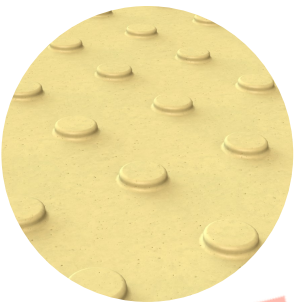
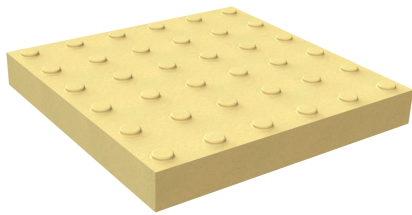


Tactile Concrete Paving



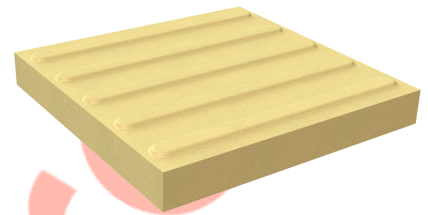
Tactile Concrete Paving



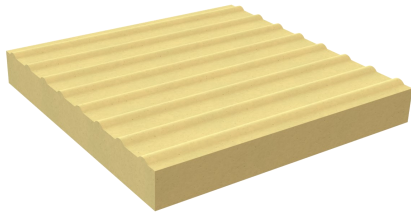
BLISTER



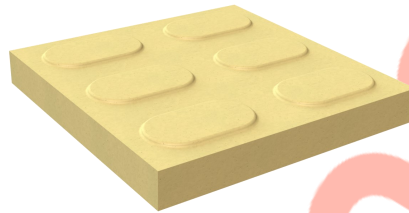
CYCLEWAY



GUIDANCE

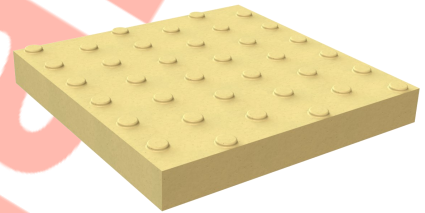


HAZARD WARNING CORDUROY



PLATFORM EDGE WARNING

LOZENGE



PLATFORM EDGE WARNING

OFFSET BLISTER

Note. Images shown are only representative

Nominal Size (mm)	450x450	450x450	400x400	400x400	400x400	400x400	400x400	400x400	400x400
Working Size (mm)	448x448	448x448	398x398	398x398	398x398	398x398	398x398	398x398	398x398
Nominal Thickness (mm)	50	70	50	65	50	50	50	50	50
Weight (kg)	24.70	34.00	18.80	24.70	18.80	18.80	18.80	18.80	18.80
Units/m ²	4.94	4.94	6.25	6.25	6.25	6.25	6.25	6.25	6.25
Units/Pack	34	28	34	30	34	24	34	34	34
m ² /Pack	6.89	5.67	5.44	4.80	5.44	3.84	5.44	5.44	5.44
Pack Weight (T)	0.84	0.95	0.64	0.74	0.64	0.45	0.64	0.64	0.64
Shade- In Stock	BU, RE	-	BU, CH, GY, RE	BU, CH, GY, RE	BU, CH, GY	BU	BU	BU	BU, GY
Shade - Made To Order	-	BU, RE	-	-	-	-	-	-	-
Finish	Blister	Blister	Blister	Blister	Hazard Warning Corduroy	Platform Edge Warning Offset Blister	Platform Edge Warning Lozenge	Guidance	Cycleway
Edge Detail	Square	Square	Square	Square	Square	Square	Square	Square	Square



Buff

British Standard
Grey

Red



Charcoal

DESIGN CONSIDERATIONS

DESIGN

Laying design can make a significant contribution to the overall appearance of the area to be paved. The options for distinctive end results, whether from patterning of an individual product, or via combinations of products and shades are almost infinite. This section is, therefore, necessarily confined to basic principles only, from which designs to suit specific projects may be individually developed.

