



Formpave
Inspirational Driveways
and Patios

Let Hanson Formpave's products transform your driveway and patio

- 1 Aquaflow permeable paving system** Aquapave and Aquasett for driveways and paths. An environmentally productive way to prevent run-off and flooding by collecting and cleaning storm water which complies with the recent driveway legislation.
- 4 Avenida combined** A cross-over range which can be used on both conventional and permeable (SUDS) applications to provide a seamless solution to driveways, paths and patio areas. Avenida combined is manufactured in an olden style, in three module sizes.
- 8 Chartres range** classic modular paving • cobbles • boulevard paving. Inspired by the beautiful medieval city of Chartres in France. A stylish and distinctive paving range. Antique style setts for use where an 'Olde Worlde' appearance is a major consideration.
- 14 EcoGranite** cobbles • setts • paving. Put an environmental alternative on your driveway. Hanson Formpave EcoGranite contains up to 77% recycled materials. Available in colours that replicate the stunning natural granites of Cornwall and Royal Deeside in Scotland.
- 18 Royal Forest and Home-plus** rectangular block paving. Available in 8 distinctive colours and various surface finishes. Suitable for many applications, from driveways to hard-standings.
- 20 Aquaflow ThermaPave renewable energy system** The system can provide up to 50% reduction on energy costs and CO₂ emissions. Aquaflow ThermaPave embraces two technologies, permeable paving and geothermal heating to produce a fully warranted renewable energy solution.
- 22 Water Harvesting system** Aquaflow paving in conjunction with a water harvesting drainage system collects water from all impermeable surfaces, roofs, paths and especially the driveway for non-potable use such as irrigation, car washing and toilet flushing.
- 24 Kerbs and accessories** Forest edging • standard kerb and step system • bull-nose kerb system. Available in colours and finishes to match the Hanson Formpave ranges.

Joint filling sand • Aquaflow surface dressing grit • Colour and finish variations • Advisory service • Samples • Maintenance and Care • Product development • Adverse weather • High skid resistance paving BS Technical specification • Colour Reproduction *back cover*
For more information including a full list of stockists please visit: www.hanson.com/uk/formpave

Aquaflow legislation & guidance
Summary of the legislation that encourages Sustainable Urban Drainage Systems (SUDS) and Permeable Paving Systems (PPS)

Draft legislation published during 2009 seeks to make sustainable drainage systems (SUDS) effectively mandatory by 2011. As the most versatile SUDS technique, with important water attenuation and pollution control characteristics, use of concrete block permeable paving (CBPP) is set to become the norm for new developments.

CBPP is a unique sustainable drainage technology which is being championed by Interpave. Its block paving manufacturer members maintain the highest standards of quality control, product innovation and sustainability and are signatories to the British Precast Concrete Federation Sustainability Charter. Interpave has the expertise, international contacts and resources to develop technologies such as permeable paving to the benefit of the building industry as a whole. Interpave works closely with other organisations such as Defra, Environment Agency, the Scottish Environmental Protection Agency, CIRIA and SUDSnet in driving forward sustainable drainage solutions. Its manufacturing members continue to develop innovative concrete block permeable paving products and systems.

The design of drainage systems, including attenuation and cleansing of surface water is included in current Building Regulations and Building Standards for England and Wales, and Scotland respectively.

In 2008 the English law changed to promote the use of permeable paving on front driveways. Any retrofit impermeable driveway on a permeable surface such as lawns will require planning permission, be subject to a fee and delay when compared with the use of permeable paving which can be installed freely.

