angular**

Hardness rating: **7**

Ideal for: **Driveways, patios & paths**



GRAVEL BLENDS

PERMAPAVE KIT CONTENTS

Our resin bound gravel kits are expertly designed to offer installers the absolute best in the industry. By pairing our double strength aliphatic resin with superior washed and kiln-dried aggregates, installers can be confident that their job will proceed with the same level of quality, every time.

Each colour blend you have seen is available to order as simply aggregate alone, ready to be mixed with your choice of resin or as a resin bound kit, containing the washed and dried aggregates, our BBA approved double strength resin and kiln-dried sand.

4x 25kg Daltex Aggregates

Washed and kiln-dried to ensure minimal moisture and dust content



1x 6.25kg C52 Sand

Added to the mix to aid resin bonding and further strengthens the surface



1x 7.5kg UVR Resin Kit

Double strength UV stable polyurethane which sets to bond all of the aggregates



INSTALLATION: Surveying

SITE EXAMINATION SURVEY

Site examination prior to an installation is a vital stage of the process as it allows for planning the amount of PermaBound and aggregate required and determining the soundness of the substrate which the surface will be laid upon.

Using the template at the end of this guide helps to provide a structured and simple-to-follow checklist when carrying out the site examination.

SURVEYING/TOOLS

SITE DRAINAGE

Site drainage across the application area should be considered, and where an application area meets a wall, the damp course should be taken into consideration to avoid pooling of water or water being allowed to stand and soak into the surrounding masonry.

Where inadequate or inappropriate drainage is found, this should be rectified before carrying out any further steps.

RECOMMENDED TOOLS & EQUIPMENT

There are a number of tools and equipment which have been tried and tested in the installation of resin bound gravel.

These tools should be kept clean and in good condition.

Any tools showing signs of wear or disrepair should be replaced immediately to protect both the safety of the workforce and the integrity and aesthetics of the surface.



FORCED ACTION MIXER

Arguably the most important tool or piece of equipment in the installation of resin bound gravel. It is essential that gravel and resin binder is mixed in a forced action mixer to ensure the materials are combined both quickly and evenly. A traditional rotating drum mixer should not be used.

We highly recommend the use of a SoRoTo 100L forced action mixer.



PADDLE MIXER

With specialist molecular technology built into the PermaBound resin product, it is vital that the resin products are mixed evenly prior to both combining part-A and part-B of the resin and before being added to the gravel mix to make certain the consistency of the mix.

We highly recommend the use of a SoRoTo 1220W paddle mixer and whisk.



THERMOHYGROMETER

Essential when taking measurements for both air and ground humidity, along with temperature. Due to the sensitive nature of polyurethane resins, accurate measurements of the air and ground temperature and relative humidity can be made with a thermohygrometer. These are available widely from a number of manufacturers in a number of different formats. To assist with logging and accurate record keeping, one with a memory bank function is recommended.



TROWELS & HAND TOOLS

There is a wide range of hand tools and trowels which will likely be used on a resin bound gravel project, including a pool float, bull-nose trowel and a lute (or spazzle). Make sure that the tools are of sufficient quality as a failure of a tool at the vital time can spoil an entire resin bound project.

For hand tools, we highly recommend the use of Ox Tools.



WHEELBARROW

Without a wheelbarrow, installing resin bound gravel would be practically impossible. A wheelbarrow should be large enough to hold a full mix but not so large that it cannot be manoeuvred by a single individual.

It is often recommended to line the inside of the wheelbarrow to assist in removing partially and fully cured resin whenever there is a break in working.

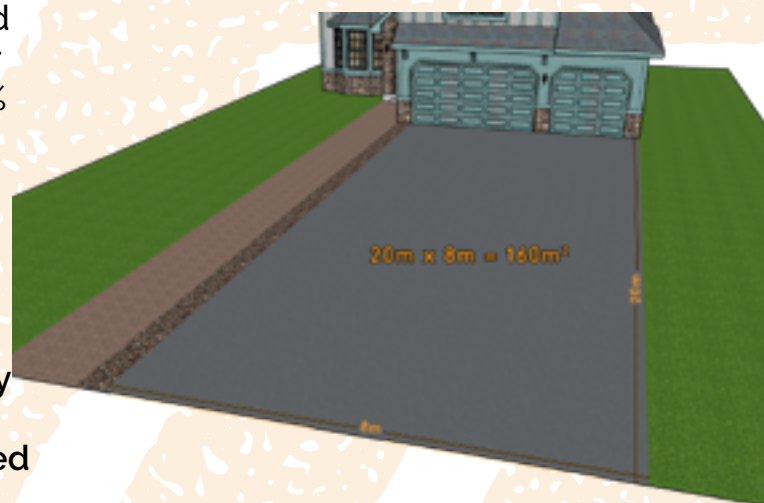
INSTALLATION: Preparation

MEASURING THE PROJECT

Our resin bound gravel kits are supplied based on a coverage of 3.55m^2 when laid at 18mm or 4m^2 when laid at 15mm. Please allow for a 10% tolerance to accommodate for undulations.