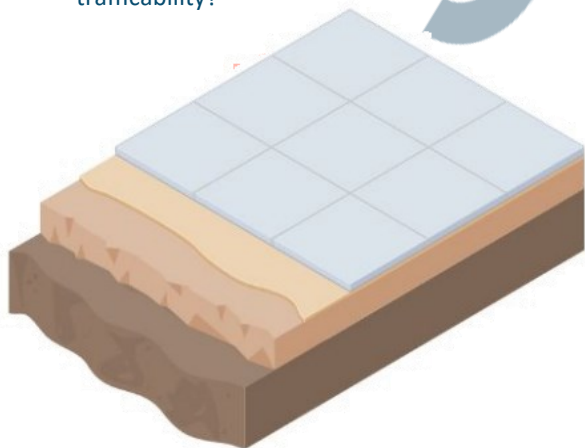
PRELIMINARY CHECKS

Ensuring that the specified paving system is suitable for its intended purpose is a fundamental requirement. Before deciding on laying design, it is advisable to validate product selection against anticipated traffic, loadings etc. The following checklist may, therefore, be helpful:

- Is the paving area designated for pedestrian use only –or is any vehicular trafficking likely?

Will any vehicular trafficking:

- Be occasional overrun only, or regular?
- Be limited to cars only?
- Include light commercial vehicles?
- Emergency vehicular overrun?
- Extend to HGV / heavy duty loading?
- Accordingly, under normal service conditions, does the selected paving meet the necessary criteria in terms of strength, thickness and declared trafficability?



GENERAL PRINCIPLES

Design and overall looks may be influenced by choices within one or more of the following:

COLOUR CONTRASTS

Differing shades of the same, or a complementary paving product, may similarly be used for zoning purposes or simply to add to the aesthetic appeal of the end-result.

EDGE RESTRAINTS/DETAILING

All paved areas require strong and stable edge restraints. Wherever selected patterning results in an irregular perimeter, edge detailing for the paved area needs to be pre-planned to ensure neat finishing against kerbing, walling or other adjoining areas.

LAYING PATTERNS

Due to the surface profile, tactile paving can only be laid in a chequerboard laying pattern.

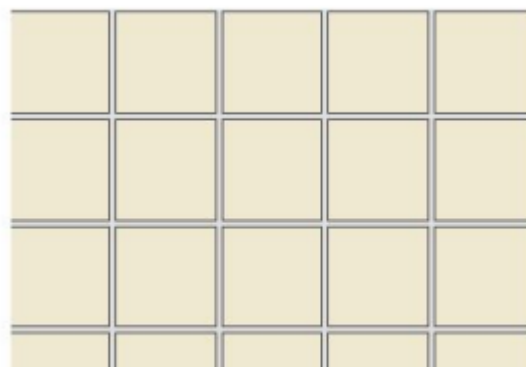


Fig. Chequerboard

APPLICATIONS

British Standard flag paving is suitable for high volume pedestrian areas, town centres, shopping precincts and footways as well as occasional car or mechanical sweeper overrun, footways with cars and HGV vehicle or service areas. Refer to the relevant sections of BS 7533 for correct design and applications. Refer to Technical Department for advice on your given application – email sales@studmarc.com

DESIGN STANDARDS

All installations should be detailed and constructed in accordance with the relevant British Standard. This is BS 7533 for installation. For structural design, please refer to either BS 7533 or the Interpave Design Guide.

PREPARATION (ALL FLAGS)

Sub-Grade

Clear top soil: complete sub-grade drainage. Excavate and backfill soft spots: compact well throughout. Protect sub-grade from adverse weather. Lay geotextile fabric or capping layer (if specified/required).

Sub-base

Prepare in accordance with the Specification for Highway Works. Lay and compact in layers to a close textured finish. Open textured sub-bases may require a binding layer of finer material.

General principles

Lay paving immediately on prepared bedding, do not leave bedding exposed to weather or overnight. To avoid bedding layer damage and creep, lay paving units up slopes and/or away from edge restraints. Stand on previously laid paving when placing next row.

