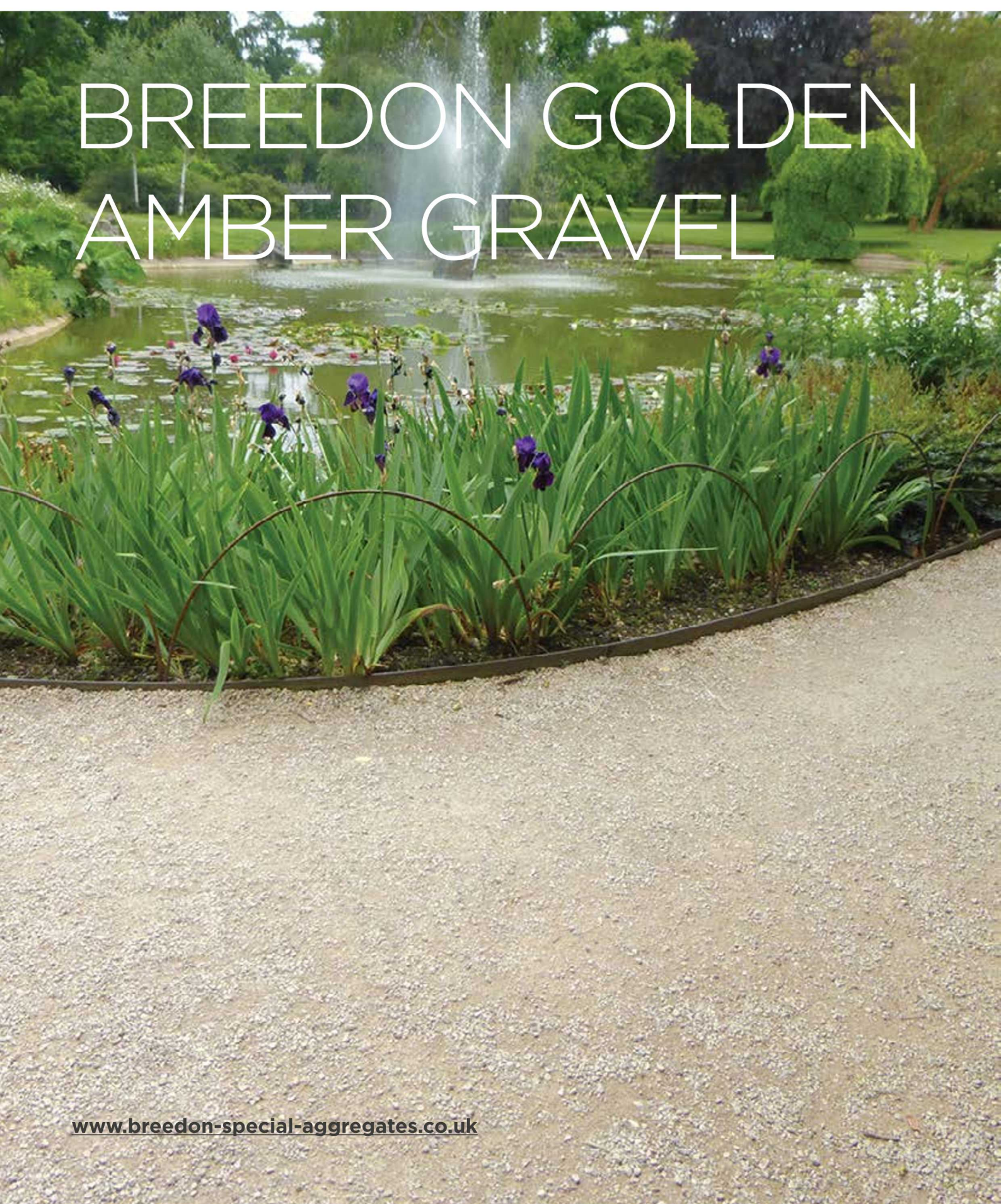




BREEDON GOLDEN AMBER GRAVEL

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ROBUST PERFORMANCE WITH A SOFT NATURAL GOLDEN FINISH, ENHANCING SOME OF BRITAIN'S MOST PRESTIGIOUS PROJECTS.

