

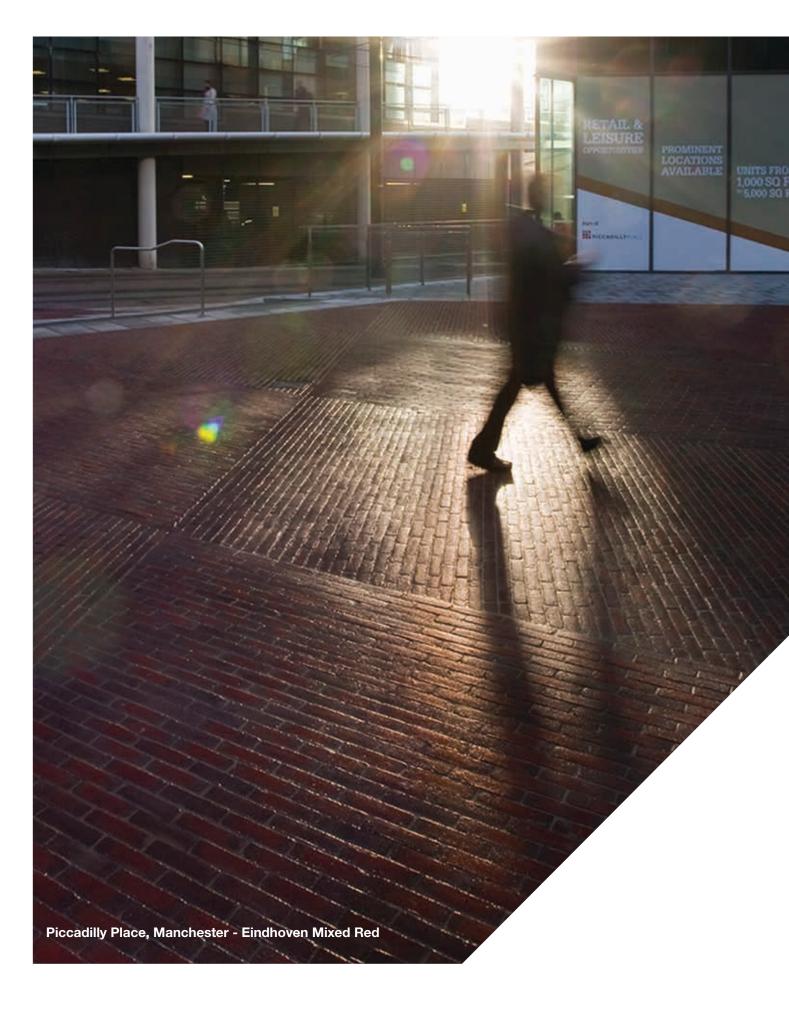
Landscaping Solutions

A guide to natural clay paving.

2016.







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Bath Spa University - Auraton WF



Wienerberger; single focus, thousands of products

Founded in 1819, Wienerberger has grown into a world-class provider of wall, roof and landscaping solutions with a global reach.

With 204 plants in 30 countries – 14 of them in the UK, 14,800 global employees – we lead the way in new build and renovation markets, offering more than 1,000 products encompassing the complete building envelope. Our product innovation is measured against three key benchmarks: quality of construction, perfection in performance and increasingly, sustainability. All three inform every paver in this brochure, and every product we produce.









For Wienerberger,

sustainability is a dynamic and lasting commitment. It has been embedded in our management and culture for as long as we can remember. It's an approach that will drive us into a greener future.

We strive to maximise sustainability without compromising the performance of our products – it's central to our output worldwide.

- \bullet Our $\rm CO_2$ emissions are 12.5% lower than the industry average
- Our recycled slate tiles were the first roofing products to achieve 'Excellent' status under BES 6001
- Our Heckmondwike factory was the first in the UK to achieve carbon neutrality
- We are signatories of the British Ceramic Confederation Health and Safety Pledge
- All of our production processes meet the requirements for the Responsible Sourcing of Construction Products throughout the supply chain as defined in the BRE Environmental and Sustainability Standard BES 6001
- Material efficiency improvements at Broomfleet have saved the equivalent of 8,000 tonnes of clay since 2011
- In 2014 the amount of renewable electricity consumed by & exported from Wienerberger sites represented more than half of our total electricity use



Sustainability is at the heart of our paving product range. Our Dutch manufacturing operations meet the requirements of ISO 14001, ISO 9001 and KOMO quality certification systems at national level and use 100% green electricity across all its sites.

Dutch clay: a renewable source

The amount of clay extracted annually by the ceramic industry in the Netherlands from the floodplains of their rivers is only a small part of the possible amount of extractable clay and in fact the Dutch rivers naturally deposit more clay than the amount extracted annually*.

The company participation in river management and clay winning helps to make the Netherlands resistant to the effect of rising water levels. In Munnikenland, near Castle Loevestein, Wienerberger is involved in the clay extraction and after completion this will result in a river water level reduction of 30 cm for the nearby village of Gorinchem. Clay is extracted in the close vicinity of the Wienerberger production sites and moved by barge, thereby minimising lorry movements.

Like all operations worldwide Wienerberger Netherlands is an active player in its country's sustainability agenda. The company is a long-term member of the Dutch covenant Multiyear Energy Efficiency (MJA) and a signatory to the Foundation for Climate Friendly Procurement & Entrepreneurship (SKAO).

* Michiel J. Vander Meulen et-al, 'Sediment management and the renewability of flood plain clay for structural ceramics', J Soils Sediments, Springerlink.com, 2009.



Why choose clay?

Used for thousands of years in construction worldwide, clay remains the most efficient, cost effective and sustainable solution for modern buildings.

Its natural properties mean that it is able to provide complete, longterm sustainability, not only offering increasingly sophisticated low-carbon product manufacture, but giving a building life of up to 200 years with little or no maintenance.

Clay is strong, durable and builds in sound and temperature-control benefits wherever it's used – creating the ideal internal living environment.

From sustainability credentials and build quality to the ease of use on-site, clay as a material is equipped to meet every demand of modern construction.

Wienerberger and clay

Wienerberger has blended the very latest in manufacturing technology with an established construction heritage. The result is a product portfolio that is unmatched in range and quality.

Every single paver, from first to last, has been designed to convey our passion for the material; created to give our customers the highest quality, the best price and the widest choice.

Our products represent the best of clay, and the best of building.

The appeal of clay paving

In commercial scenarios, clay has long been overlooked in favour of cheaper, alternatives like concrete or asphalt. However, it's worth remembering that cost doesn't equal value. The naturally sustainable qualities of clay make it the perfect material for pavers. Once installed, clay pavers are easy to maintain, and with a lifecycle of up to 200 years, the upfront price of clay pavers represents serious value for money.

Give your project sustainability that will last the distance with Penter.





Paver Manufacturing Sites

Kingsbury, England

Netherlands

.....

Germany







The Yard, University of Roehampton, London

Learningscape

BDA Awards Winner

Best Outdoor Space

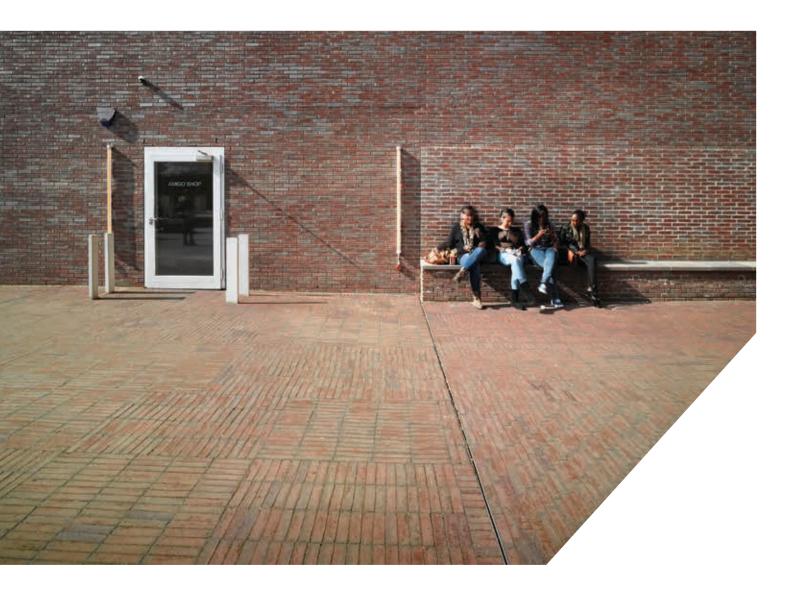
Client: University of Roehampton Architect: Henley Halebrown Rorrison Pavers used: Herne Dark Brindled Slimpave Paved area: 1,600m²

The Yard forms a central part of the master plan for the University of Roehampton. The project replaces an old trades yard and workshops at the heart of the campus, with a new public space that links Froebel and Digby Stuart Colleges, which were once separated by a boundary wall.