To work out the number of required packs, divide the total area by the coverage of your selected kit at the required depth.

So for the example above, the 160m^2 driveway at 18mm depth will require 46 packs as $160 \div 3.55 = 45.07$ and the number should be rounded up to the nearest whole number.

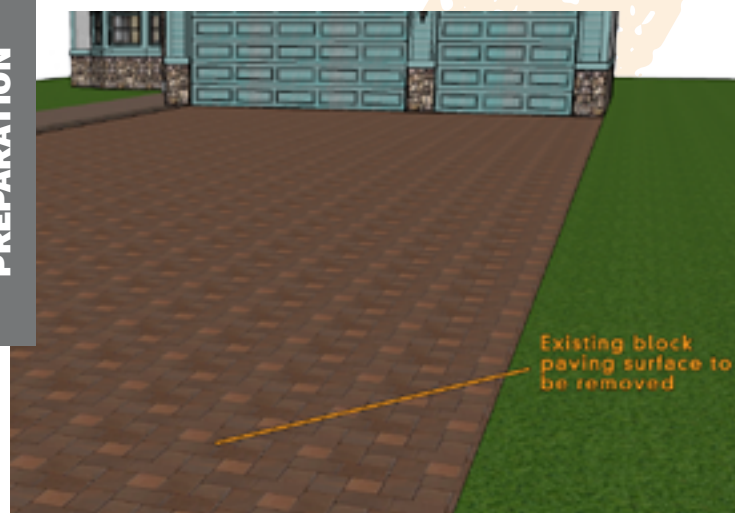


EXISTING SURFACE REMOVAL

The first step towards creating a beautifully finished resin bound surface would be to remove any existing block-paving, concrete or tarmac surface, where unsuitable to be used.

If removing block paving from the area, the blocks may be recycled later by using the bricks as edging around the installation should this be a desirable style of edging.

If there is no existing surface in place, you may skip this process.



EXCAVATING THE AREA

Once the existing surface has been removed, the area should be carefully excavated to a depth which is appropriate for the type of installation carried out.

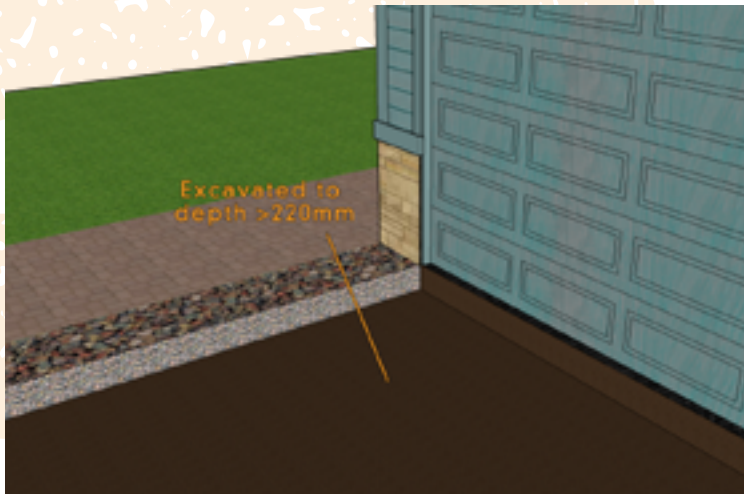
Advice should be sought on the required depth for your particular installation, taking into account the firmness of the ground and the total weight of traffic using the surface.



EXCAVATION

Once the existing surface has been removed, the area should be carefully excavated to a depth which is appropriate for the type of installation carried out.