Breedon Golden Amber Gravel provides exceptional performance, durability and versatility with a soft, natural appearance which compliments both modern day and historical projects, from cottages to castles, traditional or contemporary.

APPLICATIONS

- Footpaths
- Private driveways
- Car parks
- Cycleways
- Bridleways
- Golf courses
- Canal towpaths
- Parks, leisure and recreational
- Colleges
- Historical

LAYING INSTRUCTIONS

The approximate coverage is 8m² per tonne. It is recommended that Breedon Golden Amber Gravel (Breedon Gravel) is laid at a finished compacted thickness of 50mm. Please note that Breedon self-binding gravel is not a free draining product and requires a cross fall or camber to shed water from its surface into adequate drainage.

Breedon Gravel is a natural material quarried from selected limestone and graded approximately 12mm (1/2") to fines; the fines content being naturally occurring marl which acts as the self-setting agent when the material is watered and rolled to fullest compaction in the manner described below.

Breedon Gravel must be laid onto a compacted quarried MOT Type 1 sub-base to clause 803. The depth of which should be of sufficient strength and stability to carry the proposed traffic (we suggest a minimum of 150mm if the ground is good) and also the area concerned should be porous enough to ensure that water is not held directly in or immediately below the Breedon Gravel. If a weed suppressant membrane is required, this must be installed underneath the Type 1 sub-base and not in between the sub-base and Breedon Gravel.

The Type 1 sub-base should be laid and rolled using a roller of suitable weight, i.e. minimum 1.5 tonnes for footways and similar works, and minimum 2.5 tonnes for car parks etc.



By using a heavier roller, this helps achieve maximum compaction with fewer passes, however on smaller areas a pedestrian roller may be used although it is vital that the surface is rolled sufficiently to achieve fullest compaction prior to water rolling. This may take a few more passes over the area. The sub-base should be laid with cross falls or cambers prior to the application of the Breedon Golden Amber surface course.

Prior to use it is recommended that the moisture content of the Breedon Gravel is checked, particularly in prolonged dry conditions or where material has been stocked for a period before use. When squeezed by hand the material should have enough moisture within it that it should stick together. If the material is dry, we advise that a hose with a fine mist setting is sprayed over the Breedon Gravel and the heap is turned over sufficiently to replenish lost moisture to achieve the necessary consistency.

The Breedon Golden Amber Gravel should be spread onto the prepared foundation using a flat board or the back of a rake. Do not use the prongs of a rake as this will segregate the

material. Spread the material out to a depth of approximately 75mm in order to achieve a finished compacted thickness of 50mm.



The surface must then be rolled using a roller of similar type to that used for compacting the foundation with the vibratory action of the roller switched on and the area should be continually rolled until fullest compaction is achieved. It is imperative that Breedon Gravel is laid to a cross fall or camber in order to shed surface water - it must NOT be laid flat. To give some indication, an adequate fall would be 1 in 55 for a pathway with a width of 1 metre approximately and a minimum of 1 in 40 for much wider walkways, courtyards and car parks etc. The same gradient should apply when installing the Type 1 sub-base. Please ensure that adequate drainage is installed in proportion to the surface area being laid. If rainfall is not dispelled rapidly this can lead to an ingress of surface water which will prevent the hardening and binding process of the Breedon Golden Amber Gravel. After this initial laying to cambers and falls it is probable

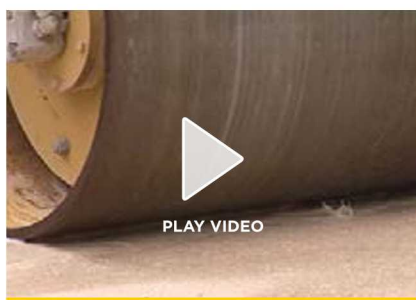




that occasional coarse areas will be evident where segregation of the Breedon Gravel may have occurred. At this point, fines can be sieved from the main heap of material and scattered onto these coarse areas before being re-rolled.