The scheme creates a single paverlined space. Clay bricks and pavers were chosen to unify the old and the new, for surface, structure and skin, and to achieve a consistency through the range of different conditions and details, including conservation and repair. Furthermore, The Yard, capitalises on the eccentric building remains and ground conditions revealed by the demolition of the workshops. The design harnesses these eccentricities to reduce environmental waste.

New structural openings have been made to open the chapel and an existing café up to the Yard. The historic boundary wall has been reduced in height and buttressed within the Yard to make it structurally sound. New flat brick arches have been introduced and openings formed to link the Yard to the historic Froebel garden and the Courts. To the north a new covered walk way has been carved out of an existing building.

Clever detailing and design has allowed the paver to be used in the new brickwork and surrounding walls, taking the aesthetics of the product into the vertical from the horizontal.



The impression of solidity in the paver is honestly revealed in the free standing flemish-bond bench walls, whilst the one-third stretcher bond brick skins are used as building envelopes drawn over existing walls left exposed from the demolition works.

The paving is laid in a variety of bonds including one-third stretcher, stack and herringbone. Niche benches built into the walls and copings are cast and etched reconstituted stone. Their pigment, similar to that of the lime-wash for the historic boundary wall, has been derived from grinding up samples of the new pavers from site.

The paver, which has also been used as a brick is unique in the UK. It is

thin - 210mm x 48mm x 70mm. It is waterstruck which gives it a rough quality. The colour varies: the clay when fired turns purple, silver, brown and red. In the large, uninterrupted brick-paved areas, these silver pavers form eyecatching elements and enliven the hard bricklaying.

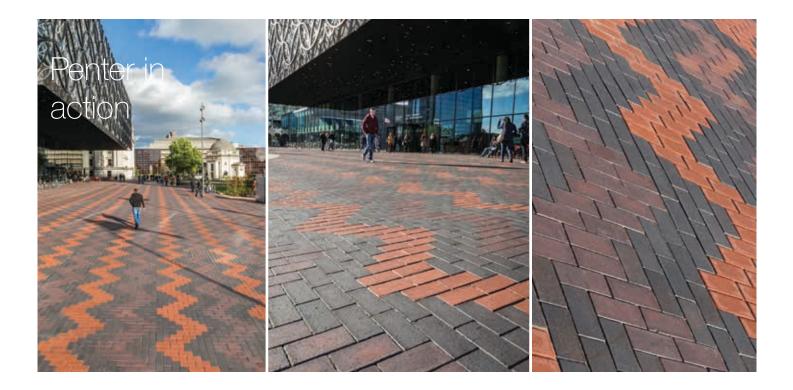
The depth of jointing is also varied: in structural walls it is recessed, for bench back-rests it is flush, whilst paving joints are tightly sanded or laid in a matrix of pea gravel to promote the growth of vegetation. By using 12mm bedding joints, 5 courses of new brickwork corresponds exactly with 4 courses of the standard bricks of the existing walls, giving rise to a playful mini dialogue of scale. Lime forms part of the light black brown mortar within to eliminate expansion joints.

The Yard creates a new intersection at the heart of the campus, a place for people to meet and work, and a place for events.

These particular pavers offered scope for expression because of their nonstandardised dimensions and their varied range of surface finishes, textures and colours.



Penter Landscaping Solutions



The Library of Birmingham, Birmingham

Publicscape



Case study available to view www.wienerberger.co.uk/ landscapes/case-studies

<u>Shortlisted</u> for the BDA Awards Best Outdoor Space **Client:** The Library of Birmingham, The redesign of Centenary Square **Architect:** Mecanoo

Pavers used: Dragfaced Chamfered Blue, Multi Brindled, Essen Red, Hannover Buff Brindled.

Paved area: 3,600m²

From the moment that it was unveiled in September 2013, the unique architectural design of The Library of Birmingham has captured the imagination of the British public. Wienerberger, the leading supplier of wall, roof and landscaping innovations, was chosen to provide clay pavers to the project, which has transformed Centenary Square, the largest public square in the heart of Birmingham. However, such a task was not as straightforward as it might initially sound. It wasn't simply a matter of choosing paving to suit the practical needs of the area, but a process that had to carefully consider a whole gamut of geographic, architectural and historical requirements.

For example, there was a very clear requirement for the paving to provide Centenary Square with a sense of coherence; to provide a physical and symbolic link between the bold, unapologetically modernist external appearance of the library itself and the proud architectural heritage of the region; the Victorian red clay brick and terracotta building stock that quickly became synonymous with the inner-city Birmingham of centuries past.

Of course, despite its shiny modern appearance, the Library itself, in both material and structure, has been cleverly designed to offer subtle references to the past – albeit in a way that is ostentatiously futuristic. The founder of the Dutch architectural practice Mecanoo, Francine Houben, commented that the £189 million project that she helped create, wears its filigree skin of metal loops as a 'motif' of the city: 'The façade recalls the industrial gasometres as well as the history of the jewellery trade here'.



That said, these striking rings also give the building a significant dose of something less traditional on major public buildings, and more common behind the fortified glass of the city's specialised retail quarter: bling. As such, the sense that the project creates, perhaps more than anything else, is a deeply satisfying feeling of juxtaposition as familiar materials are expressed in unfamiliar ways. With this in mind it was crucial that the paving in Centenary Square was able to maintain this delicate aesthetic balance.

In order to do so, the style of pavers chosen needed to mesh with the design of the square into three distinct realms: monumental, cultural and entertainment. Like the material choices on the library, these palazzos illustrate important periods in the history of the city, and accentuate an artisan tradition within a famously

industrial region. Wienerberger's Dragfaced Chamfered Blue and Multi Brindled pavers were selected along with the Essen Red and the Hannover Buff Brindled paver to create what Mecanoo calls the 'red line' to lead pedestrians into Centenary Square. The Penter range of chamfered pavers is renowned for its durability and distinctive colour selection, making it ideal for creating designs that harmonise and accentuate the landscape. The Dragfaced Chamfered Blue and Multi Brindled pavers are produced from Wienerberger's clay reserves at its renowned Kingsbury factory, while Baggeridge pavers are well known for their vibrant colours and unique deep blues, as well as being able to withstand demanding application. The Essen Red and the Hannover Buff Brindled are traditional rectangular clay pavers, which are both practical and versatile.

Aside from the practicality and durability of these particular pavers, the colours have also been carefully selected to match, contrast and cohere with the building (and indeed the surrounding area). Combined with the different paver surface finishes, and the variation of bond including stretcher and herringbone, the intention was to maintain a vivid sense of textural depth. Naturally, the aluminium rings of the library represent a pronounced aesthetic texture, and the intention was to mirror this impact across the Centenary Square palazzos so that as the eye is drawn down from the top of the structure, the paving visual will continue to deliver impact and intrigue.





Southwater One Shopping Centre, Telford

Publicscape



Case study available to view www.wienerberger.co.uk/ landscapes/case-studies Client: Telford and Wrekin Council Architect: Barton Willmore and Gillespies Architects Pavers used: Dutch Clay (Siena, Auraton, Mastiek) Paved area: 1,500m²

The first phase of Telford's groundbreaking Southwater development has been completed. The unveiling of the gold-clad Telford & Wrekin Council building signals the start of the £250million investment in the Shropshire town. The project – situated on green belt, waterside land - represented a serious aesthetic challenge for the developers at Morgan Sindall. Careful selection of building materials was of paramount importance to the design and Wienerberger was chosen to provide clay pavers. There was a clear requirement for the paving to provide Southwater One with a physical and symbolic link between the bold, unapologetically modernist external appearance of the development and its natural surroundings. The Siena (Hague Cream) pavers addressed that specification; the warm, sandy, tones blending with the surrounding natural landscape on the waterfront. In addition, the use of Wienerberger's Mastiek and Auraton pavers, with their clean grey finishes, created a crisp patina to the heart of the scheme: 'the library'.





The finished development is intended to create an exciting commercial space, while also providing a sense of tranquillity and solidity. The use of clay paving has helped to realise this, with its natural durability addressing the latter, while the laying pattern and colouration contribute to the former. With both the rigid Stretcher pattern and the more sporadic Herringbone technique being employed, the retailscape is afforded both consistency and variety.

Ultimately, the project's architectural ambition promises to provide a high functioning retailscape from which Telford can develop its business, retail, commerce and public facilities. Southwater One stands as a testament to the vision of urban planners, and the intelligent application of building materials and techniques. Keith Barker, Commercial Director at Wienerberger, commented: "This was a scheme with a great deal of considerations, from material performance and local environment, right down to the smallest design spec - but it's that sort of attention to detail that defined this project, and made it something that we were so very keen to contribute to."



Landscaping Solutions

Dutch Pavers

Dutch Pavers

Wienerberger has created its Dutch collection to achieve a new and unique look in larger areas of urban paving.