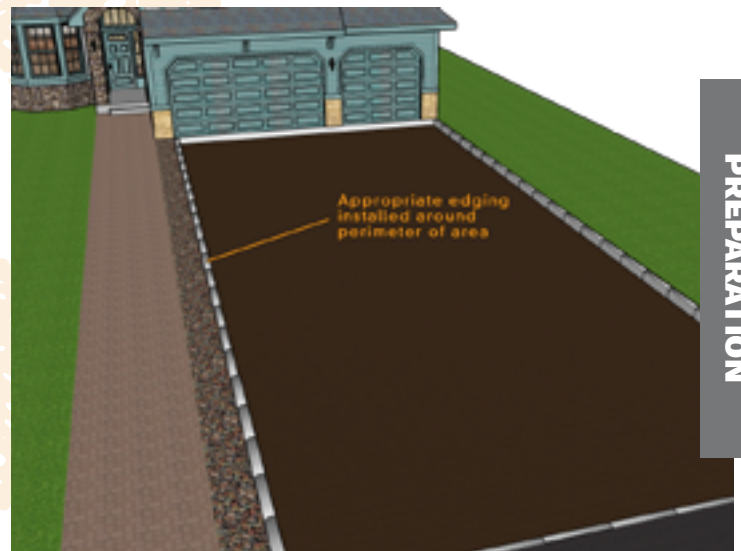
Advice should be sought on the required depth for your particular installation, taking into account the firmness of the ground and the total weight of traffic using the surface.



INSTALL PERIMETER EDGING

Around the edges of the installation, an appropriate load bearing edging should be installed. We recommend products such as pre-cast concrete kerb stones, block-paving bricks or plastic lumber which do not rot over time and provide a solid edge around the installation.

These should be installed according to the relevant manufacturers instructions however if guidance is needed, please contact our helpful team who will happy to advise on other suitable products.

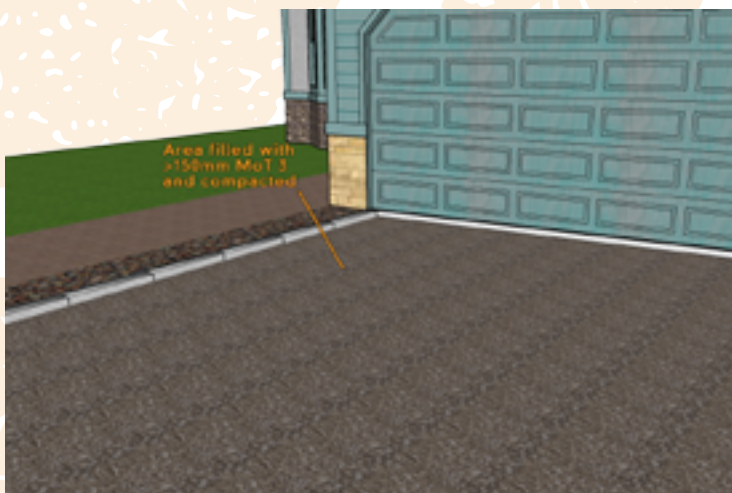


PREPARATION

MOT TYPE 3

Once the perimeter edging has been installed properly and securely, then a base layer of MoT type 3 should be laid at the required depth. The minimum recommended depth of hardcore should be 150mm but this depends on a number of factors including sub-grade stability and intended use for the surface.

This layer of MoT should be compacted using a roller or vibro-plate (whacker) to ensure the base is consolidated. If you need advice regarding the sub-base thickness, please contact us.



INSTALLATION: Surface Checking

CHECKING THE SURFACE

Where an existing concrete or tarmac surface is in place, this should be inspected carefully and thoroughly. These surfaces should be sound and free from cracks.

If there are imperfections or irregularities with the surface, a new surface should be adequately repaired or, ideally, a new surface should be laid.

Asphalt should be at least 30 days old to ensure it is fully cured prior to installation.



The surface must be free from contaminants and water prior to application. PermaBound should be applied at 10-35°C ground temperature and ambient temperature, with 15-18°C being optimal.

The relative humidity should be between 30-85% RH. These humidity and temperature checks should be recorded prior and during application. All substrates to be coated should have a surface temperature of at least 3°C above dew point and rising to reduce condensation risk, as this can severely affect both surface performance and aesthetics.



ASPHALT SURFACE PREPARATION

Asphalt should be at least 30 days old to ensure it is fully cured before an installation. Prior to starting the installation, inspect the surface of the asphalt for any tar residue, if present, clean the surface with a detergent solution, flushed with water and allowed to fully dry.

Once the surface is dry, the installation can proceed.



Priming & Cleaning

PREPARING AND PRIMING CONCRETE

When using concrete as a base for resin bound gravel, it is recommended that primer is used to help aid cohesion and reduce moisture risk.

PermaPrime is a one-part surface primer which can simply be applied with a roller at a rate of around 150 grammes per square metre. It is available to purchase in a 5l tin which will cover up to around 30m², depending on the porosity of the surface itself.



The surface and equipment should be protected from contamination of water, grease and oils. If the primer is to be applied outside, protection from rain should be used. PPE should be worn as per the safety datasheet.

PermaPrime is a solvented product and the use of open flames or high-temperature items should not be used during the application and curing times.

The primer should be applied in temperatures between 10-35°C and 30-85% relative humidity.