Once a uniform appearance has been achieved the second stage can be undertaken. This is the water rolling of Breedon Gravel for which the vibratory action of the roller must be switched off.

By using a water roller, water is automatically sprayed onto the drum of the roller. The fundamental aim is to have a film of water covering the whole Breedon Gravel surface but in most instances the water tank on the roller is insufficient for dispelling enough water onto the drum and additional water will be required. This is almost always the case in dry warm weather. If the Breedon Gravel is sticking to the roller, this indicates that there is insufficient water being applied. To rectify this, it is advisable that a hose is directed onto the drum of the roller as the material is rolled, saturating the drum. There should be a flood of water pushing forward as the drum rolls the surface. Never direct a hose directly onto the Breedon Golden Amber Gravel itself as this will wash out the necessary fines which are required for the material to bind. The object of water rolling this material is to float enough fines to the top surface of the gravel to obtain a well-bonded finish.



A step-by-step installation video is available to view on our website



It is imperative that sufficient water is added to the material during the water rolling process. Failure to float the fines to the Breedon Golden Amber Gravel surface will result in the re-softening of the material, leading to an unbound finish. Approximately five gallons of water for each tonne of laid material is required to adequately float the marl fines to the Breedon Gravel surface, which will allow the product to bind and harden. As a visual guide when enough water has been applied, the area should have a similar appearance of freshly laid concrete, giving a shiny, glassy finish over the whole surface. Once this has been achieved the binding process can begin.



If there are any lines or grooves in the gravel left by the weight of the roller, a soft wide broom can be used to gently pass over the surface whilst still wet – this will remove any lines and leave a uniform surface finish.

If laying large expanses of Breedon Golden Amber Gravel, it is important that the whole laying process is completed per section. Newly laid areas can be “butted up” next to previously laid material provided that a neat edge is used. When floating the fines up to the surface in the adjoining sections simply pull a soft broom across the surface as previously advised.

It is important that the area should then be allowed to dry out fully



before being opened up to general use. The length of time to allow is dependent on weather conditions, but this can take up to a period of 2 weeks or more. We would also advise that during the drying process that the area is not used. Please note that materials should never be laid in frozen conditions.

Because Breedon Gravel depends entirely on its own binding properties for its stability, it is not practical to lay Breedon Gravel on steep slopes where the angle of fall is steeper than a 1 in 15 gradient. Long continuous fall over sloping ground can be minimised by the formation of deep steps. This will reduce the risk of ruts occurring caused by the action of flowing storm water.

On completion, the Breedon Golden Amber Gravel surface will be very smooth and uniform. Over time, with weathering and trafficking the surface will scarify, giving a light dressing of chippings over the area, whilst maintaining a bound, solid base. Should a lasting smooth appearance be required, the loose chippings can be swept from the surface using a soft broom. However, the surface will naturally scarify with use, therefore the sweeping process would need to be repeated when necessary.



BREEDON GOLDEN AMBER GRAVEL FREQUENTLY ASKED QUESTIONS

Do you supply to the general public or do I need to hold a Credit Account with you?

We supply Account and Non-account customers alike on a Nationwide basis. All products are available both loose tipped and in 800kg bulk bags. Please get in touch to discuss your requirements.



I only require a small amount of material; can I get this directly from you?

We can supply you with a minimum quantity of 800kg in a bulk bag and can offer delivery nationwide.

Is Breedon Golden Amber Gravel free draining?

No. Breedon Golden Amber self-binding gravel is not free draining and therefore requires a cross fall or camber to shed water from its surface into adequate drainage.

How much does 1 tonne cover?

One tonne will cover approximately 8sqm laid at our recommended finished compacted thickness of 50mm. This equates to a bulk bag coverage of 6.4 tonnes approximately per bag. These calculations build in a 10% wastage factor.

What is the density of Breedon Gravel?

2.2 tonnes per compacted cubic metre.