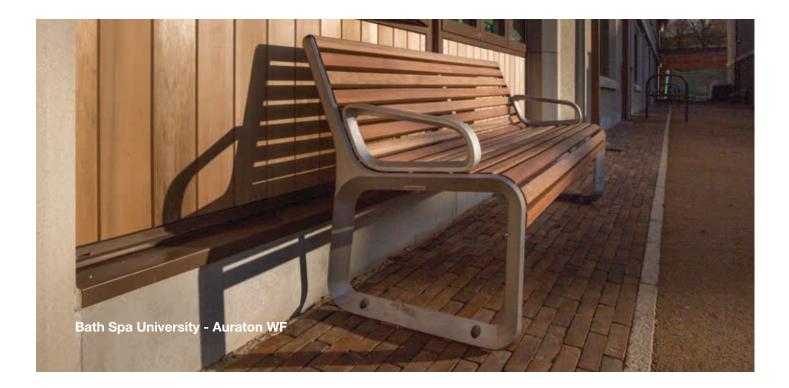
Wienerberger's mixed reds, creams, greys and waterstruck blends offer designers a wider choice and scope when designing new landscapes.

Versatile & authentic

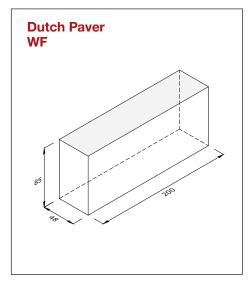
Wienerberger offers a wide choice of high quality, durable and permanently beautiful street clay pavers.

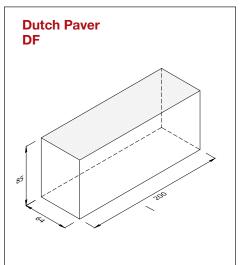
Discover the versatility of the range of pavers, get inspired for your next landscaping project and see what fits your outdoor paving needs.

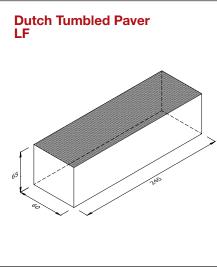
Whitburn Bay, Sunderland- Siena



Standard Dimensions









Landscaping Solutions

Dutch Pavers

Buff/Buff Multi

Southwater One, Telford - Siena

Buff/Buff Multi

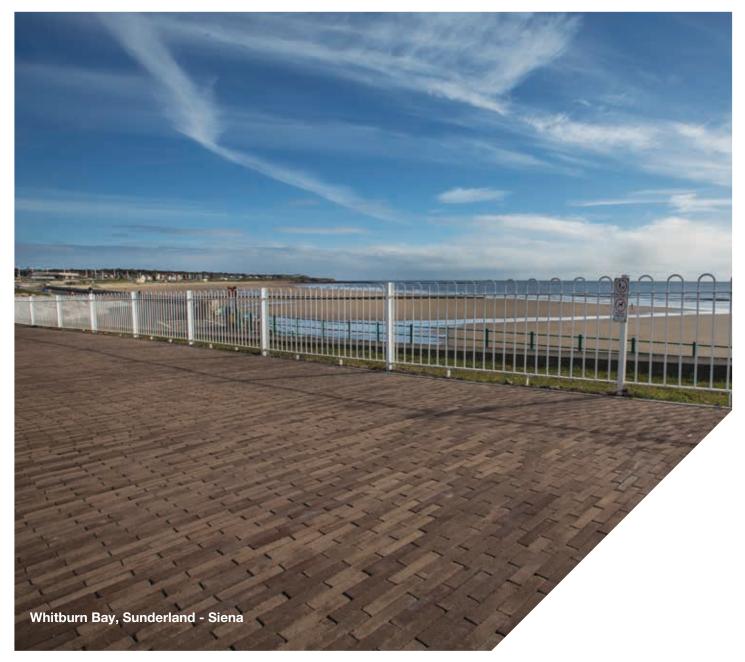
Buff/Buff Multi





Siena - (Hague Cream) WF

Siena - (Hague Cream) DF







Smithfield CBD, Stoke on Trent - Ravenna WF, Mastiek WF, Basalt & Siena WF - Supplied by Hardscape

Buff/Buff Multi



Zonnebloem Waterstruck (Tilberg Blended Ochre) WF



Auraton DF



Zonnebloem Waterstruck (Tilberg Blended Ochre) DF



Euroton Varia WF



Auraton WF



Euroton Varia DF







Solid Red









Bruno Waterstruck (Delft Dark Blend) WF



Bruno Waterstruck (Delft Dark Blend) DF



Paviona (Arnhem Red) DF

Paviona (Arnhem Red) LF

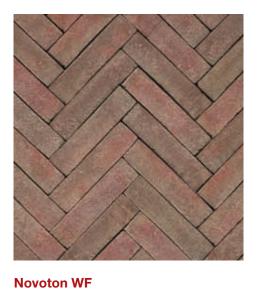




/ Penter

Dutch Pavers

Red Multi









Rosa Waterstruck WF



Euroton Novoton DF



Rosa Waterstruck DF

Padova LF





Euroton Novoton WF

Padova (Eindhoven Mixed Red) WF



Padova (Eindhoven Mixed Red) DF

Brown Multi



Mastiek Waterstruck WF



Mastiek Waterstruck DF



Mastiek LF



Mastiek WF



Oliva Waterstruck DF

Mastiek DF



Oliva WF





Oliva DF



Landscaping Solutions

Dutch Pavers

<u>Brown Multi</u>



Gala Waterstruck WF



Gala Waterstruck DF



Incana Waterstruck WF



Incana Waterstruck DF

Porto WF

Porto DF





Landscaping Solutions

Dutch Pavers

Greys and Blacks









Omber WF





Nero Waterstruck WF



Omber DF

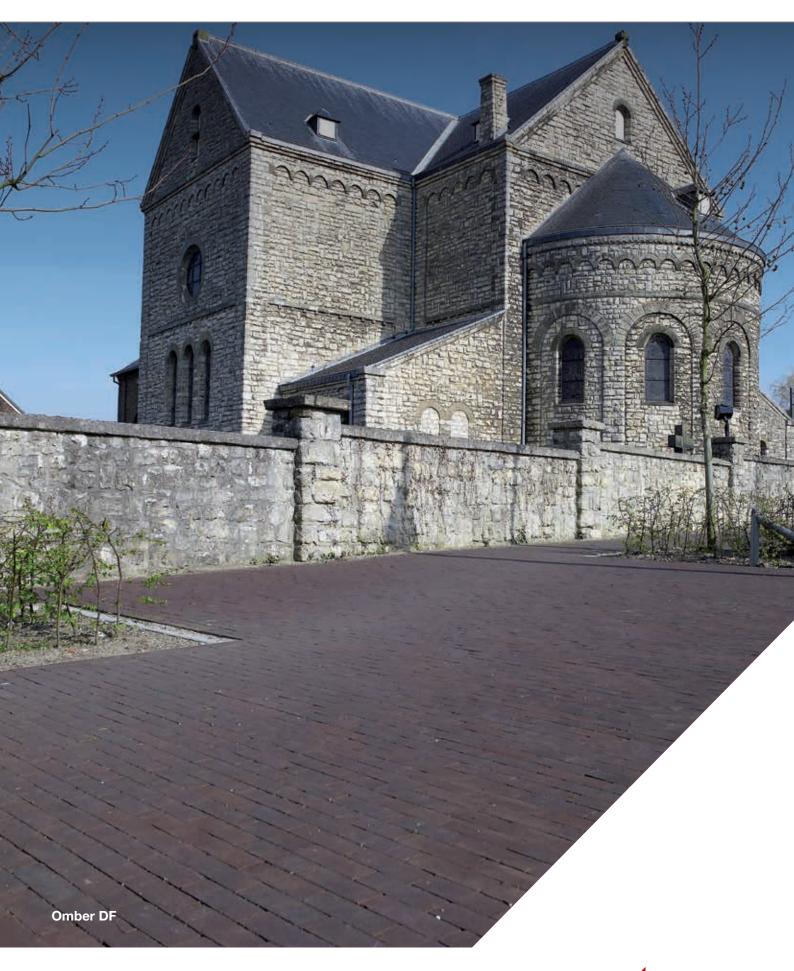


Nero (Maastricht Dark Grey) WF



Nero (Maastricht Dark Grey) DF

Nero Waterstruck DF





Landscaping Solutions

Dutch Pavers Tumbled

new manual and a second s

Tumbled

The characteristic features of the 'Old Holland' range include a tumbled edge with sanded or waterstruck textures. The range is available in tones of reds, browns, lighter greys and buff pastel shades to blend perfectly within a variety of surroundings.