PRIMING

CLEANING AGENTS FOR TOOLS & MIXERS

When working with the resin bound aggregate, it is inevitable there will be a build up of unwanted material on trowels, inside the mixer and in wheelbarrows which needs to be cleaned regularly, ideally between each mix.

Suitable release agents are organic solvents such as xylene and white spirit and can be used for both cleaning and to help a smooth trowelling action.

Water should not be used as a release agent as it will cause adverse effects on the final surface aesthetics and integrity.



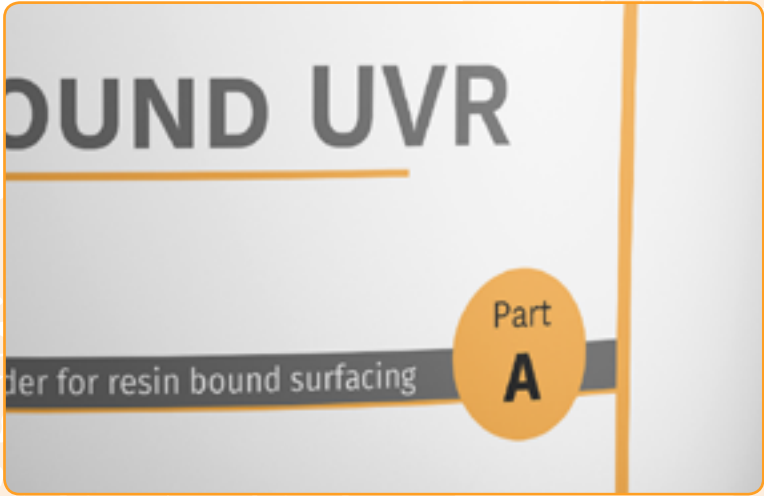
INSTALLATION: Resin Mixing

APPLICATION OF RESIN

PermaBound UVR stone binder is a two-component system which is supplied in two buckets which are labelled as “Part-A” and “Part-B” for clarity.

These separate buckets are accurately weighed to ensure that precisely the correct ratio will be used.

Kits should not be split and should be mixed as one complete mixture. Part mixes should be avoided.



MIXING PART-A & PART-B

Mix the Part-A component steadily with a paddle whisk or drill in the bucket it was supplied in to ensure evenness and consistency.

Once this has been done, decant all of the Part-B component into the Part-A bucket and mix with a paddle whisk or drill for 1-2 minutes until a smooth consistency has been made.

If more than one batch is to be used, care should be taken to use the same batch in one area in case of slight batch-to-batch variation. This also applies to aggregate.

MIXING



**SOROTO 1220W
PADDLE MIXER**

ACCELERATOR

An accelerator should be used with each mix to ensure uniformity of cure. Accelerator must be used for temperatures below 15°C (especially with overnight curing), as this can lead to lengthened cure times and contamination of the surfacing.

See the table alongside for guidance on how much accelerator to add to each mix at what temperature.

Air Temperature (°C)	Accelerator Addition
20+	0.0ml per kit
17.5	5.1ml per kit
15	11.3ml per kit
12.5	19.2ml per kit
10	33.8ml per kit

Laying the Surface



**SOROTO 100L
FORCED ACTION MIXER**

PREMIXING WITH AGGREGATE

PermaBound UVR polyurethane stone binders are a BBA approved system when mixed with Daltex aggregates. If a different supplier of aggregate is used, this will nullify the BBA approval of the system. Aggregates used should be dry (<0.5% moisture) and free from dust.

It is recommended to add the dry aggregate to the mixer while running for around 2-4 minutes to remove as much dust as possible before adding resin.

While the mixer is running with dry aggregate, add the whole contents of the PermaBound UVR mixture.

After 3-4 minutes, the contents of the 6.25kg Chelford 52 sand should be added steadily to the mix. Be careful not to add this too quickly as it can cause uneven distribution of sand, which may form clumps in the mix.

Continue to mix until a total of 5 minutes has elapsed and all gravel is evenly coated. Each mix should be done for the same time, each time.

LAYING THE MIX

The mix should be immediately applied to the surface and compacted with a trowel. The surface temperature should be between 10-35°C (see accelerator guidance). Care should be taken to ensure that the correct, even coverage rate is applied across the application area. This is especially important at high temperatures where the PU can be thinner.

The surface should be installed at a minimum thickness of 3 times the maximum stone grading used (e.g. 2-5mm gravel laid at a minimum of 15mm). Once levelled and compacted, the surface



LAYING

can be smoothed with a trowel coated in a release agent which allows for the top facing stones to be knitted together, giving an even surface finish.

Suitable release agents are organic solvents such as xylene and white spirit. Water must not be used as a release agent as it will cause foaming in the system.

