

Specification Brochure

High performance paving mortars and aggregates for pavements
constructed in clay, concrete, natural stone and porcelain paving units



The Grange University Hospital, Cwmbran

Steintec[®]
high performance paving mortars



Steintec®

high performance paving mortars

The UK's leading producer of high performance paving mortars.
 Supplying the commercial and domestic markets.

www.steintec.co.uk



We have a wealth of experience nationally and internationally, contributing to projects with outstanding longevity and visual appeal. Paving projects represent a major investment to all involved, so we're committed to helping achieve a successful outcome for every project.

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01



Introduction



Steintec and Modular Pavements



Steintec and Modular Pavements

Pavement design and specification

It's easy to underestimate the importance of paving mortars in the design and specification of pavements

The correct choice of bedding, bonding and jointing mortar is fundamental to the structural performance and durability of modular paving.

Only the best mortars provide enduring resistance to the mechanical and thermal stress imposed on a pavement decade after decade.

Because selection of the paving mortars is as important to project success as selection of the paving units, Steintec has developed its paving mortars to meet and exceed the exacting requirements of BS 7533-101.

For detailed industry standard guidance, designers and specifiers should refer to BS7533-101:2021.

For unrivalled support resolving real-world technical design challenges; **Talk to Steintec.**



BS 7533-101:2021

BS7533 is the standard for the design of modular pavements constructed in clay, concrete or natural stone units.

It describes in detail the performance requirements of the bedding, bonding and jointing mortars that make a modular pavement work.

Selecting mortars that meet all the performance requirements of BS7533-101:2021 is fundamental to achieving a successful outcome for any pavement project.



What is a BS compliant mortar?

Quite simply, it's a mortar that meets or exceeds every one of the performance requirements of BS7533-101.

For bedding mortars refer to Table 9 and section 5.4.

For jointing mortars refer to Table 12 and section 5.6.

Steintec's mortars meet or exceed all requirements of BS7533-101.

Are all proprietary mortars BS compliant?

No, most aren't. Many still claim compliance whilst only meeting some of the performance requirements stated in BS7533-101.

The requirements listed in the current 'standard' are not a 'pick and choose' menu but a list of all the essential characteristics that bedding, bonding and jointing mortars must possess for the delivery of structural competence and longevity.

Steintec's mortars have always met or exceeded BS7533. The performance demanded by BS7533-101 simply reflects the standard set by Steintec for over two decades.



CPD and Technical Support

Accredited CPD Topics

We think it's important to make our detailed working knowledge of our mortars, their applications and performance capabilities freely available to all designers and specifiers. Combined with our unmatched technical support we can help the professional deliver successful projects, first time every time.

Steintec's professionally qualified architectural and engineering team are on hand to assist on a project by project basis, backed with years of combined experience of effectively resolving a range of

design and construction issues. For a more general approach we share our knowledge through our accredited CPD topics. These are widely recognised for the quality of their content and relevance to the challenges faced by today's design professional.

Our suite of CPD topics have been specially developed for: landscape architects, architects, engineers, D&B contractors and other professional specifiers.



Interactive online or in person CPDs available.

Modular Pavements. Design and Specification Essentials CPD

Enquire Now

- Modular pavement design & specification
- BS 7533 overview
- Bound, unbound, concrete & natural stone construction
- Pitfalls and myths

SuDs and Permeable Pavements CPD

Enquire Now

- SuDs overview
- Permeable pavements
- Technical developments
- Legislative contexts for England, Scotland & Wales

Modern Problems and Solutions CPD

- Addresses issues such as shallow build-up
- Paving over insulation, blue roofs, & high-rise terraces



The CPD Certification Service

For more information on our CPDs visit Steintec.co.uk www.steintec.co.uk/CPD

or CPD Certification Service www.cpduk.co.uk/providers/tuffbau-steintec



The Grange University Hospital, Cwmbran



Southend-on-Sea, Essex

Technical, Training and Site Support Contacts

At pre-construction we can brief contractors and layworker operatives on the most efficient handling, preparation and mixing procedures and best practice laying techniques. We can also provide onsite induction sessions for optimal use of Steintec materials and specialist tools and equipment.