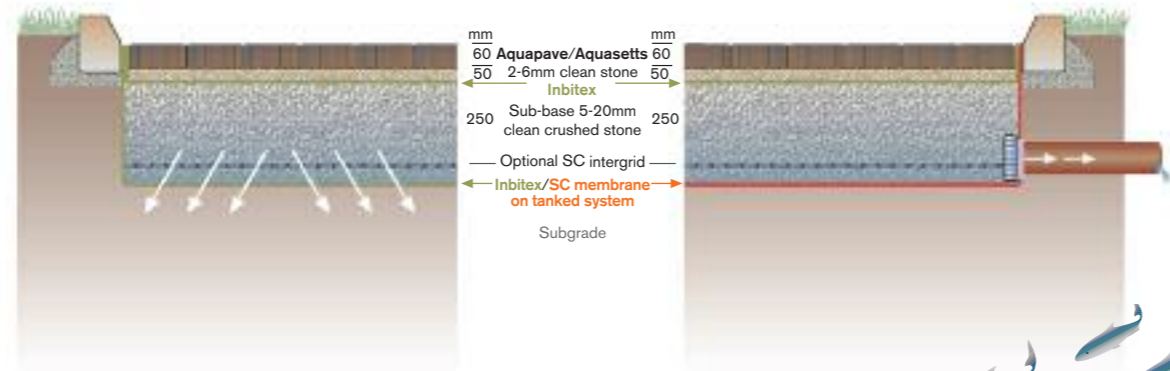


Aquaflow permeable paving system with Aquasett combined blocks



Aquaflow permeable paving system driveways • paths • patios

The Aquaflow permeable paving system enables you to turn your front lawn into a hard standing without affecting the environment. In fact you are replicating nature, perhaps in a more efficient manner. The system can link all impermeable surfaces; roofs, driveways and paths. The permeable surface drains into the voided sub-base where the water is stored, filtered and cleaned. The rainfall (run-off) is stored within this 'reservoir' sub-base. There are three options • Direct infiltration into the ground • Discharge into stormwater drains • Water harvesting. See pages 22-23.

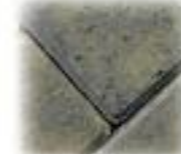
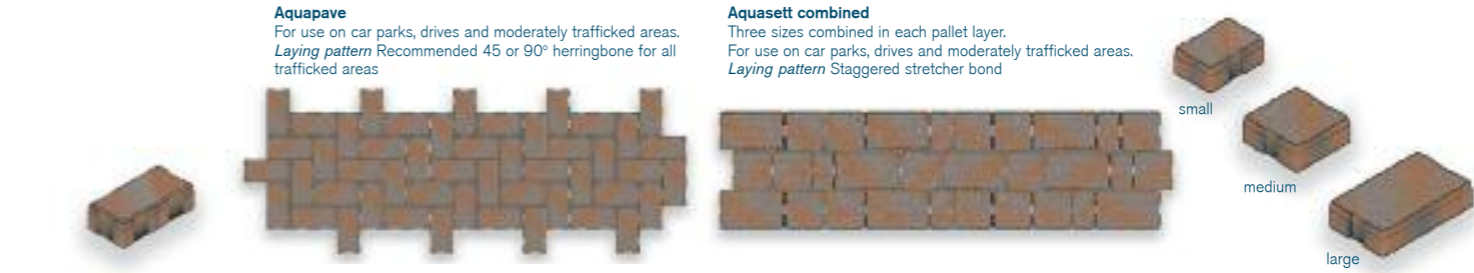


Direct infiltration into the ground
Schematic infiltration system

Discharge into stormwater drains
Schematic tanked system

Installation

The Aquaflow system requires more expertise than standard concrete block paving. The sub-base design needs to be strictly adhered to. We would recommend that if in doubt you consult us at Hanson Formpave for further information. 01594 836999



Standard finish
Aquapave



Olden finish
Aquasett



Textured finish
Aquasett
special order



There are two types of Aquaflow block; the Aquapave and Aquasett combined. Both are available in a 60mm thickness for domestic and light use, with a variety of colours and finishes.

| per pack | thickness |
|--------------------------|--------------------|
| Aquapave | 60mm |
| square metres | 8.48m ² |
| number | |
| 100x200 | 424 |
| weight tonnes | 1.10 |
| square metres | 8.48m ² |
| Aquasett combined | 60mm |
| square metres | 11.2 |
| number | |
| small blocks | |
| 100x150mm | 98 |
| medium blocks | |
| 150x150mm | 196 |
| large blocks | |
| 250x150mm | 140 |
| weight tonnes | 1.47 |





Avenida combined A cross-over range which can be used on both conventional and permeable (SUDS) applications to provide a seamless solution to driveways, paths and patio areas, which will comply with the recent driveway legislation where necessary. Avenida combined is manufactured in an olden style, with a 50mm thickness in three module sizes and three colours; Traditional, Pennant and Vendage. Special colours are available to order.



Avenida combined blocks are designed for both standard and permeable (SUDS) paving applications.





Laying pattern Staggered stretcher bond

Avenida combined



Avenida combined Three sizes combined in each pallet layer. For use on driveways, paths and patio areas and as a permeable (SUDS) solution to comply with the recent driveways legislation.

| per pack | thickness |
|---------------------------------|-------------|
| Avenida combined | 50mm |
| square metres | 11.2 |
| number small blocks 100 x 150mm | 98 |
| medium blocks 150 x 150mm | 196 |
| large blocks 250 x 150mm | 140 |
| weight tonnes | 1.23 |