Triton UWF Tumbled

<u>Tumbled</u>



Atlas UWF Tumbled



Dione UWF Tumbled

Alfaton UWF Tumbled



Qualiton UWF Tumbled





Ruston UWF Tumbled



Triton UWF Tumbled



Lotis UWF Tumbled



Supraton UWF Tumbled



Dutch Pavers





<u>200 x 200</u>



Astra Tegel TF



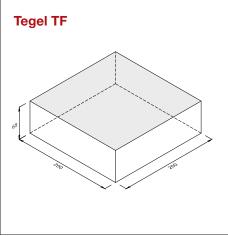
Caron Tegel TF







Bruno Tegel TF



Mastiek Tegel TF



/ Penter

Landscaping Solutions

Chamfered

Chamfered

The traditional rectangular clay paver is both practical and versatile. The Penter range of chamfered pavers is renowned for its durability and distinctive colour selection, making it ideal for creating designs which harmonise or accentuate the landscape.

Kent College - Dortmund Dark Multi

Chamfered



Bochum Orange Multi



Bremen Brown



Dortmund Dark Multi

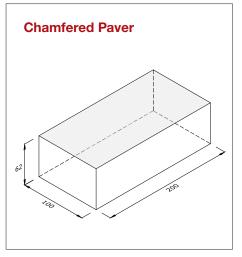


Essen Red



Munster Red Brindled

Hamburg Buff Multi



Hannover Buff Brindled



Penter

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Waterstruck Slim Pave

Waterstruck Slim Pave

Roath Basin, Cardiff - Koln Red Multi Slim Pave

Waterstruck Slim Pave



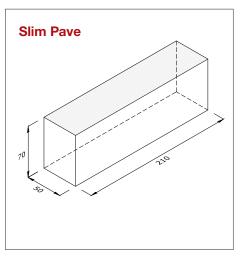




Herne Dark Brindled



Koln Red Multi



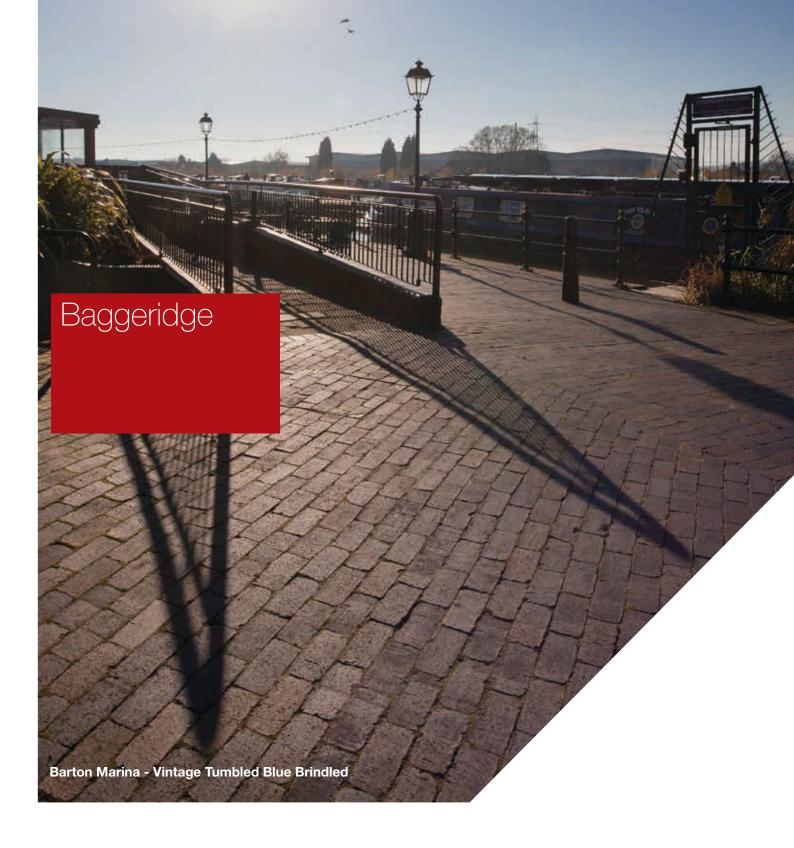
Juist



Penter

Landscaping Solutions

Baggeridge



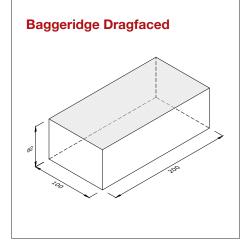
Baggeridge



Dragfaced Chamfered Blue



Promenade Square Edged Red





Dragfaced Square Edged Blue



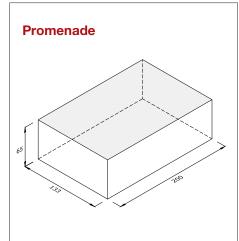
Promenade Square Edged Blue



Dragfaced Chamfered Multi Brindled



Promenade Square Edged Telford





Penter

Landscaping Solutions

Baggeridge



Baggeridge



Dragfaced Cobbles* Square Edged Blue



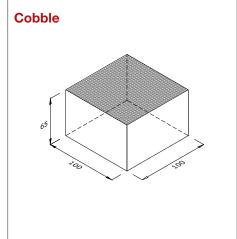
Smooth Chamfered Blue



Dragfaced Cobbles* Tumbled Blue



Vintage Tumbled Blue Brindled





// Penter

Landscaping Solutions

Specials

Patterned

Specials

Available in a wide variety of sizes, finishes and formats, Baggeridge Blue and Red pavers are famed for their durability, hard wearing surface and true blue colour – unique to the clay source used in their manufacture. With proven performance from centuries of use throughout the UK and Europe, they are suitable for the most demanding of applications.

Plaza, Germany - Baggeridge Smooth Chamfered Blue in combination with Baggeridge Diamond Pattern Blue Specials

Patterned



Diamond Pattern Red

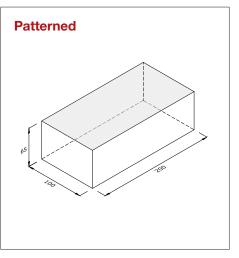


Diamond Pattern Blue



Smooth Stable Blue





Square Pattern Blue



Penter

Paver Accessories

Add to the aesthetic appeal of a paved surface

Wienerberger supplies a full range of paving accessories to enhance a commercial design scheme both aesthetically and functionally. Products are manufactured to the same high standards as Wienerberger's core paving products, consistent in strength, durability and appearance.

Wide Range

A variety of contrasting and complementary colours are available in a range that includes: Deterrent Pavers, Tactile Pavers, Infill Units, Channel Units, Step Units and units for various kerb types. Wienerberger also provides Ramp Systems, ideal for traffic calming.

Purpose Made Specials

With early involvement in design and specification, Wienerberger can supply bespoke products for any purpose. Please contact our head office for advice, on 0161 491 8200.

Availability

Wienerberger holds stock of a wide variety of paver accessories, but we advise that paver accessories may be on extended delivery during periods of high demand. It is advisable to order any paver accessories as early as possible to ensure they can be supplied to meet site installation and construction programmes.

Specials



D.E.T.R Blister Paver T.1



Corduroy Paver T.3



Directional Guidance Paver T.6



Blister Platform Edge Paver T.10



Lozenge Platform Edge Paver T.11





T.7 Directional Guidance Paver -Stop End



T.8 Directional Guidance Paver -Intermediate



T.9 Directional Guidance Paver -Half Stop



T.10

Blister Platform Edge Paver







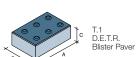
T.12 Lozenge Platform Edge Paver - Half

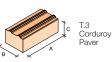


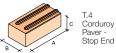
T.13 Lozenge Platform Edge Paver -Intermediate

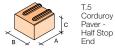


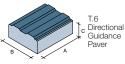












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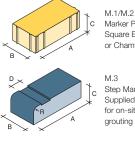
Marker Pavers

Marker pavers are standard paving by Wienerberger for use in a wide range of applications, including: indicating traffic restrictions, marking car bays, and where the use of naturally contrasting paver

These units are factory coated in yellow or white and treated with an anti-skid dressing. To support the visually impaired, specially designed Step Marker Pavers provide a means of highlighting step nosings and are available in red or blue to complement paving and supplied for on-site application of infill grout by the contractor.



Yellow Marker Paver - Chamfered **M.2**



Marker Paver* -Square Edged or Chamfered

Step Marker -Supplied ready for on-site grouting

* The life of the coating will depend upon conditions of use

Typical application:

- Highways
- Car Parks

White Marker Blocks:

Suitable for:

- Trafficked Highways
- Definition or Parking Bays
- Locations where high visibility indicators are required



Step Marker Paver M.3

	MARKER PAVER	S - DIMENSI	ONS (mm)			
Code	Туре	А	В	С	D	R
M.1	Marker Paver* - Square-edged	200	100	65	-	-
M.2	Marker Paver* - Chamfered	200	100	65	-	-
M.3	Step Marker Paver	215	102	65	55	25

Deterrent Pavers

Offering various levels of deterrence to restrict or prevent use by pedestrians, bicycles and supermarket trolleys or to discourage vehicle over-run, Deterrent Pavers are generally laid with alternating rows, or larger areas of standard pavers. They can also contribute to the overall aesthetic impact of a scheme through the contrast of light and shade afforded by their profiles, coupled with the use of colour.