LAYING

Select site category

1. Heavy duty applications of more than 60 commercial vehicles per day (over 1.5T unladen)
2. Medium duty applications of 60 or less commercial vehicles
3. Medium-light duty applications – 5 or less commercial vehicles per day
4. Light duty applications – no commercial vehicles

Select laying method

1. Flags laid rigidly for all categories
2. Flags laid rigidly for category 4 only
3. Flags laid flexibly for categories 2, 3, 4

LAYING METHOD

1. Flags laid rigidly for all categories

For this category, a hydraulically bound road base should be used and should be designed in accordance with the relevant standard (see above). The back of the flag and top surface of the road base should be primed to ensure a good bond. The laying course material should be a modified mortar as specified in BS 7533 and spread to give a depth of 30mm after compaction. Cement sand mortars are not suitable for use in this method. The flags should be laid with a 6-10mm joint. A minimum of 12 hours after laying, the flags should be thoroughly wetted and the jointing material, as specified in BS 7533 in slurry form, is spread over the entire surface. The material should be moved towards the open joints. Once the joints are full, the flags should be wetted again and a squeegee used to remove excess mortar. The area should not be open to traffic until the bed and joints have reached sufficient strength. Further guidance on the installation and mixing procedure should be sought from the mortar supplier.

2. Flags laid rigidly for category 4 only

The laying course should consist of a workable mix of 1:3 cement sand mortar, thickness between 15 and 30mm after compaction. The flags should be laid with a 6-10mm joint. These should be filled within 2-3mm of the surface of the flag with a 1:4 cement sand mortar and pointed as work proceeds. The flags should be compacted down using a paving maul.

3. Flags laid flexibly for categories 2,3,4

The laying course should be fine aggregate to BS EN 12620 GF 85 0/4 (MP). The thickness of the laying course after compaction should be 30mm.

This can be done by either

1. Screeding the material to give the required depth after compaction. (A small trial area may be required to determine the amount of surcharge). The top 10mm should then be loosened with a rake.
2. 30mm of laying course material should be screeded out and compacted. Then a further 10mm of loose material screeded out on top. The flags should be laid with a 2-5mm joint that is filled with Kiln Dried Silica sand to BS EN 12620 GF 85 0/4 (MP).

Note: The gradings for the laying course material and joint filling material may be found in BS 7533 The flags should be compacted using a vibrating plate compactor fitted with a neoprene sole plate to protect some flags with special finishes in accordance with BS 7533. Top up the joints with Kiln Dried Silica sand as necessary and during early life. After laying light coloured paving on site, care should be taken to protect from dirt and detritus while the remaining construction works are completed.

GENERAL GUIDELINES FOR THE REMOVAL OF STAINS AND GROWTHS

These notes are intended for general guidance and are not intended to be exhaustive.

Some of the cleaning methods described involve the use of chemicals which could be dangerous if not used correctly. It is important that any safety warnings issued by the chemical suppliers should be read carefully and strictly adhered to.

In general the following precautions should be taken:

- When using chemicals, protective clothing such as gloves, goggles, boots and overalls should be worn. Adequate ventilation is required in confined spaces when using chemicals.
- When using flammable materials; cigarettes, naked flames and other sources of ignition should be carefully controlled. When diluting acids ALWAYS, add acid to water and not water to acid. Any clothing, which is contaminated with chemicals should be disposed of safely.
- When using any chemicals care must be taken not to damage, contaminate or stain any adjoining material. Care must be taken to protect personnel operating in the area of the cleaning from any injury or hazard created by the cleaning.
- It is particularly important with all cleaning methods that trials should be carried out on a small, preferably inconspicuous area, to determine the effect of the chemicals before treating a large area.

GENERAL CLEANING

Light stains can often be removed without markedly affecting the texture and appearance of the surface. Proprietary cleaning materials may be used in accordance with the manufacturer's instructions.

EFFLORESCENCE

Efflorescence is a temporary, naturally occurring phenomenon that occurs to a varying extent on all items containing cementitious binders.

Mortar is particularly prone to efflorescence and this can contaminate other products. It is formed by soluble salts from the cement migrating to the surface where they react with the atmosphere to produce the white powder (Calcium Carbonate) known as efflorescence.

Individual crystals are very small and are not firmly fixed to the surface. The smallest of the crystals linked with their optical properties causes them to become invisible when wet. As they dry out they become visible and are unchanged. Products are most susceptible to efflorescence under damp conditions as this aids the movement of the soluble salts.

Efflorescence in no way affects the structural integrity of the products.

TREATMENT

Efflorescence will in time disappear as a result of normal weathering; the length of time depends on many factors such as rainfall, atmospheric pollution etc. Efflorescence can, however, be removed chemically by using proprietary cleaners.