Spacing nibs are incorporated within the block dimensions



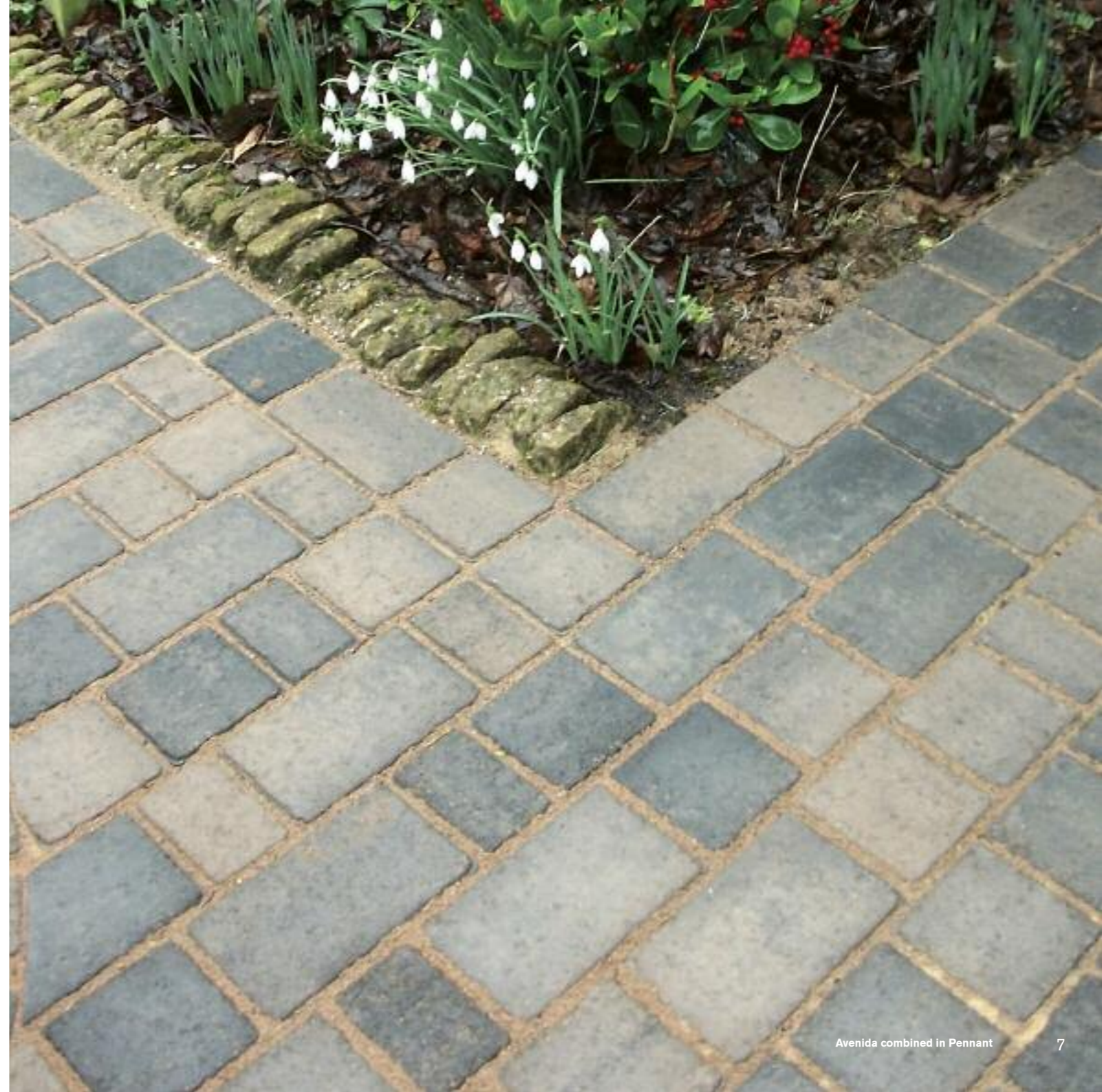
Avenida edging a compatible edge restraint 100x200x250mm



Avenida Traditional in small

Avenida Pennant in medium

Avenida Vendage in large



Avenida combined in Pennant



Chartres classic combined in Traditional with an olden finish



Chartres range classic modular combined The concept of Chartres modular paving was inspired by the beautiful medieval city of Chartres in northern France. Chartres modular combined provides a stylish alternative to the usual driveway format. Chartres is available in five beautiful colours; Traditional, Vendage, Pennant, Purbeck and Cotswold.

- 1 Chartres classic combined in Pennant
 - 2 Chartres classic combined in Vendage
 - 3 Chartres classic combined in Traditional
 - 4 Chartres classic starter circle in Traditional
- Chartres classic combined is available with an olden finish*

Traditional

Vendage

Pennant

Purbeck

Cotswold

Olden finish

Textured finish special order

**Chartres range
classic modular
combined paving**

| | thickness | |
|-------------------------------|-----------|-------------|
| | 50mm | 60mm |
| per pack | | |
| Chartres combined | | |
| square metres | 11.2 | 11.2 |
| number small blocks 100x150mm | 98 | 98 |
| medium blocks 150x150mm | 196 | 196 |
| large blocks 250x150mm | 140 | 140 |
| weight tonnes | 1.23 | 1.47 |
| Chartres large | | 60mm |
| square metres | — | 10.50 |
| number | — | 280 |
| weight tonnes | — | 1.38 |

Chartres classic modular combined is available with a 50 or 60mm thickness. Each layer within the pack contains a mix of 3 module sizes; small, medium and large enabling the specifier to create a variety of laying patterns from strict coursing in one or more sizes to a totally random pattern.