Note: In the interests of user safety, careful consideration should be given to the design and location of deterrent features.

Available in red, blue and buff



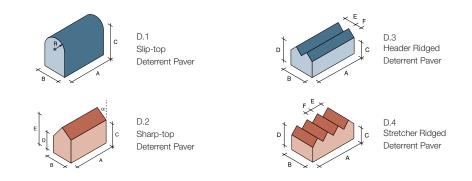




Sharp-top Deterrent Paver D.2



Stretcher Ridged Deterrent Paver and Header Ridged Deterrent Paver D.4 & D.3



	DETERRENT PAVERS - DIMENSIONS (r	nm)							
Code	Туре	А	В	С	D	Е	F	R	α
D.1	Slip-top Deterrent Paver	200	102	150	-	-	-	51	-
D.2	Sharp-top Deterrent Paver	200	102	114	83	150	-	-	45°
D.3	Header Ridged Deterrent Paver	200	100	65	25	50	25	-	-
D.4	Stretcher Ridged Deterrent Paver	200	100	65	25	50	25	-	-







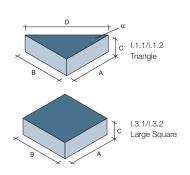
Landscaping Solutions

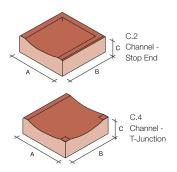
Infill, Channel, Step and Ramp Pavers

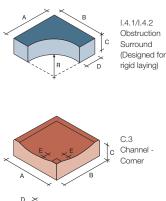
Infill Units

Offering a neat finish whilst minimising on-site cutting of small pieces, Infill Units are positioned adjacent to edge restraints or obstructions in a flexibly constructed pavement. They are normally available in blues and reds, with smooth or dragfaced surface textures to complement our full range of pavers.

Typically used to direct surface water run-off to suitable outlets, these Channel Units feature a dished profile, which is compatible with popular dished









1.2.1/1.2.2

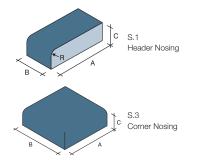
Small Square

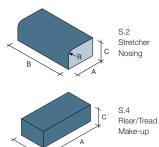
Step Units

gully outlets.

Channel Units

These Nosing Units feature rounded leading edges to minimise chipping in normal use, whilst Riser/Tread make-up units are faced on two headers, one stretcher and one bed face. As a means of highlighting step nosings to assist the visually impaired, Tactile Pavers for use adjacent to flights of steps and Step Markers, which provide a means of highlighting step nosings, are also available.



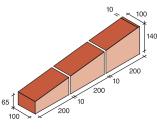


Ramp Systems

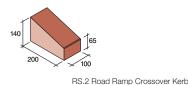
Ideal for use in traffic calming applications these Ramp Systems are designed for rigid construction and are available in standard profiles as shown. We are also pleased to assist with purpose-designed ramps for specific projects.

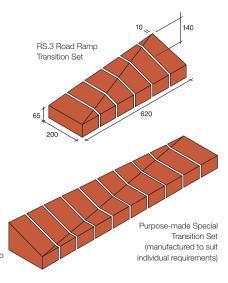
Available in red, blue and buff





RS.I Road Ramp Set





Infill, Channel, Step and Ramp Pavers

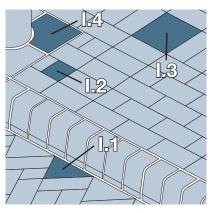
		INFILL UNITS	S - DIME	INSION	S (mm)					
Code	Туре	Edge Detail	А	В	С	D	Е	D	R	α
l.1.1	Triangle	Square-edged	187	187	65	264	-	-	-	45°
l.1.2	Triangle	Chamfered	187	187	65	264	-	-	-	45°
1.2.1	Small Square	Square-edged	96	96	65	-	-	-	-	-
1.2.2	Small Square	Chamfered	96	96	65	-	-	-	-	-
1.3.1	Large Square	Square-edged	196	196	65	-	-	-	-	-
1.3.2	Large Square	Chamfered	196	196	65	-	-	-	-	-
1.4.1	Obstruction Surround	Square-edged	194	194	65	-	-	varies	to order	-
1.4.2	Obstruction Surround	Chamfered	194	194	65	-	-	varies	to order	-

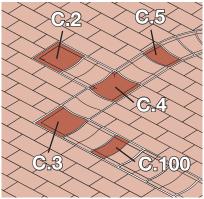
The radius on Obstruction Surrounds should not exceed 140mm and should be specified 10mm larger than the obstruction radius. Non-circular Obstruction Surrounds are available to order. Infill units are available either square-edged or chamfered.

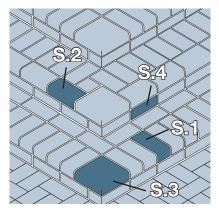
		Cł	IANNEI		6 - DIME	INSION	IS (mm)	
Code	Туре	А	В	С	D	Е	I.R. Internal Radius	Approx No. per ¼ Circle
C.100	Channel	200	100	65	12	20	-	-
C.2	Channel Stop End	200	200	65	-	-	-	-
C.3	Channel Corner	200	200	65	-	-	-	-
C.4	Channel T-Junction	200	200	65	-	-	-	-
C.5.1	Radius Channel	200	61	65	90	-	500	11
C.5.2	Radius Channel	200	74	65	90	-	1000	19
C.5.3	Radius Channel	200	78	65	90	-	1500	27
C.5.4	Radius Channel	200	81	65	90	-	2000	35
C.5.5	Radius Channel	200	82	65	90	-	2500	43

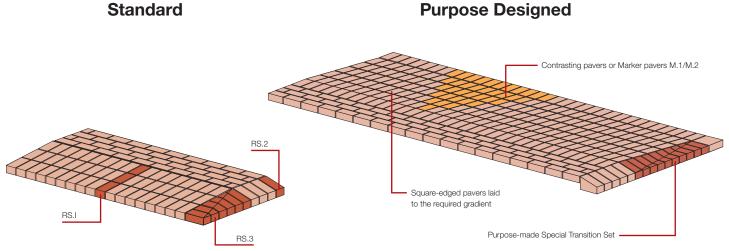
		INFILL UNITS -	DIMENSIONS (mn	n)	
Code	Туре	А	В	С	R
S.1	Header Nosing	215	102	65	25
S.2	Stretcher Nosing	XX	XX	65	25
S.3.1	Corner Nosing	215	102	65	25
S.3.2	Corner Nosing	215	215	65	25
S.4	Riser/Tread Make-up	215	102	65	-

S.3.1 is available left or right handed, S.3.2 is not handed, S.4 is faced on two headers, 1 stretcher and 1 bed.









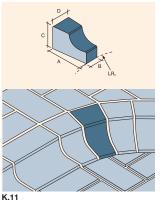


Purpose Designed

Kerbs

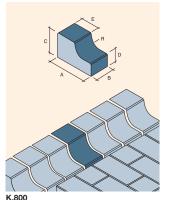
Kerb Units

Adding visual definition to an area, kerbs in a paving scheme perform a number of functions including creating edge restraint details, delineating areas for vehicular and pedestrian use, and deterring over-riding by vehicles. Allowing kerbs to be constructed to suit the demands of anticipated levels and types of traffic, while maintaining the aesthetic coherence of a scheme, Kerb Units are offered in a choice of profile and depth of upstand, with units to achieve crossovers, corners and radii.

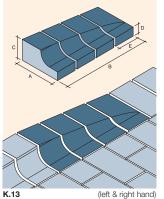


Internal Radius Boot Kerb

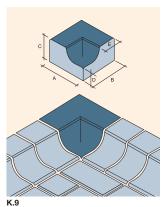
K.12 External Radius Boot Kerb



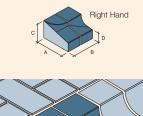
Boot Kerb

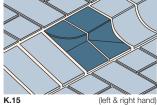


Boot Drop Kerb Set



Boot Kerb Internal Corner



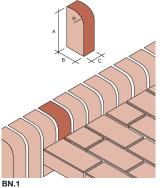


Boot to Crossover Transition

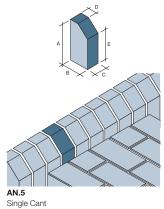
Boot, Cant & Bullnose Kerbs

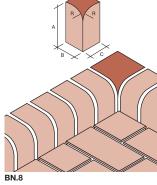
The Boot Kerb should be laid in a vertical orientation for heavily trafficked areas, although it can also be laid horizontally for use in lightly trafficked areas. The units may also act as a transition between paving and brickwork, with brickwork being built directly on them. Cant and Bullnose Kerbs are only suitable for very lightly trafficked areas. Purpose made returns and drop sets are available to order.