An installation day-sheet should be completed after every day of applying a resin bound mix and site information, weather conditions and batch numbers of aggregate and resin binder used should be recorded

INSTALLATION: Finishing

ANTI-SLIP FINISH (OPTIONAL)

To create a non-slip surface, the top can be scattered with microfine crushed glass particles. Application rates will vary depending on the aggregate used but for an estimation, around 50-100 grammes per square metre of surface.

This crushed glass should be scattered by hand across the surface during the curing period when the resin binder is still tacky to encourage adhesion.



TRAFFICKING/CURING TIME

The surface should be allowed to cure for at least 4 hours. This timeframe will lengthen if the temperature is low.

During the curing period, the surface should be protected from any form of moisture such as condensation, rainfall, hosepipes, leaking or dripping taps.

All efforts should be made to ensure that the surface is not trafficked by pedestrians, pets or vehicles during the curing period.



DETAILING

Expansion joints should be installed and run through the entirety of the PermaBound surface.

Any day joints or expansion joints should be detailed with a suitable edging strip such as an aluminium edging or similar.



Care & Maintenance

GENERAL MAINTENANCE

The resin bound surface should be regularly swept clean, removing leaves, debris and detritus material in order to prevent moss growth. In order to keep the surface looking its best and to prevent staining, any moss or weed growth the surface should be treated using an appropriate herbicide or weed killer. Any ingrained algal growth can be removed using an appropriate paving cleaner.

Please note that staining may occur from tanning if surfaces are not kept clean from leaf debris, twigs, seeds etc.

HGVs should not be permitted to park on or regularly use resin bound surfacing, unless this has been allowed for in the overall construction design. Heavy objects such as skips should not be dragged across the surface.

PERIODIC CLEANING

General cleaning of the surface can be carried out by cold pressure washing up to a maximum of 150 bar rating to remove dirt and grime. The water should be applied using a fan type lance which should be kept at least 200mm above the resin bound surface. Care should be taken however to prevent damage to the surface with excessive water pressure. Pressure washing can also be used to remove tyre marks.

ICE & FROST

Salt can be used on the surface to help eliminate ice and frost but should be washed off after use to protect the surface.

OIL/FUEL CONTAMINATION

Oil stains should be removed as soon as possible by using a mild detergent as required to prevent possible staining and degradation of the surface. Apply a good quality detergent neat to the surface using a stiff brush. Allow to penetrate for 10 minute then pressure wash from the surface.

RESEALING

If a resin bound surface needs to be rejuvenated, this can be done by using a resealing coating which is applied with a roller at 0.5-1.0kg per square metre.

Please be sure to obtain a UV-stable (aliphatic) sealer to protect against discolouration from sunlight, as the surface will yellow over time.

This is particularly noticeable in surfaces where a light coloured gravel is used.

CEMENT CONTAMINATION

If the surface is contaminated with any cement or concrete marks these can be removed using dilute hydrochloric acid or a proprietary cement remover.

In all cases we recommend that a small area is carried out first to confirm suitability

SPILLAGES

It is important that any spillages or contamination are dealt with promptly to prevent permanent staining, marking or physical damage to the surface.

SAND & SOIL

Use a shovel and a brush to remove as much as possible. Pressure washing can be done after to a maximum of 150bar .

MINERAL STAINING

The system is made from natural aggregates. While every step is taken to minimise its presence, naturally occurring iron pyrites can be present. If staining occurs, oxalic acid is an effective method of removing the stain from the surface. The acid solution should be washed off using cold water immediately after use.

BUILD-UP RECOMMENDATIONS

The exact specification of the build-up requirements for your project are dependent on a number of factors: type of project, volume of traffic over the surface and permeability requirements.

Take a look at the following build-up specifications for a number of different scenarios, which details the recommended construction from bottom to top.

URBAN PATHWAY - OCCASIONAL VEHICLES

SURFACE LEVEL	REQUIREMENTS
SURFACING COURSE	3mm aggregate 16mm depth 6mm aggregate 18mm depth 10mm aggregate 24mm depth
BINDER COURSE (WELL COMPACTED, MIN. FALL 1.5%)	50mm depth of AC14 close surf asphalt concrete max 160/220 pen to BS EN 13108-1:2006 (Bituminous Macadam)
GEOTEXTILE	Not Required
SUB-BASE (WELL COMPACTED, MIN. FALL 1.5%)	150 mm depth of non-frost Type 1 to SHW clause 803 or locally available secondary or recycled aggregates complying with the requirements of SHW for sub-bases
IMPERMEABLE MEMBRANE	Not Required
CAPPING LAYER	If plastic or silty sub-grade layer is present (CBR < 2%) then a granular capping may be required
GEOTEXTILE MEMBRANE	Recommended to prevent upward migration of fine soil particles
Sub-Grade	