What depth should I lay Breedon Gravel?

Breedon Golden Amber Gravel must be laid to a finished compacted thickness of 50mm as per our laying instructions. If material is laid any thicker, fullest compaction will not be achieved and the fines will not float to the surface when water rolled. If laid thinner than 50mm the wearing course will be compromised, which will affect the durability of the surface.

Can I use a membrane directly under the Breedon Gravel?

No. Breedon Golden Amber Gravel must be laid directly onto the quarried Type 1 sub-base. A membrane or terram may be used underneath the MOT Type 1 if required.

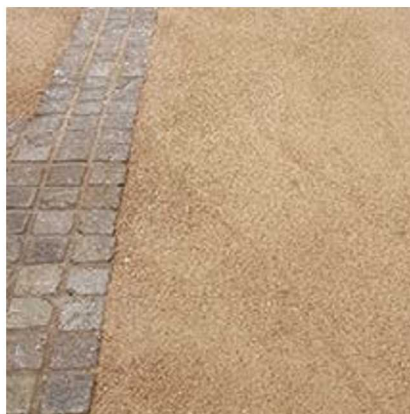
Do you have recommended contractors to lay Breedon Gravel?

Unfortunately, it would be impossible for us to provide a list of 'recommended' contractors as Breedon Gravel travels to each and every part of the UK and we simply could not check the installation countrywide. We do however provide all the instructions necessary for you to carry out the work. We have

written guidelines along with an informative video on our website, which allows you or your contractor to visualise how the product should look and behave at each stage of the installation process. We also have a team of experienced technical advisers based at our Special Aggregates Sales Office who can assist you with any queries you may have or talk you through the process step-by-step.

Can I lay Breedon Gravel on top of existing concrete or asphalt?

No. Breedon Gravel must be laid directly onto a MOT Type 1 sub-base to clause 803. Any existing concrete or asphalt must be broken up and removed. MOT Type 1 sub-base provides a solid sub-structure for the Breedon Gravel and also has voids, which the Breedon Gravel fills, grips and binds on to. Although Breedon Gravel is not free draining and must be laid to falls in order to shed water, throughout spells of prolonged rainfall, some rainwater may ingress through the product and the MOT Type 1 sub-base underneath will allow that water to continue to drain away. Concrete or asphalt would not facilitate this, and water would be held in or below the layer of Breedon Gravel causing it to soften and pothole.



Do I need to use edgings?

Edgings are optional. Concrete, timber, metal or stone edgings can be used and will help achieve fullest compaction; however, edgings should not stand proud of the Breedon Golden Amber Gravel. If this is the case with timber or metal edgings, then holes must be drilled through the edgings at half metre intervals at the level of the surface, or a 'v' can be cut down to the Breedon Golden Amber Gravel level to allow water to flow off the surfaces. If curbs or sets are used as edgings the mortar joint can be left out at half metre intervals, again, this will allow water to escape from the surface.

Can I lay Breedon Gravel in the rain?

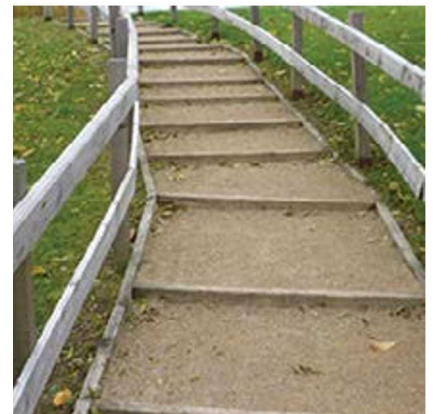
Laying Breedon Gravel in the rain can actually prove beneficial as it helps the water rolling process, provided the rain is not so intense that it could wash away the fines content!

Can I lay Breedon Gravel in frozen conditions?

Breedon Golden Amber Gravel as with all aggregates that contain fines should never be laid in a frozen state. This can lead to shrinkage and movement of materials upon thawing.

Can I lay Breedon Gravel on a slope?