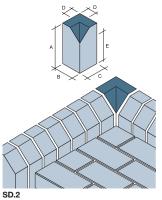






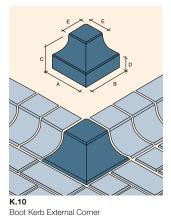


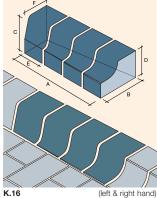
Single Bullnose Internal Return On End



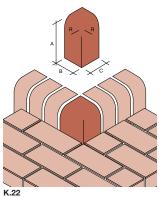
Single Cant Internal Return On End



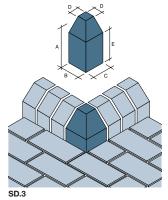




Boot to Half Batter Kerb Transition



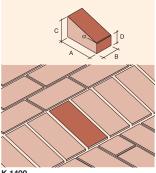
Single Bullnose External Return On End



Single Cant External Return On End

Crossover Kerbs

Typically used to facilitate access for vehicular or other wheeled traffic where the general run of kerbing is an upstand kerb, the Crossover Kerb may also be used as a kerb in its own right. Alternative angles of slope are available to order.



K.1400 Crossover Kerb

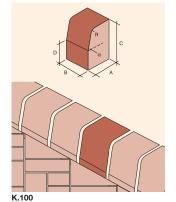
BOOT, CANT, BULLNOSE KERBS & CROSSOVER KERBS - DIMENSIONS (mm)

Code	Туре	А	В	С	D	Е	F	R	Radius I.R./E.R.	Approx No. per ¼ Circle	α
K.800	Boot Kerb	200	100	125	65	103	-	50	-	-	-
K.9	Boot Kerb Internal Corner	200	200	125	65	103	-	-	-	-	-
K.10	Boot Kerb External Corner	200	200	125	65	103	-	-	-	-	-
K.11.1	Boot Kerb Internal Radius	200	61	125	90	-	-	-	500	11	-
K.11.2	Boot Kerb Internal Radius	200	74	125	90	-	-	-	1000	19	-
K.11.3	Boot Kerb Internal Radius	200	78	125	90	-	-	-	1500	27	-
K.11.4	Boot Kerb Internal Radius	200	81	125	90	-	-	-	2000	35	-
K.11.5	Boot Kerb Internal Radius	200	83	125	90	-	-	-	2500	43	-
K.12.1	Boot Kerb External Radius	200	90	125	49	-	-	-	500	8	-
K.12.2	Boot Kerb External Radius	200	90	125	70	-	-	-	1000	16	-
K.12.3	Boot Kerb External Radius	200	90	125	77	-	-	-	1500	24	-
K.12.4	Boot Kerb External Radius	200	90	125	80	-	-	-	2000	32	-
K.12.5	Boot Kerb External Radius	200	90	125	82	-	-	-	2500	39	-
K.13	Boot Drop Kerb Set	200	430	125	65	100	-	-	-	-	-
K.1400	Crossover Kerb	200	100	125	65	-	-	-	-	-	17°
K.15	Boot to Crossover Transition	200	200	125	65	-	-	-	-	-	-
K.16	Boot to Half Batter Kerb Transition	430	200	170	125	100	125	-	-	-	-
AN.5.1	Single Cant	215	102	65	46	159	-	-	-	-	-
AN.5.2	Single Cant	215	102	65	60	173	-	-	-	-	-
SD.2.1	Single Cant internal return on end	215	102	102	46	159	-	-	-	-	-
SD.2.2	Single Cant internal return on end	215	102	102	60	173	-	-	-	-	-
SD.3.1	Single Cant external return on end	215	102	102	46	159	-	-	-	-	-
SD.3.2	Single Cant external return on end	215	102	102	60	173	-	-	-	-	-
BN.1.1	Single Bullnose	215	102	65	-	-	-	25	-	-	-
BN.1.2	Single Bullnose	215	102	65	-	-	-	51	-	-	-
BN.8.1	Single Bullnose Internal Return On End	215	102	102	-	-	-	25	-	-	-
BN.8.2	Single Bullnose Internal Return On End	215	102	102	-	-	-	51	-	-	-
K.22.1	Single Bullnose External Return On End	215	102	102	-	-	-	25	-	-	-
K.22.2	Single Bullnose External Return On End	215	102	102	-	-	-	51	-	-	-
K.23.10	Dual Purpose Kerb	100	150	65	35	95	-	-	25	-	45
K.23.20	Dual Purpose Kerb	200	150	65	35	95	-	-	25	-	45
K.24	Dual Purpose Kerb	130	130	100	58	88	-	-	25	-	45

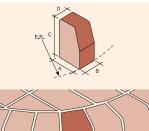


Half Batter Kerbs

The Half Batter Kerb is intended for vertical installation but may also be laid horizontally depending on the depth of upstand and visual appearance required. In such cases, purpose-made returns and drop sets are available to order.

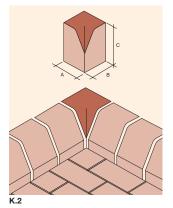


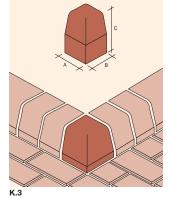
Half Batter Kerb



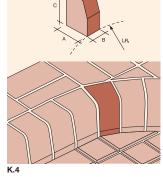


K.5 External Radius Half Batter Kerb



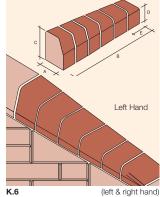


Half Batter Kerb External Corner



Internal Radius Half Batter Kerb



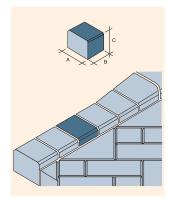


K.6 (left & right hand Half Batter Drop Kerb Set

	HALF BATTER	AND FL	USH I	KERBS	- DIN	IENSIC	NS (I	MM)			
Code	Туре	А	В	С	D	Е	F	R	Radius I.R./E.R.	Approx No. per ¼ Circle	α
K.100	Half Batter Kerb	125	100	200	100	-	18	-	-	76°	-
K.2	Half Batter Kerb Internal Corner	125	125	200	-	-	-	-	-	-	-
K.3	Half Batter Kerb External Corner	125	125	200	-	-	-	-	-	-	-
K.4.1	Half Batter Kerb Internal Radius	125	68	200	88	-	-	500	10	-	-
K.4.2	Half Batter Kerb Internal Radius	125	77	200	88	-	-	1000	18	-	-
K.4.3	Half Batter Kerb Internal Radius	125	74	200	81	-	-	1500	28	-	-
K.4.4	Half Batter Kerb Internal Radius	125	75	200	80	-	-	2000	37	-	-
K.4.5	Half Batter Kerb Internal Radius	125	75	200	80	-	-	2500	46	-	-
K.5.1	Half Batter Kerb External Radius	125	77	200	55	-	-	500	9	-	-
K.5.2	Half Batter Kerb External Radius	125	82	200	71	-	-	1000	17	-	-
K.5.3	Half Batter Kerb External Radius	125	74	200	67	-	-	1500	28	-	-
K.5.4	Half Batter Kerb External Radius	125	75	200	70	-	-	2000	37	-	-
K.5.5	Half Batter Kerb External Radius	125	75	200	71	-	-	2500	46	-	-
K.6	Half Batter Drop Kerb Set	125	650	200	100	100	-	-	-	-	-
K.7	Flush Kerb	125	100	100	-	-	-	-	-	-	17°

Flush Kerbs

Typically used at a drop kerb position in conjunction with a Half Batter Drop Kerb Set, the Flush Kerb may also be used as a kerb or edging in its own right.





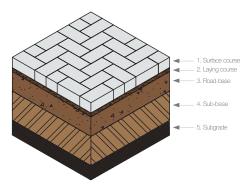


Technical Characteristics and Properties to BS EN 1344 : 2002. Individual product information available in Paver Index.

Laying

The sub-grade and the sub-base.

The sub-grade should be prepared to the engineer's required specification and the sub-base should normally be a well compacted Type 1 to the designed thickness taking into account traffic loadings and suitability of the subgrade.



Edge restraint

It is imperative that solid edge restraints are provided along the perimeter of all paved areas to restrict lateral movement (creep) resulting from the action of deceleration and turning forces. They should be adequate to prevent the escape of the bedding course material beneath the paver surface.

Cutting clay paving

Clay paving should be cut using a multi bladed mechanical paver splitter or bench mounted water cooled power saw to achieve the best finish. Clay paving should not be cut to less than a quarter of the original size along the length of the paver and never cut across the width – when required complimentary fittings and inboard cutting should be used.

Successful detailing



Laying pattern at edge Soldier course



Detailing around manhole Soldier course

Detailing around manhole Double stretcher course

Laying pattern at edge

Double stretcher course

Drainage

Sufficient cross-fall should be provided to prevent standing water on all block paved surfaces.