Our technical support is offered free of charge, because Steintec are as keen as you are to be associated with successful projects. Contact us at the earliest possible stage of your project and our experienced technical team will be delighted to assist you in whatever way we can.

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Affiliations & Certifications



The background image shows a public square or park area. In the foreground, there is a wooden planter box with a metal frame and a bicycle rack. A person is sitting on the edge of the planter box, and another person is standing nearby. The ground is paved with bricks. In the background, there are buildings and more people. A large green diagonal shape is overlaid on the right side of the image.

02

Projects

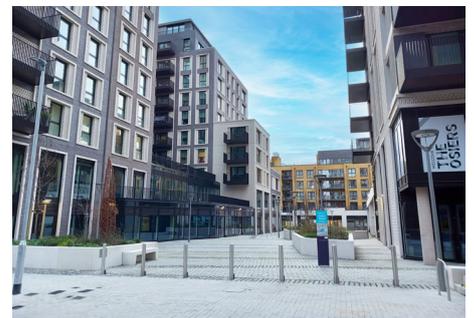
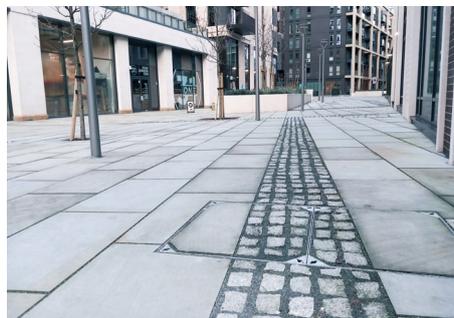
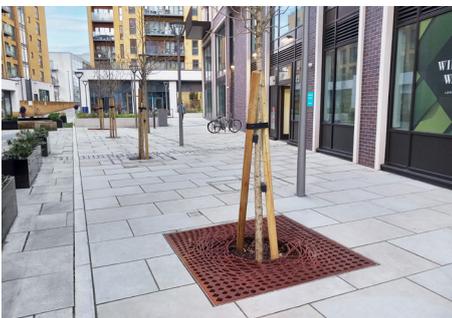
A woman in a light-colored sweater and dark pants is walking across a paved city square. The background shows a row of brick buildings, including a 'Bingo' shop with a '5000' sign and a 'Williams' shop. A large green diagonal overlay covers the left side of the image.

**Steintec products
used globally**



Osiers Road Wandsworth

The bound permeable pedestrian surface for this development was designed using a highly attractive combination of natural stone paving slabs and cropped granite setts. Bands of cropped setts with 20 mm bound permeable joints to provide a rustic contrast to the precise cut and finish of the natural stone sawn slabs with 8 mm joints.



PRODUCTS USED

tuffbed 2-pack bedding mortar

tuffbond bonding mortar

tufftop jointing mortar

tuffflow permeable jointing mortar



The Grange University Hospital, Cwmbran

It uses the landscaped areas, views across the surrounding countryside to help promote healing and wellness for staff and patients.

The largest area of the hard landscaping can be found outside the front entrance which alongside the pedestrian area includes bicycle storage, a bus stop and a one-way vehicle looped driveway.



PRODUCTS USED

tuffbed 2-pack bedding mortar
tuffbond bonding mortar
tufftop jointing mortar



Private Residence Bahrain

The combination of using tuffbed 2-pack, tuffbond and tufftop mortar have been successfully utilised in numerous Middle Eastern projects, including that of Bahrain and Qatar alongside projects within Australia, New Zealand and other Countries which endure high temperatures.