RURAL PATHWAY - LIGHT PEDESTRIAN USE

SURFACE LEVEL	REQUIREMENTS
SURFACING COURSE	3mm aggregate 12mm depth 6mm aggregate 16mm depth 10mm aggregate 22mm depth
BINDER COURSE (WELL COMPACTED, MIN. FALL 1.5%)	50mm depth of AC14 close surf asphalt concrete max 160/220 pen to BS EN 13108-1:2006 (Bituminous Macadam)
GEOTEXTILE	Not Required
SUB-BASE (WELL COMPACTED, MIN. FALL 1.5%)	100 mm depth of non-frost Type 1 to SHW clause 803 or locally available secondary or recycled aggregates complying with the requirements of SHW for sub-bases
IMPERMEABLE MEMBRANE	Not Required
CAPPING LAYER	Not Required
GEOTEXTILE MEMBRANE	Recommended to prevent upward migration of fine soil particles
Sub-Grade	

TREE PIT - HEAVY PEDESTRIAN USE

SURFACE LEVEL	REQUIREMENTS
SURFACING COURSE	10mm aggregate 40mm depth 50mm collar with loose aggregate around newly planted trees
BINDER COURSE (WELL COMPACTED, MIN. FALL 1.5%)	Not Required
GEOTEXTILE	Not Required
SUB-BASE (WELL COMPACTED, MIN. FALL 1.5%)	150 mm depth well compacted Type 3 to SHW clause 805 or 4/40mm, 4/20mm blinded with 2/6.3mm crushed stone to EN12620. New trees only
IMPERMEABLE MEMBRANE	Not Required
CAPPING LAYER	Not Required
GEOTEXTILE MEMBRANE	Recommended to prevent upward migration of fine soil particles
Sub-Grade	

PRIVATE DRIVEWAY - STRAIGHT

SURFACE LEVEL	REQUIREMENTS
SURFACING COURSE	3mm aggregate 12mm depth 6mm aggregate 16mm depth 10mm aggregate 22mm depth
BINDER COURSE (WELL COMPACTED, MIN. FALL 1.5%)	50mm depth of AC14 close surf asphalt concrete max 100/150 pen to BS EN 13108-1:2006 (Bituminous Macadam)
GEOTEXTILE	Not Required
SUB-BASE (WELL COMPACTED, MIN. FALL 1.5%)	150-225 mm depth of non-frost Type 1 to SHW clause 803 or locally available secondary or recycled aggregates complying with the requirements of SHW for sub-bases
IMPERMEABLE MEMBRANE	Not Required
CAPPING LAYER	Not Required
GEOTEXTILE MEMBRANE	Recommended to prevent upward migration of fine soil particles
Sub-Grade	

Please note:



- Maximum deviation of the binder course should not exceed 3mm under a 1 metre straight edge.
- These specifications are based on normal good practices; they do not absolve the specifier from designing a construction fit for the intended purpose/ traffic/ ground conditions.
- The figures quoted do not constitute a specification. Movement/ construction joints should be extended to the surface of the system, through the PermaBound. Concrete should be primed.

PRIVATE DRIVEWAY - TURNING

SURFACE LEVEL	REQUIREMENTS
SURFACING COURSE	3mm aggregate 16mm depth 6mm aggregate 18mm depth 10mm aggregate 24mm depth
BINDER COURSE (WELL COMPACTED, MIN. FALL 1.5%)	50mm depth of AC14 close surf asphalt concrete max 100/150 pen to BS EN 13108-1:2006 (Bituminous Macadam)
GEOTEXTILE	Not Required
SUB-BASE (WELL COMPACTED, MIN. FALL 1.5%)	150-225 mm depth of non-frost Type 1 to SHW clause 803 or locally available secondary or recycled aggregates complying with the requirements of SHW for sub-bases
IMPERMEABLE MEMBRANE	Not Required
CAPPING LAYER	Not Required
GEOTEXTILE MEMBRANE	Recommended to prevent upward migration of fine soil particles
Sub-Grade	