Unpacking the pavers

In order to obtain the correct blend of colour, mix from a minimum of 3 packs. The paver packs require unpacking vertically - not horizontally, layer-by-layer. This will equally distribute minor size variations of the pavers over the entire pavement, and will help to maintain the correct bond pattern. Damaged or broken pavers must not be used although they can be used as cut pieces for infilling.

Bedding course and paving

Bedding course material should be washed naturally occurring silica sand and should be selected in accordance with the recommendations given in BS7533 : Part 3 : 2005 – Code of Practice for Laying Precast Concrete Paving Blocks and Clay Pavers for Flexible Pavements.

Bedding sand is both the strength and weakness of a flexible clay pavement as it provides the interlock that ensures that pavers can accommodate extreme loading.

Bedding course material to be 25-40mm compacted thickness over the specified thickness of sub base. The use of a geotextile below bedding course to prevent migration of sand may be advisable if the sub-base is open textured. Pavers should be laid in the designated bond pattern working from an edge restraint or existing laying face edge. Mechanical force should not be used to bring pavers into intimate contact and should be laid such that a joint width of 2 to 5mm forms between each paver with a target joint width of 3mm thus ensuring there is no point contact between units. The laying of any clay paver, with or without nibs, will require the opening or closing up of joints to maintain good lines throughout the work due to the tolerances of a natural clay product.

Compaction of pavers

When a sufficient area of pavers has been laid - and before starting the vibration - a fine kiln dried silica jointing sand must be brushed into the joints. The pavers are compacted onto the sand bed using a vibrating plate compactor with a rubber sole-plate to any avoid damage to the surface.

After compaction, any damaged pavers must be immediately removed and replaced. Any unevenness or differences in height must be re-adjusted.

Joint-filling

After compaction, a further application of fine kiln dried silica sand is brushed into the joints until all joints are entirely full. Failure to ensure joints are full before opening up the area to traffic may cause movement and loosening of the paved surface. Upon satisfactory completion traffic may be permitted to use the pavement. Do not use high powered suction cleaners on newly laid areas of flexible paving.

Maintenance

Wienerberger clay pavers are resistant to chemicals and cleaning fluids. Pavements using clay pavers can be cleaned using biodegradable detergents. Mechanical or high water pressure cleansing operations will require re-sanding of the joints.

For further information please contact the Wienerberger design services team.



// Penter

Basic Installation & Design Guidance

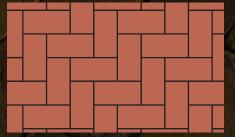
Laying Patterns and Technical Guidance

The design laying pattern is fundamental to the process to the successful laying of clay paving. Due to the natural characteristics of clay paving, manufacturing tolerances may not permit the achievement of perfectly straight lines. Joints can be re-aligned through the use of string lines and infill units can be incorporated as the pattern develops.