Chartres edging and starter circle have been specially designed to complement the range and are available in the same colours with an olden finish.



- 1 Chartres classic combined in Traditional
 - 2 Chartres classic combined in Traditional
 - 3 Chartres classic starter circle with classic combined in Traditional
 - 4 Chartres classic combined in Traditional
- Chartres classic combined is available with an olden finish*



Chartres starter circle
600mm diameter, 60mm thickness, see page 24



Chartres combined paving
large, medium and small



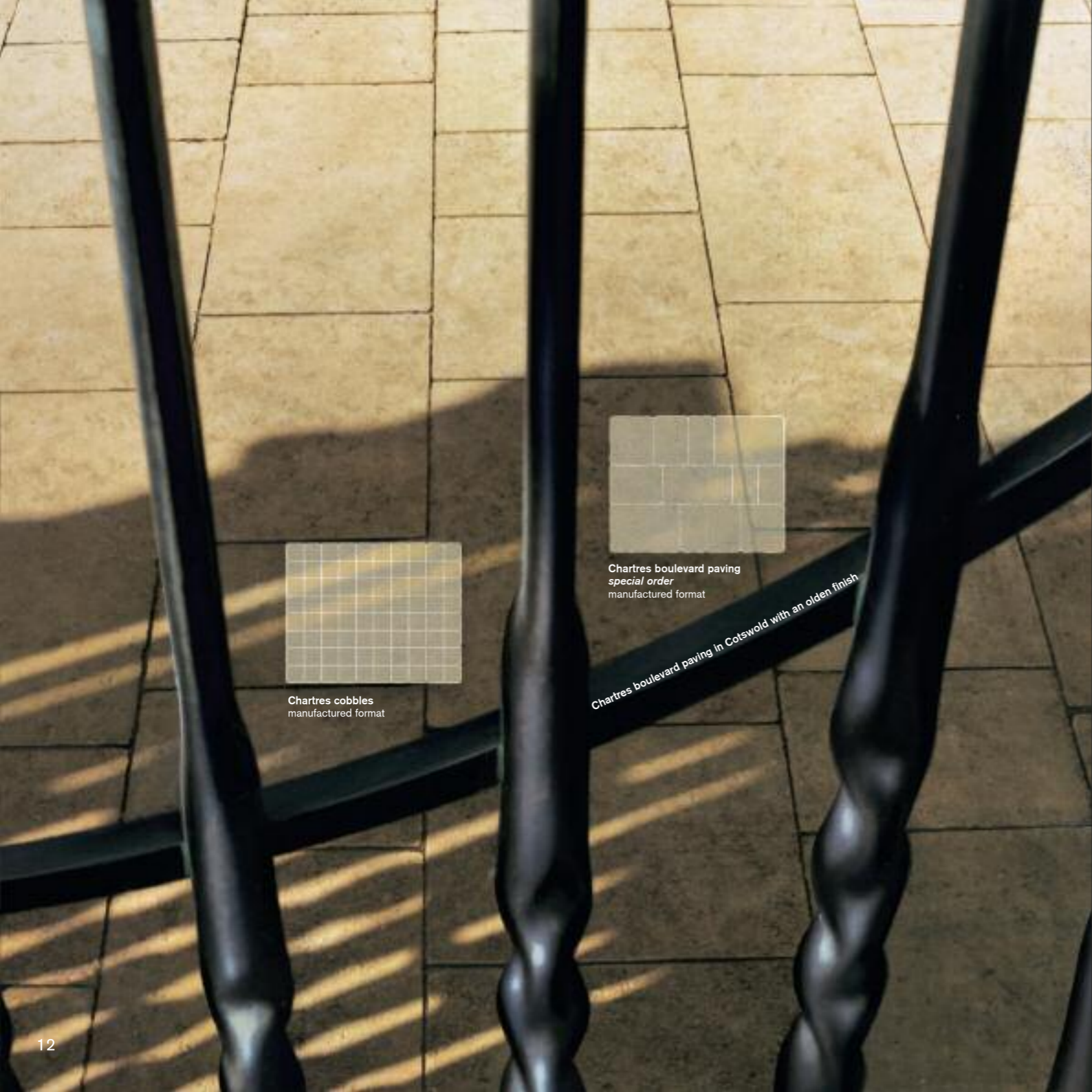
Chartres large special order
single size 250x150x60mm