Breedon self-binding products are not recommended to be laid on slopes steeper than a 1 in 15 gradient. This is because the action of storm water flowing across the surface can cause damage to the material and can result in the occurrence of potholes and ruts. Where you have a slope steeper than 1 in 15, the installation of steps at irregular intervals will reduce the risk of ruts occurring and damage to the finished surface.



What is the minimum/maximum gradient to shed surface water?

An adequate gradient for smaller areas (such as footpaths) would be 1 in 50 to allow water to shed from the surface, however, for large surface areas such as car parks or driveways, then a minimum of 1 in 40 gradient would be preferable (25mm drop for every metre of width).

What equipment would I need to lay it?

A flat boarded rake to initially spread the material (you can use the back of a garden rake, but do not use the prongs as this will segregate the coarse components). For footpaths a minimum of a 1 tonne sit-on water roller should be used. For larger areas, a 1.5 tonne sit-on water roller will be required. Access to additional water via a hosepipe or water bowser is necessary and also a soft broom to finish the surface.

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BREEDON GOLDEN AMBER GRAVEL FREQUENTLY ASKED QUESTIONS

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How much water is required?

Approximately 5 gallons per tonne is required. In hot, dry spells more water may be required and in winter slightly less. Please be aware the water which is dispelled from a vibrating roller will be inadequate and additional water will be necessary via a hosepipe directed onto the drum.

How long does it take to set?

The time taken for the surface of the Golden Amber Gravel to set is dependent on the weather conditions at the time of laying. This can vary from between one week in the height of summer to two weeks plus in the wet colder winter months. The area should remain unused in this period. Breedon Gravel should be treated with respect in the first three months whilst gaining strength. After that, the more the area is used the better it will perform.

Can heavy vehicles use the area?

Breedon Golden Amber Gravel has the strength and durability to allow heavy vehicles to drive carefully on the surface, however, be aware that if a vehicle is stationary and the wheels are turned, this could cause scuffing and potholes, particularly when the material is wet. It is advisable to apply a speed limit of 5mph. It is not recommended that Breedon Golden Amber Gravel is used by HGV or agricultural vehicles.



Can I brush the surface?

After the Breedon Golden Amber Gravel has been water rolled there may be some lines from the roller in the material. A soft broom should be used at this point, whilst the material is still wet, to gently run across the surface to remove any roller marks and leave a nice smooth finish.

Breedon Golden Amber Gravel will naturally self-scarify with use but if you choose to remove the surface chippings for visual purposes, a soft broom may be used to do so. However please note the surface will continually scarify so this process may need to be repeated if a smoother appearance is required.

Is Breedon Golden Amber Gravel suitable for use on car parking areas and driveways?

Yes, but please bear in mind that Breedon Golden Amber Gravel is a 100% natural limestone product and will sustain scuff damage to its finished surface if the steering is used on stationary vehicles or if vehicle wheels are spun upon it. This can lead to the occurrence of potholes and therefore, the project will require a higher level of maintenance to keep the Golden Amber Gravel surface in good order. The preferred design for

a driveway or car parking area using Golden Amber Gravel is where the vehicle is driven on to and reversed off without the need to turn the power steering. Where these turning points are required then a hard-paved landscape surface would be more suitable in these particular areas. Please ensure that adequate drainage is installed in proportion to the surface area being laid. If rainfall is not dispelled rapidly this can lead to an ingress of surface water, which will prevent the hardening and binding process of the Breedon Golden Amber Gravel.

Is Breedon Golden Amber Gravel suitable for bridleways?

Yes, but as bridleways are often in woodlands or fields, try to get the sub-base above ground level and then lay the Breedon Gravel on the top to allow water to drain off the surface. If edgings are not used, then the material should be laid to a camber and feathered off at the edges. If this isn't done and the bridleway is lower than the surrounding area, water will flow down onto the bridleway and will pond causing weakness, potholes and potentially a breakdown of the whole surface. Please also note that whilst our self-binding products are perfectly suitable for horses to walk over, they are not strong enough to withstand horses cantering or galloping over their surface.