Please contact our Technical Department for information.

GENERAL DIRT AND DETRITUS

To remove general dirt and detritus, scrubbing with soap and water is normally sufficient. This can be done either by hand or by using an industrial cleaner. If a power hose is used then care must be taken to avoid the removal of the jointing material (sand or mortar). Ensure soap has been thoroughly washed from the surface on completion of the cleaning and the resulting run-off is carefully channelled to either drainage or containers where it can be safely disposed of. Please contact our Technical Department for more information.

ADDITIONAL INFORMATION

We are constantly striving to improve our product range and therefore we advise that you always check that you have the latest product information available either online or request from our Sales Office and/or stockist.

The photographs and product swatches in our literature are only representative and we would advise that you request samples of the product and lay a sample area for approval (1.2m x 1.2m). Some samples may be chargeable, for example made to order items.

Concrete continues to cure for months after manufacturing which may affect the porosity of an individual product resulting in some products appearing "damp". This does not affect the performance of the product and will disappear over time as the product fully cures. On occasion products can be affected by contaminated aggregates, Lignite or Iron Pyrites which may result in discolouration of the surface of an individual product. This will not affect the performance of the product.

We manufacture our products in batches and while great care is taken to control shade variation between production batches we cannot guarantee colour consistency between batches and we would advise that you take this into consideration. We produce some products that are textured and the process can sometimes result in some variation in texture which will not affect the product performance.

Products should be thoroughly inspected upon delivery and in the unlikely event that you are not totally satisfied with the product you should inform our Sales Office immediately. Please quote the quantities of product affected, and the batch details from the label on the packaging. Product(s) deemed not in compliance with the relevant manufacturing standards or customer expectations must result in a formal complaint being raised with the Sales Office or representative within 48 hours of delivery and product should not be installed. Any uplift and relaying costs will be the responsibility of the installer should the defect have been apparent before installation.

Products should be installed in accordance with the relevant section of BS 7533, which covers the correct installation process for Paving, Kerbs and Setts.

Product dimensions are subject to tolerances as specified in the current British and European standards. These need to be taken into account when planning your installation process as laying times and/or materials required may vary.

British Standard Flag, Kerb and Edgings and our 'Natural' and 'Grey' colours are 'NON' Pigmented and the aggregates and cement determine the final colour of the products. Aggregates and cement may vary in shade which will affect the final product colour.

All of our Made To Order (MTO) products require a signed agreement to be received by us before we will send an order acknowledgement. All MTO products will be invoiced. We therefore recommend that care is taken when measuring/ordering and that an allowance has been made for wastage and snagging, as the full ordered quantity will be invoiced and any additional small production runs will be charged for accordingly.

The use of proprietary spacers to create a joint gap in accordance with BS 7533 is acceptable. Product swatches contained in our literature are for colour representation purposes only.

HEALTH AND SAFETY

Due to the nature of our products we always recommend suitable lifting equipment be used. We recommend the use of lifting equipment such as a vacuum lift. Always wear gloves and safety footwear when handling the product. Always wear safety goggles, safety footwear, gloves, ear protection and appropriate regulatory protection when using cutting equipment. Ensure the products are on level ground and retained in some way before removing any packaging. Always handle with care as breakage and chipping may result from mishandling.

NON-PRIMARY MATERIAL

Catagory	Product Name	Non-Primary Material (not less than %)
Concrete Paving	British Standard Paving	6.00%

SUSTAINABILITY AND LOCAL SOURCING

RECYCLABLE: 100% of the product can be recycled thus reducing the amount of material that is sent to landfill.

MANUFACTURING LOCATION: Produced in the UK, under strict environmental and social legislation.

KEY AGGREGATE AND RECYCLED CONTENT

British Standard tactile flag paving is manufactured using local aggregates. It is made in a wet pressed process in special moulds incorporating pre-formed profiles.

Products should be installed in accordance with the relevant section of BS 7533, which covers the correct installation process for Paving, Kerbs and Setts

Product dimensions are subject to tolerances as specified in the current British and European standards. These need to be taken into account when planning your installation process as laying times and/or materials required may vary.

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