CAR PARKING - CARS & OCCASIONAL LIGHT DELIVERY VEHICLES

SURFACE LEVEL	REQUIREMENTS
SURFACING COURSE	3mm aggregate 16mm depth 6mm aggregate 18mm depth 10mm aggregate 24mm depth
BINDER COURSE (WELL COMPACTED, MIN. FALL 1.5%)	35mm depth of AC14 close surf asphalt concrete max 100/150 pen to BS EN 13108-1:2006 (Bituminous Macadam)
ROAD BASE (WELL COMPACTED, MIN. FALL 1.5%)	70mm depth of AC32 dense base asphalt concrete max 100/150 pen to BS EN 13108-1:2006 (Bituminous Macadam)
SUB-BASE (WELL COMPACTED, MIN. FALL 1.5%)	200-350 mm depth of non-frost Type 1 to SHW clause 803 or locally available secondary or recycled aggregates complying with the requirements of SHW for sub-bases
IMPERMEABLE MEMBRANE	Not Required
GEOTEXTILE MEMBRANE	Recommended to prevent upward migration of fine soil particles
CAPPING LAYER	If plastic or silty sub-grade layer is present (CBR < 2%) then a granular capping may be required.
Sub-Grade	

Please note:

- Maximum deviation of the binder course should not exceed 3mm under a 1 metre straight edge.
- These specifications are based on normal good practices; they do not absolve the specifier from designing a construction fit for the intended purpose/ traffic/ ground conditions.
- The figures quoted do not constitute a specification. Movement/ construction joints should be extended to the surface of the system, through the PermaBound. Concrete should be primed.



PERMEABLE CAR PARKING (SUDS) - CARS & OCCASIONAL LIGHT DELIVERY VEHICLES

SURFACE LEVEL	REQUIREMENTS
SURFACING COURSE	6mm aggregate 20mm depth 10mm aggregate 26mm depth
BINDER COURSE (WELL COMPACTED, MIN. FALL 1.5%)	70mm depth of AC14 open surf asphalt concrete max 100/150 pen to BS EN 13108-1:2006 (Bituminous Macadam)
ROAD BASE (WELL COMPACTED, MIN. FALL 1.5%)	Alternative Build Up
SUB-BASE (WELL COMPACTED, MIN. FALL 1.5%)	300-500 mm depth well compacted Type 3 to SHW clause 805 or 4/40mm, 4/20mm blinded with 2/6.3mm crushed stone to EN12620
IMPERMEABLE MEMBRANE	To convey water to storage system (optional)
GEOTEXTILE MEMBRANE	Recommended to prevent upward migration of fine soil particles
CAPPING LAYER	If plastic or silty sub-grade layer is present (CBR < 2%) then a granular capping may be required.
Sub-Grade	

PERMEABLE ACCESS ROAD (SUDS)

SURFACE LEVEL	REQUIREMENTS
SURFACING COURSE	6mm aggregate 20mm depth 10mm aggregate 26mm depth
BINDER COURSE (WELL COMPACTED, MIN. FALL 1.5%)	70mm depth of AC14 open surf asphalt concrete max 100/150 pen to BS EN 13108-1:2006 (Bituminous Macadam)
ROAD BASE (WELL COMPACTED, MIN. FALL 1.5%)	Alternative Build Up
SUB-BASE (WELL COMPACTED, MIN. FALL 1.5%)	300-500 mm depth well compacted Type 3 to SHW clause 805 or 4/40mm, 4/20mm blinded with 2/6.3mm crushed stone to EN12620
IMPERMEABLE MEMBRANE	To convey water to storage system (optional)
GEOTEXTILE MEMBRANE	Recommended to prevent upward migration of fine soil particles
CAPPING LAYER	If plastic or silty sub-grade layer is present (CBR < 2%) then a granular capping may be required.
Sub-Grade	

PERMEABLE PRIVATE DRIVE (SUDS)

SURFACE LEVEL	REQUIREMENTS
SURFACING COURSE	6mm aggregate 18mm depth 10mm aggregate 24mm depth
BINDER COURSE (WELL COMPACTED, MIN. FALL 1.5%)	70mm depth of AC14 open surf asphalt concrete max 100/150 pen to BS EN 13108-1:2006 (Bituminous Macadam)
ROAD BASE (WELL COMPACTED, MIN. FALL 1.5%)	Alternative Build Up
SUB-BASE (WELL COMPACTED, MIN. FALL 1.5%)	175 mm depth well compacted Type 3 to SHW clause 805 or 4/40mm, 4/20mm blinded with 2/6.3mm crushed stone to EN12620.
IMPERMEABLE MEMBRANE	To convey water to storage system (optional)
GEOTEXTILE MEMBRANE	Recommended to prevent upward migration of fine soil particles
CAPPING LAYER	If plastic or silty sub-grade layer is present (CBR < 2%) then a granular capping may be required.
Sub-Grade	

PERMEABLE PATH (SUDS)