Is Breedon Gravel suitable for wheelchair use?

Yes. When Breedon Gravel is installed in accordance with our laying instructions, it provides a solid bound base which does not separate or segregate with wheelchair use. The surface does lightly scarify with use leaving a dressing of grit/chippings on the surface. Please note that this may pick up on shoes or wheels so it would be advisable for a hard-paved area prior to entering a building to reduce the migration of dust.



BREEDON GOLDEN AMBER GRAVEL MAINTENANCE PLAN

Breedon Golden Amber Gravel is a natural limestone. It is important that occasional maintenance is carried out as required to ensure its performance and appearance are maintained.

POTHoles

There are two basic reasons why potholes may occur - it is either due to surface damage or where surface water cannot drain away caused by lack of cambers or cross falls.

(Wacker) Repairs should be carried out as soon as a pothole appears. Cut out a neat square around the pothole and remove all material within the square down to the Type 1 sub-base. Fill the area with new Breedon Golden Amber Gravel and compact using a wacker plate or roller in accordance with our laying instructions, following the entire water rolling process.

RE-SURFACING

In the event of resurfacing at a later date, use a rake to scarify the top surface down to an approximate depth of between 35-45mm, whilst taking care to protect the integrity of the type 1 sub-base layer beneath. This may need some effort if the material has been down for a long period of time. Once the surface has been loosened, discard the loose debris. It is advisable that the existing laid Breedon Gravel is sprayed with water using a hose with a fine mist to improve its moisture content. Then a new layer of Breedon Golden Amber Gravel laid on to it, rolled and water rolled in accordance with our laying instructions.

WEED GROWTH

Should any weed growth occur, spray the area with a water-based weed killer and allow the vegetation to die back before lightly sweeping away. Never pull the weeds up through the gravel, this will loosen the bonded surface and allow pooling water to soften the material in these areas.

Areas constantly shaded or only ever lightly used may be susceptible to moss growth. For these areas apply a water-based weed killer or moss remover and cover the affected area when dry (and with no rain expected for a few days). This will take a few days to take effect. Once the moss has died back use a light rake to loosen and sweep away. Do take care not to put too much pressure on the surface and disturb the Breedon Gravel itself.



DRAINAGE

Always ensure that drains and gullies are kept free of debris to allow surface water to drain away easily.

WINTER MAINTENANCE

For best results, ensure that any leaves are removed from the surface by using a blower or a vacuum. Alternatively, a very soft broom can be used.

SURFACE APPEARANCE

Breedon Golden Amber Gravel scarifies with use to leave a dressing of chippings over its surface, however as a matter of personal choice, they can be swept away using a very soft broom to leave a smoother finish. This process would however need to be repeated as the surface will naturally scarify with use. Please also be advised that this will also affect the wearing course and longevity of the product.

HEALTH AND SAFETY

Product

Crushed limestone aggregate.

Application

Crushed limestone is used as a basic construction material and as a component in other materials such as concrete, mortar, asphalt and coated roadstone.

Precautions

The products are not considered hazardous. Inhalation of any dust should be avoided. Dust masks to BS 2091 Type B, or their equivalent, should be worn in enclosed spaces where handling or further processing is taking place and where adequate ventilation is not provided.

Physical and chemical characteristics

This limestone consists primarily of calcium and magnesium carbonates.

Protective clothing

No protective clothing is required.

PH value

The pH value of Breedon limestone is 8.5.

Transportation, storage and disposal

The carriage of aggregates is not subject to hazardous substance conveyance regulations and vehicle labelling is not required. Aggregates are inert but should be disposed of in accordance with local legal requirements.

When ordering your self-binding limestone please specifically ask for "**Breedon Golden Amber Gravel**" as some of our market competitors use the term "Golden Amber Gravel" to promote their alternative products which are not produced by Breedon Trading Ltd.

TO DISCUSS YOUR INDIVIDUAL REQUIREMENTS PLEASE CONTACT:

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