Chartres edging
100x200x250mm



Chartres large in Purbeck special order



Chartres range cobbles • boulevard paving The Chartres concept has been developed to emulate the old stone traditionally used in rural and heritage sites throughout the country. Available with an olden or textured surface finish in three colours; Purbeck, Traditional and Cotswold. The range is very flexible, enabling designers to create stunning hard landscaped areas with the many varied sizes. Chartres cobbles for detailing and boulevard for that 'different' patio area.

| | per pack | thickness |
|----------------------------------|-------------|-----------|
| Chartres cobbles | 60mm | |
| square metres | 11.2 | |
| number 100x100mm | 1120 | |
| weight tonnes | 1.47 | |
| Chartres boulevard paving | 70mm | |
| square metre | 9.30 | |
| number mixed sizes | 144 | |
| weight tonnes | 1.43 | |

- 1 Chartres boulevard paving in Cotswold
- 2 Chartres cobble in Purbeck
- 3 Chartres boulevard paving in Cotswold with an olden finish
- 4 Chartres cobble in Traditional with a olden finish



Olden finish

Textured finish special order



Chartres edging 100x200x250mm

Chartres cobbles are available with a 60mm thickness. Chartres boulevard paving is available with a thickness of 70mm. Chartres edging has been specially designed to complement the range and is available in the same colours and finish.



EcoGranite sets in Royal Deeside Balmoral used with lines of Royal Forest paving in Charcoal

EcoGranite cobbles • setts • paving Put an environmental alternative on your driveway, with the EcoGranite range. Hanson Formpave EcoGranite contains up to 77% recycled materials. The textured surface finish exposes sparkling granite which offers excellent non-slip properties and design opportunities for the discerning customer. EcoGranite is available in two colours designed to replicate the stunning natural granites of Cornwall and Royal Deeside in Scotland; Balmoral and Cornish Natural.

- 1 EcoGranite cobble in Cornish Natural
- 2 EcoGranite paving, setts and bull nose kerb in Cornish Natural
- 3 EcoGranite setts in Royal Deeside Balmoral
- 4 EcoGranite starter circle with cobbles in Cornish Natural and bull nose radius kerb in charcoal, see page 24

Royal Deeside Balmoral

Cornish Natural

4

Textured finish

EcoGranite
cobble • setts • paving

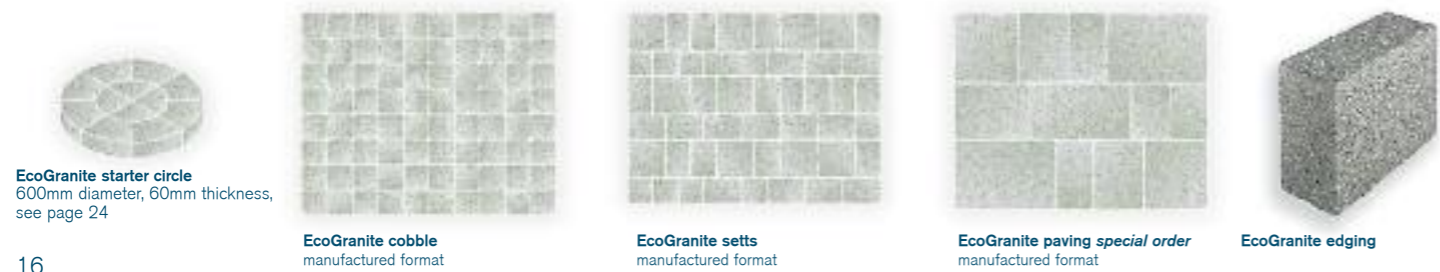
EcoGranite cobbles and setts are available with a 60mm thickness and paving with a thickness of 70mm.

EcoGranite edging and starter circle have been specially designed to complement the range and are available in the same colours with a textured finish.

| per pack | thickness |
|-------------------------------|-------------|
| EcoGranite cobbles | 60mm |
| square metres | 11.2 |
| number 100x100mm | 1120 |
| weight tonnes | 1.47 |
| setts | 60mm |
| square metre | 10.5 |
| number small blocks 100x100mm | 126 |
| medium blocks 150x100mm | 406 |
| large blocks 150x150mm | 140 |
| weight tonnes | 1.38 |
| paving | 70mm |
| square metre | 9.30 |
| number mixed sizes | 144 |
| weight tonnes | 1.43 |



- 1 EcoGranite paving, setts and bull nose kerbs in Cornish Natural
- 2 EcoGranite setts in Royal Deeside Balmoral
- 3 EcoGranite paving and edging in Cornish Natural
- 4 EcoGranite setts and edging in Cornish Natural with standard kerbs in charcoal



EcoGranite starter circle
600mm diameter, 60mm thickness, see page 24

EcoGranite cobble
manufactured format

EcoGranite setts
manufactured format

EcoGranite paving special order
manufactured format

EcoGranite edging



90° herringbone pattern



45° herringbone pattern

Royal Forest and Home-plus rectangular paving is a perfect way to create simple yet stylish driveways, paths and patios. Home-plus with a 50mm thickness is ideal for domestic use requiring less excavation prior to laying than the more robust 60mm. Royal Forest is available in 60mm for all driveway and car-parking uses. With a choice of eight distinctive colours the range offers tremendous design opportunities.