SURFACE LEVEL	REQUIREMENTS
SURFACING COURSE	6mm aggregate 18mm depth 10mm aggregate 24mm depth
BINDER COURSE (WELL COMPACTED, MIN. FALL 1.5%)	70mm depth of AC14 open surf asphalt concrete max 100/150 pen to BS EN 13108-1:2006 (Bituminous Macadam)
ROAD BASE (WELL COMPACTED, MIN. FALL 1.5%)	Alternative Build Up
SUB-BASE (WELL COMPACTED, MIN. FALL 1.5%)	150 mm depth well compacted Type 3 to SHW clause 805 or 4/40mm, 4/20mm blinded with 2/6.3mm crushed stone to EN12620.
IMPERMEABLE MEMBRANE	To convey water to storage system (optional)
GEOTEXTILE MEMBRANE	Recommended to prevent upward migration of fine soil particles
CAPPING LAYER	If plastic or silty sub-grade layer is present (CBR < 2%) then a granular capping may be required.
Sub-Grade	

INTERNAL FLOORS

SURFACE LEVEL	REQUIREMENTS
SURFACING COURSE	6mm aggregate 20mm depth 10mm aggregate 26mm depth
	Screed (min 25mm bonded, 50mm unbonded)
	Damp proof membrane (unbonded screed)
	Floor slab 100mm GEN1 BS8500

PEDESTRIAN BRIDGE - CONCRETE

SURFACE LEVEL	REQUIREMENTS
SURFACING COURSE	3mm aggregate 12mm depth 6mm aggregate 16mm depth 10mm aggregate 22mm depth
	Concrete Deck to Bridge Specification min 1.5% fall
	Structural Sub-structure

PEDESTRIAN BRIDGE - PLYWOOD

SURFACE LEVEL	REQUIREMENTS
SURFACING COURSE	3mm aggregate 12mm depth 6mm aggregate 16mm depth 10mm aggregate 22mm depth
	Marine Plywood 2 layers of 18mm thick marine ply to BS1088:2033 staggered overlapping joints (min 150mm overlap)
	Structural Metal Tray Structural Sub-structure

Please note:



- Maximum deviation of the binder course should not exceed 3mm under a 1 metre straight edge.
- These specifications are based on normal good practices; they do not absolve the specifier from designing a construction fit for the intended purpose/ traffic/ ground conditions.
- The figures quoted do not constitute a specification. Movement/ construction joints should be extended to the surface of the system, through the PermaBound. Concrete should be primed.



Examination of Site Prior to Installation

SITE ADDRESS	
DATE OF SURVEY	

APPLICATION LENGTH (M)	
APPLICATION WIDTH (M)	
APPLICATION TOTAL AREA (M²)	
IS THE SITE SLOPED?	
SUBSTRATE TO BE LAID ONTO	
ANY SURFACE CRACKING?	
ANY EVIDENCE OF SUB BASE MOVEMENT?	
DRAINAGE CONSIDERATIONS	
AREA REPAIRS REQUIRED	
LIST ANY REQUIRED REPAIRS	

BINDER PRODUCT TO BE USED	PermaBound UVR 7.5kg (PU4844)
APPLICATION SYSTEM REQUIRED	Resin Bound Gravel
COLOUR BLEND TO BE USED	
IS THIS AN APPROVED STONE MIX?	
PRIMER REQUIRED?	
ADDITIONAL SITE OBSERVATIONS	



PERMAPAVE

RESIN BOUND GRAVEL PRODUCTS

PermaBound Application Day Sheet

This sheet is to be completed for each day of installation and each component being laid. This is required as part of the BBA approval.

INITIALS

DATE		
CUSTOMER NAME		
SITE REFERENCE/ADDRESS		
APPLICATION LENGTH (M)		
APPLICATION WIDTH (M)		
APPLICATION AREA (M ²)		

INITIALS

SUB BASE CONSTRUCTION		
IS THE SUB BASE APPROVED?		
ANY REMEDIAL WORK REQUIRED?		
IS DRYING OR CLEANING REQUIRED?		
IS PRIMING REQUIRED?		

INITIALS

APPLICATION TIME	START:	END:	
AIR TEMPERATURE °C	START:	END:	
GROUND TEMPERATURE °C	START:	END:	
RELATIVE HUMIDITY %RH	START:	END:	
DETERMINE DEW POINT °C	START:	END:	

INITIALS

RESIN PRODUCT USED	PermaBound UVR 7.5kg (PU4844)	
BATCH NUMBERS - PART A		
BATCH NUMBERS - PART B		
NUMBER OF KITS USED		
GRAVEL COLOUR BLEND USED		
GRAVEL MANUFACTURER		
MIXING CHECKS PERFORMED		
ACCELERATOR USED?		
RELEASE AGENT USED		
ANTI SLIP USED		

ADDITIONAL INFORMATION:

--