Suggested patterns -



Herringbone 45 degree – Commercial



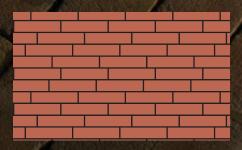
Herringbone 90 degree – Commercial



Basket weave (2 face and 3 face) – pedestrian



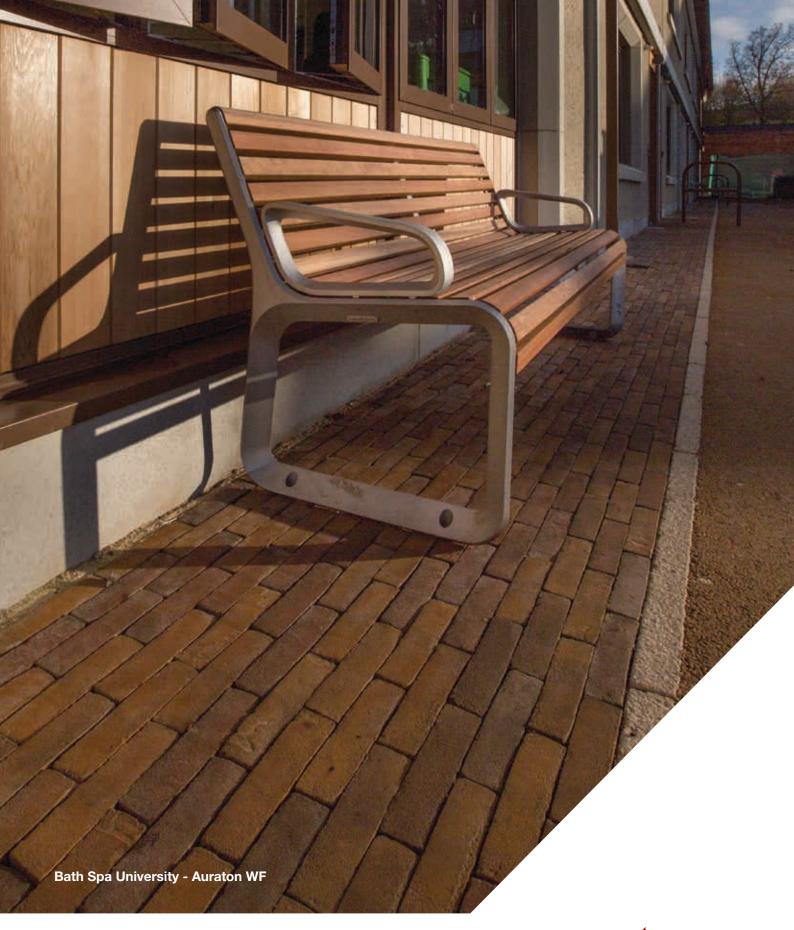
Running bond course – Pedestrian



Staggered bond - pedestrian



Chevron





Paver Index

PRODUCT NAME	WORK SIZE	DIMENSIONAL DEVIATION (RANGE)	MEAN TRANSVERSE BREAKING LOAD	UNPOLISHED SLIP/SKID RESISTANCE	ABRASION	DURABILITY	PACK SIZE	TYPICAL PACK WEIGHT (kg)	QUANTITY PER m ²	AVAILABLE TUMBLED	PAGE
Alfaton UWF Tumbled	200 x 50 x 65	R1	T4	U3	A2	FP100	800	1042	98		32
Astra Tegel TF	200 x 200 x 65	R1	T4	U3	A2	FP100	200	1092	25		34
Atlas UWF Tumbled	200 x 50 x 65	R1	T4	U3	A2	FP100	800	1160	100		32
Auraton DF	200 x 64 x 85	R1	T4	U3	A2	FP100	756	1715	75	1	22
Auraton WF	200 x 48 x 85	R1	T4	U3	A2	FP100	1040	1693	100	1	22
Basalt DF	200 x 64 x 85	R1	T4	U3	A2	FP100	640	1476	75	1	29
Basalt WF	200 x 48 x 85	R1	T4	U3	A3	FP100	880	1443	100	1	29
Bochum Orange Multi	200 x 100 x 62	R1	T4	U3	A3	FP100	560	1568	50		36
Bonn Golden Multi	210 x 50 x 70	R1	T4	U3	A3	FP100	864	1296	90		38
Bremen Brown	200 x 100 x 62	R1	T4	U3	A3	FP100	560	1568	50		36
Bruno DF	200 x 64 x 85	R1	T4	U3	A2	FP100	628	1517	100	1	24
Bruno WF	200 x 48 x 85	R1	T4	U3	A2	FP100	880	1443	100	1	24
Bruno Tegel TF	200 x 200 x 65	R1	T4	U3	A2	FP100	200	1092	25		34
Bruno Waterstruck (Delft Dark Blend) DF	200 x 64 x 85			U3	A2	FP100	640	1476	75		24
Bruno Waterstruck (Delft Dark Blend) WF	200 x 48 x 85	R1	T4	U3	A2	FP100	880	1443	100	1	24
Caron Tegel TF	200 x 200 x 65			U3	A2	FP100	200	1218	25		34
Caron UWF Tumbled	200 x 50 x 65	R1	T4	U3	A2	FP100	800	1222	98		32
Diamond Pattern Blue	200 x 100 x 65			U3	A3	FP100	400	1165	50		44
Diamond Pattern Red	200 x 100 x 65	R1	T4	U3	A3	FP100	400	1165	50		44
Dione UWF Tumbled	200 x 50 x 65			U3	A2	FP100	800	1160	100		32
Dortmund Dark Multi	200 x 100 x 62			U3	A3	FP100	560	1568	50		36
Dragfaced Chamfered Blue	200 x 100 x 65			U3	A3	FP100	396	1144	50		40
Dragfaced Chamfered Multi Brindle	200 x 100 x 65			U3	A3	FP100	396	1144	50		40
Dragfaced Cobbles Square Edged Blue	100 x 100 x 65			U3	A2	FP100	768	1200	100		42
Dragfaced Cobbles Tumbled Blue	100 x 100 x 65			U3	A2	FP100	768	1200	100		42
Dragfaced Square Edged Blue	200 x 100 x 65			U3	 A3	FP100	396	1144	50		40
Essen Red	200 x 100 x 62		 T4	U3	A3	FP100	560	1568	50		36
Euroton Novoton DF	200 x 100 x 02 200 x 64 x 85			U3	A3	FP100	592	1453	75		25
Euroton Novoton WF	200 x 48 x 85	R1		U3	A2	FP100	752	1433	75		25
Euroton Varia DF	200 x 64 x 85			U3	A2	FP100	592	1500	75	v	22
Euroton Varia WF	200 x 48 x 85		 T4	U3	A2	FP100	752	1525	100	1	22
Gala Waterstruck DF	200 x 48 x 85			U3	A2 A2	FP100	640	1476	75		22
Gala Waterstruck WF	200 x 04 x 85			U3	A2 A3	FP100	880	1443	100		27
										v	
Hamburg Buff Multi	200 x 100 x 62			U3	A3 A3	FP100	560	1568	50		36 36
Hannover Buff Brindled	200 x 100 x 62			U3	-	FP100	560	1568	50		
Herne Dark Brindled	210 x 50 x 70	R1	T4	U3	A3	FP100	864	1296	90		38
Incana Waterstruck DF	200 x 64 x 85	R1	T4	U3	A2	FP100	640	1476	75		27
Incana Waterstruck WF	200 x 48 x 85	R1	T4	U3	A3	FP100	880	1443	100	<i></i>	27
Juist	210 x 50 x 70	R1	T4	U3	A3	FP100	864	1296	90		38
Koln Red Multi	210 x 50 x 70	R1	T4	U3	A3	FP100	864	1296	90		38
Lotis UWF Tumbled	200 x 50 x 65	R1	T4	U3	A2	FP100	800	1095	98		32
Mastiek DF	200 x 64 x 85	R1	T4	U3	A2	FP100	628	1476	75		26
Mastiek LF	240 x 60 x 65	R1	T4	U3	A3	FP100	640	1584	55	1	26
Mastiek Tegel TF	200 x 200 x 65	R1	T4	U3	A2	FP100	200	1218	25		34
Mastiek Waterstruck DF	200 x 64 x 85	R1	T4	U3	A2	FP100	628	1476	75	<i></i>	26
Mastiek Waterstruck WF	200 x 48 x 85	R1	T4	U3	A2	FP100	880	1443	100		26
Mastiek WF	200 x 48 x 85	R1	T4	U3	A3	FP100	880	1443	100	1	26
Munster Red Brindled	200 x 100 x 62	R1	T4	U3	A3	FP100	560	1568	50		36
Nero (Maastricht Dark Grey) DF	200 x 64 x 85	R1	T4	U3	A2	FP100	628	1660	75	<i></i>	29
Nero (Maastricht Dark Grey) WF	200 x 48 x 85	R1	T4	U3	A3	FP100	880	1443	100	<i></i>	29
Nero Waterstruck DF	200 x 64 x 85	R1	T4	U3	A2	FP100	640	1476	75	1	29
Nero Waterstruck WF	200 x 48 x 85	R1	T4	U3	A3	FP100	880	1443	100	1	29
Novoton DF	200 x 64 x 85	R1	T4	U3	A2	FP100	756	1715	75	1	25
Novoton WF	200 x 48 x 85	R1	T4	U3	A2	FP100	1040	1693	100	<i>✓</i>	25
Oliva DF	200 x 64 x 85	R1	T4	U3	A2	FP100	640	1421	75	1	26
Oliva Waterstruck DF	200 x 64 x 85		T4	U3	A2	FP100	640	1476	75		26

PRODUCT NAME	WORK SIZE	DIMENSIONAL DEVIATION (RANGE)	MEAN TRANSVERSE BREAKING LOAD	UNPOLISHED SLIP/SKID RESISTANCE		DURABILITY	PACK SIZE	TYPICAL PACK WEIGHT (kg)	QUANTITY PER m ²	AVAILABLE TUMBLED	PAGE
Oliva Waterstruck WF	200 x 48 x 85	R1	T4	U3	A2	FP100	880	1443	100	1	26
Oliva WF	200 x 48 x 85	R1	T4	U3	A2	FP100	880	1364	100	1	26
Omber DF	200 x 64 x 85	R1	T4	U3	A2	FP100	628	1660	75	1	29
Omber WF	200 x 48 x 85	R1	T4	U3	A3	FP100	864	1690	100	1	29
Orion Tegel TF	200 x 200 x 65	R1	T4	U3	A2	FP100	200	1092	25		34
Padova (Eindhoven Mixed Red) DF	200 x 64 x 85	R1	T4	U3	A2	FP100	628	1421	75	1	25
Padova (Eindhoven Mixed Red) WF	200 x 48 x 85	R1	T4	U3	A2	FP100	880	1443	100	1	25
Padova LF	240 x 60 x 65	R1	T4	U3	A2	FP100	660	1584	70	1	25
Paviona (Arnhem Red) DF	200 x 64 x 85	R1	T4	U3	A2	FP100	628	1660	75	1	24
Paviona (Arnhem Red) LF	240 x 60 x 65	R1	T4	U3	A2	FP100	660	1663	70	1	24
Paviona (Arnhem Red) WF	200 x 48 x 85	R1	Τ4	U3	A2	FP100	880	1443	100	1	24
Porto DF	200 x 64 x 85	R1	T4	U3	A2	FP100	640	1421	75	1	27
Porto WF	200 x 48 x 85	R1	T4	U3	AЗ	FP100	880	1364	100	1	27
Promenade Square Edged Blue	200 x 133 x 65	R1	T4	U3	A3	FP100	288	1165	37		40
Promenade Square Edged Red	200 x 133 x 65	R1	T4	U3	A3	FP100	288	1165	37		40
Promenade Square Edged Telford	200 x 133 x 65	R1	T4	U3	A3	FP100	288	1165	37		40
Qualiton UWF Tumbled	200 x 50 x 65	R1	T4	U3	A2	FP100	800	1042	98		32
Rosa Waterstruck DF	200 x 64 x 85	R1	T4	U3	A3	FP100	640	1476	100	1	25
Rosa Waterstruck WF	200 x 48 x 85	R1	T4	U3	A3	FP100	880	1443	100	1	25
Ruston UWF Tumbled	200 x 50 x 65	R1	T4	U3	A2	FP100	800	1042	98		32
Siena - (Hague Cream) DF	200 x 64 x 85	R1	T4	U3	A2	FP100	628	1660	75	1	20
Siena - (Hague Cream) WF	200 x 48 x 85	R1	T4	U3	A2	FP100	864	1690	100	1	20
Smooth Chamfered Blue	200 x 100 x 65	R1	T4	U3	A3	FP100	400	1165	50		42
Smooth Stable Blue	200 x 100 x 65	R1	T4	U3	AЗ	FP100	400	1165	50		44
Square Pattern Blue	200 x 100 x 65	R1	T4	U3	AЗ	FP100	400	1165	50		44
Supraton UWF Tumbled	200 x 50 x 65	R1	T4	U3	A2	FP100	800	1042	98		32
Triton UWF Tumbled	200 x 50 x 65	R1	T4	U3	A2	FP100	800	1160	100		32
Vintage Tumbled Blue Brindled	215 x 102 x 65	R1	Τ4	U3	AЗ	FP100	400	1311	45		42
Zonnebloem Waterstruck (Tilberg Blended Ochre) DF	200 x 64 x 85	R1	T4	U3	A2	FP100	640	1476	75	1	22
Zonnebloem Waterstruck (Tilberg Blended Ochre) WF	200 x 48 x 85	R1	T4	U3	A2	FP100	880	1443	100	1	22

Α	В	С	D	Е	F	G	н	I	J	Κ	L
PRODUCT NAME	WORK SIZE	DIMENSIONAL DEVIATION (RANGE)	MEAN TRANSVERSE BREAKING LOAD	SRV	ABRASION	DURABILITY		TYPICAL PACK WEIGHT (kg)	QUANTITY PER m ²	AVAILABLE *TUMBLED	PAGE

etails

Guide to technical data – the deta
A. Product Name
B. Work Size
Provides the work dimensions of the paver
(excluding nibs). The principal requirement of BS EN
1344:2002 is that the work dimensions of length,
width and depth are to be stated.
C. Dimensional Deviation
The difference between the largest and the smallest
measurement of any given measured dimension to
be found within a sample of 10 pavers.
D. Mean Transverse Breaking Load
Measures the load a paver can withstand.

E. SRV

F. Abrasion Resistance Indicates durability of the surface when in contact with vehicular and pedestrian traffic.
G. Durability A measure of the freeze/ thaw resistance of clay pavers.
H. Pack Size
Number of pavers packaged together to form a pack
I. Typical Pack Weight

Total weight of a pack of pavers allowing for nominal moisture content.

- J. Quantity per m2
- K. Available tumbled
- L. Page

All pavers in this brochure are also suitable for domestic application.

For more detailed or specific technical performance please contact our Head Office on (0161 491 8200)

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