- 1 Royal Forest rectangular paving in Red brindle with edging and a bull nose step in charcoal grey
- 2 Royal Forest rectangular paving in Red brindle



- 3 Home-plus rectangular paving in Vendage
 - 4 Royal Forest in mixed colours and charcoal grey edging
- Royal Forest and Home-plus are available with a standard finish*



| | thickness | |
|---------------|-----------|-------|
| | 50mm | 60 mm |
| per pack | | |
| Home-plus | | |
| 50mm | | |
| Royal Forest | | |
| 60mm | | |
| square metres | 8.48 | 8.48 |
| number | 424 | 424 |
| 100x200mm | | |
| weight tonnes | .933 | 1.10 |



Standard finish



Royal Forest starter circle
600mm diameter, 60mm thickness, see page 24

Royal Forest range is available with a 60mm thickness. Home-plus offers all the advantages of the Royal Forest range but with a 50mm thickness it has been designed for domestic use and is ideal for driveways. Home-plus require less excavation prior to laying and is cheaper, lighter and easier to lay than 60mm thickness blocks.



Aquaflow permeable paving system and Water Harvesting

The Aquaflow system collects water from all impermeable surfaces, roofs, paths and especially the driveway. All water falling onto the paved surface is cleaned by a geotextile layer (Inbitex) before storage. Recommended uses for this water are garden watering and car washing; these uses can reduce household requirements for mains water by up to 50%. This makes Aquaflow a perfect fit with a water harvesting system. Furthermore, because cars are washed on the driveway and the driveway is permeable, even this water is recycled.

Over the past 15 years the 'Hanson Formpave Aquaflow' system has become the Flagship design for permeable paving.

The unique sub-base cleans pollutants from run-off, creating a safe, pH neutral water within the sub-base for storage and re-use.

The rainfall (run-off) is stored within this 'reservoir' area with all surplus being discharged into a sump.

With the addition of sump and pump the harvested water can be dispensed via a tap and hose-pipe. Because there is no mains water attachment the harvested water can be used where there are hose pipe restrictions, as the tank is treated as a subterranean water butt.

Car washing becomes an environmentally friendly pursuit as the majority of the water used will automatically be cleaned and recycled as it passes through the permeable paving on the driveway. The capacity of the system is dependant on the size of driveway, but additional storage can be achieved by increasing the pump chamber (sump) size. It will be necessary to calculate the

approximate quantities of water required set against the estimated quantity of rainfall. This can be done using average rainfall figures.

The Aquaflow system requires more expertise than standard concrete block paving. The sub-base design needs to be strictly adhered to. We would recommend that if in doubt you consult us at Hanson Formpave for further information. 01594 836999



1 Excavate to formation level



2 Excavate for pump chamber



3 Line with impermeable membrane and insert pump



4 Spread and compact 5-20mm clean stone



5 Lay Inbitex Geotextile



6 Spread and screed 2-6mm clean stone



7 Lay blocks (handtight)



8 Connect pump and system ready for use.



9 Brush in surface dressing

Maintenance
Ensure surface is kept clean of soil, brush regularly.

Schematic tanked system with internal and additional external sump

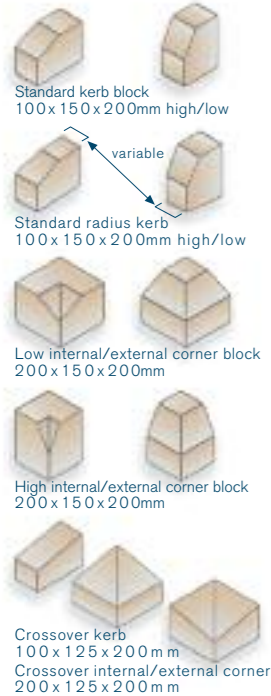


*All stone must be clean crushed and angular to allow the sub-base to perform to standards.

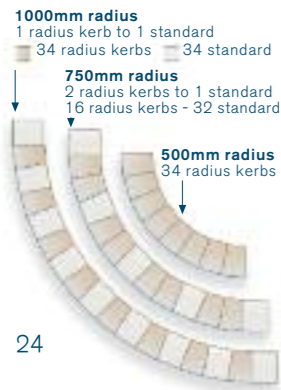


Bull nose kerb in Charcoal grey with a textured blasted finish. Standard kerb in low position Bull nose in high position Bull nose kerb in EcoGranite Edging in Cotswold with a standard finish

Standard kerb & step system

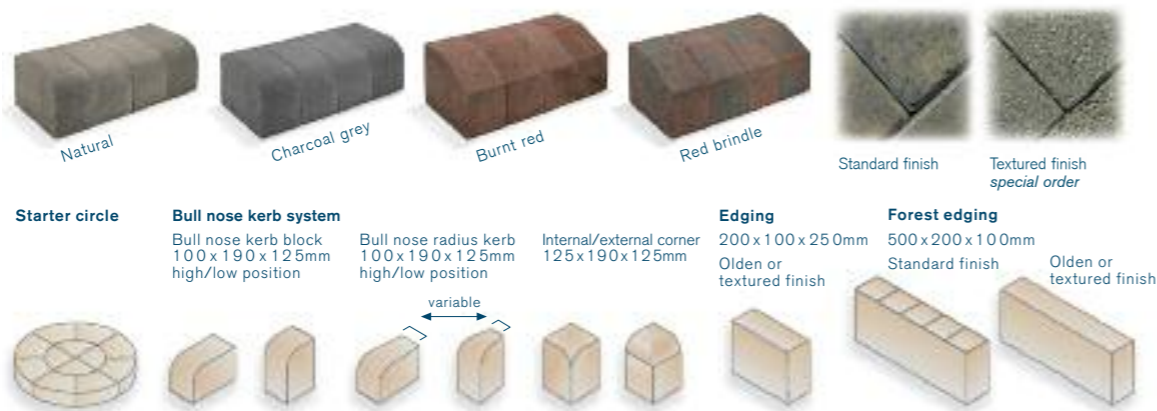


External Radii using radius kerbs



Kerbs • edging • circles **Standard kerb and step system** The range consists of eight blocks to facilitate edge restraint, cornering and cross-over. The Standard kerb block may be used in both high and low profile or inverted to form steps. **Bull nose kerb system** Consists of four blocks and has been developed to provide a softer profile edge restraint. It is available in both standard (smooth) and textured finish. **Avenida, Chartres, EcoGranite and Royal Forest edging** A substantial edge restraint designed to complement each range in material, colour and texture. It can either be laid flush with block paving or as an upstand. **Forest edging** A substantial all purpose edge restraint. It can either be laid flush with block paving or as an upstand. It is quicker and easier to lay than conventional kerb units and when laid flush with paved areas allows surface water to drain easily. **Circles** Twelve individual blocks provide a simple and effective start to forming a circular laying pattern. These are available in matching colours and textures for each range to special order. Radius kerbs, cut to suit your design are available to special order.

Both the Standard kerb and step system and Bull nose kerb system are available in four standard colours:



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- Aquaflow
- Aquaflow ML
- Aquaflow MLE
- Aquaflow MLTB
- Aquaflow Thermapave
- Aquapave
- Aquapaving
- Aquasett
- Aquaslab
- Formcell
- Formpave
- Formpave Aquaflow
- SC Intergrid
- SC Membrane
- Inbitex

™ Trademarks
EcoGranite
Chartres range
Royal Forest
Royal Forest ML45

Patents
The system and products described in this brochure are covered by patents and patent applications in Great Britain and other countries:

- AU 751257
- CA 2334571
- GB 2 338 969
- DE 1 095 189
- GG 2 338 969
- IE 1 095 189
- IT 1 095 189
- JE P688
- NL 1 095 189
- NZ 508786
- ES 1 095 189
- US 6 939 077
- BE 1 095 189
- AU 2002217305
- BE 1 373 640
- CA 2,431,629
- GB 1 373 640
- DE 1 373 640
- IE 1 373 640
- IT 1 373 640
- NL 1 373 640
- NZ 526311
- ZA 2003/4637
- ES 1 373 640
- US 7 168 884
- AU 2005263879
- CA 2,557,220
- EP 05749142
- NZ 549583
- ZA 2006/07351
- US 10/594,705
- AU 2006212015
- CA 2,597,382
- EP 06709711.3
- GB 0602831.0
- NZ 556691
- ZA 2007/07217
- US 11/891,200

Design service
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Pack sizes
Pack sizes may vary according to manufacturing location, please check with sales office.

Specifications
Formpave's policy of continuous product development may necessitate changes to specifications without prior notification. All drawings shown within this brochure are indicative only and not to scale.

Our companies and products

Hanson UK is split into three business lines – Hanson Quarry Products, Hanson Cement and Hanson Building Products. We also offer a range of contracting services. For detailed information on all areas of Hanson and our products visit: www.hanson.com/uk

Hanson Quarry Products

| | |
|-----------------|----------------------|
| Crushed rock | Ready-mixed concrete |
| Sand and gravel | Ready-mixed mortar |
| Asphalt | Screed |
| Contracting | Civil engineering |

Hanson Cement

| | | | |
|-------------|--|---------------------------|-----------------|
| Bulk cement | Ground granulated blastfurnace slag (GGBS) | Pulverised fuel ash (PFA) | Packed products |
|-------------|--|---------------------------|-----------------|

Hanson Building Products

| | |
|---------------------------|-----------------------------------|
| Bricks | Chimneys and roofing |
| Blocks | Cladding |
| Precast concrete products | Off-site solutions |
| Permeable paving (SUDS) | Specialist brick and block laying |



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Products supplied by

Hanson Plc a Global Business
Hanson is one of the world's largest suppliers of heavy building materials to the construction industry. We produce aggregates (crushed rock, sand and gravel), ready-mixed and precast concrete, asphalt and cement-related materials and a range of building products including concrete pipes, concrete pavers, tiles and clay bricks.

We are part of the Heidelberg Cement Group, which employs 70,000 people across five continents, has leading positions in concrete and heavy building products and is the global leader in aggregates.

Hanson Building Products is the UK's largest brick and aercrete block producer. We also produce aggregate blocks, bagged aggregate and cement products, renders, pavers, pre cast floors and stairs, SUD systems and prefabricated building systems. The division incorporates London Brick, Thermalite, Red Bank, Cradley, Formpave and Structherm.

Situated at Coleford in the Royal Forest of Dean, the Hanson Formpave works is one of the most sophisticated of its type in Europe. The technology used in the works and the Company's quality assurance scheme provides complete works traceability of every block made.

The works has BS EN ISO 9001:2000 Quality Assurance accreditation and Hanson Formpave is a BSI registered company.

If you would like information on Hanson Formpave's other products, including our Storm water source control system and range of Aquaflow permeable paving, please visit our web site www.hanson.com/uk/formpave or call our Sales office on 01594 836999.

Joint filling sand

Hanson Formpave specially kiln dried sand is recommended for use with all types of concrete block paving with the exception of permeable paving. Available in 25kg bags, 1 bag provides coverage for approximately 8 –10m².

Aquaflow surface dressing grit

Hanson Formpave Aquaflow surface dressing grit is recommended for use with permeable block paving systems. Available in 25kg bags, 1 bag provides coverage for approximately 8 –10m².

Colour and finish variations

Hanson Formpave products are manufactured from naturally occurring materials and consequently may show slight variations in finish and colour.

It is strongly recommended that products are taken from two or more packs and mixed during laying to minimise any colour variation.

All concrete products may suffer from efflorescence. This occurs naturally and will disappear with use. It is in no way detrimental to the performance of the product. No responsibility can be accepted for this natural occurrence.

Please note: 'Natural' as used in the Aquapave, Royal Forest and Kerb range is not coloured with the aid of pigments. The colour is that of the raw materials used and may vary.

Advisory service

Hanson Formpave are pleased to offer detailed technical advice on all products.

Samples

Sample blocks are available from your nearest Hanson Formpave stockist upon request.

Maintenance and Care

All paved surfaces will require occasional cleaning. In normal circumstances, regular sweeping will be sufficient. A range of specialist cleaning products are available; contact your local merchant for details. It should be noted that lighter coloured blocks may exhibit tyre marks and will therefore require more cleaning and maintenance when used in certain situations.

Product development

The designs shown in this brochure are illustrative only. Every effort is made to ensure the accuracy of all textural and pictorial content in this brochure. Hanson Formpave reserves the right to change specifications without prior notice. All Hanson Formpave paving products are backed by BS EN ISO 9001 certification for product quality and service.

Adverse weather

Do not use frozen materials or lay sand bedding on frozen or frost covered sub-bases. Protect stock piled bedding sand to ensure it does not become saturated.

Protect uncompacted areas of paving from heavy rainfall.

High skid resistance paving BS Technical specification

All cement and bituminous bound surfaces eventually show a degree of polishing during use. This produces lower slip skid resistance and can be more dangerous in wet weather.

Hanson Formpave have developed High skid resistant blocks and paving manufactured from gritstone with a polished stone value of 70.

Hanson Formpave standard products possess excellent wet skid resistance. There are, however, occasions when enhanced skid resistance surfacing is desirable, for example: • on steps • on access ramps • on areas to be used by elderly or infirm people • on roads with heavy traffic loading • or in shopping precincts.

The polished skid resistance of Hanson Formpave products can be increased by specifying a textured finish where available.

Colour Reproduction

Every care has been taken to reproduce the colour of the blocks in this document as accurately as possible. However, we cannot reproduce exact colours and recommend that you examine a sample block.