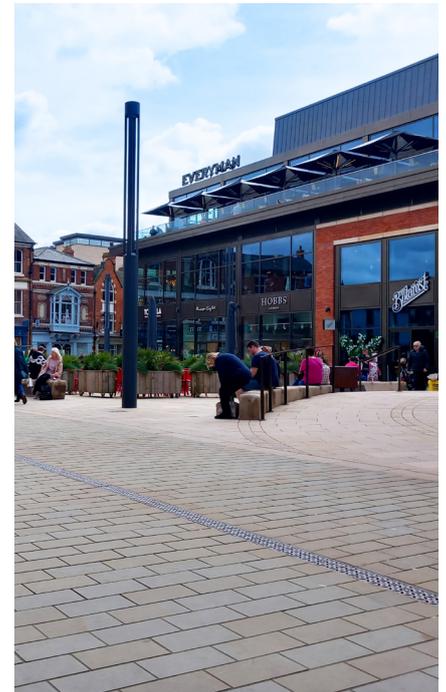
PRODUCTS USED

tuffbed 2-pack bedding mortar
tuffbond bonding mortar
tufftop jointing mortar

Cornhill Quarter Lincoln

The project has involved many design, construction and logistical challenges which required collaboration between the designers and the installers with Steintec's technical team providing ongoing assistance.

The large public areas were constructed in phases to minimise disruption to businesses and the public.



PRODUCTS USED

- tuffset G specialist mortar
- tuffbed 2-pack bedding mortar
- tuffbond bonding mortar
- tufftop jointing mortar

Broadgate Circle London

Our mortars were used at this amazing space.
It was regenerated into an exciting new retail, leisure and food destination.



PRODUCTS USED

- tuffbed 2-pack bedding mortar
- tuffbond bonding mortar
- tufftop jointing mortar

Hull City of Culture

The transformation of Hull as the UK City of Culture was a huge undertaking with more than 40,000 square metres of paving laid as part of construction work, making this Britain's biggest paving project.



PRODUCTS USED

tuffbed 2-pack bedding mortar
tuffbond bonding mortar
tufftop jointing mortar
tuffset G specialist mortar



03

Steintec
Products

Commercial Paving Mortars





Scan or click for more information on NBS Source

tuffbed 2-pack



tuffbed 2-pack
BREG EN EPD No.: 000658

Exhibition Road, London



Free Draining, Low Carbon Permeable Bedding Mortar Type 35



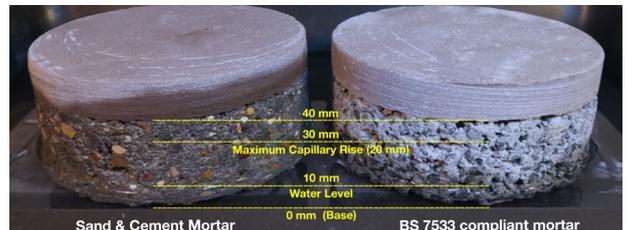
Exhibition Road, London



tuffbed 2-pack

Type 35, High Performance, Free Draining, Low Carbon, Permeable, Bedding Mortar.

Use as the laying course on larger projects for clay, concrete, natural stone and porcelain paving units in bound construction.



Click image to watch timelapse

Features and Benefits

- Performance exceeds BS7533-101:2021 Type 35 bedding mortar requirements and in particular the requirement for permeability and frost resistance when cured.
- The permeability of the bedding mortar helps to prevent moisture related issues, including frost damage, structural failure, efflorescence, picture framing and organic staining.
- tuffbed 2-pack has a maximum capillary rise of 20 mm as required by BS 7533-101 and when tested to Annex C.
- Low carbon footprint: This two-part product requires no pre-drying or pre-blending of the aggregate component, and because the binder is supplied separately, the need for energy intensive central processing is avoided. This reduces overall energy use and haulage. Mixing is carried out on site which also makes it economical and suitable to commercial and public realm projects.
- Bedding depths of between 30 – 70 mm can be placed in a single layer. Greater depths are achieved by placing successive layers. BS 7533-101 recommends a minimum of 40 mm.

Structure is vital for 'High Performance'.

To meet all the performance requirements of BS7533-101:2021, something few proprietary bedding mortars achieve, Steintec takes a scientific approach to selecting and grading aggregates for its bedding mortars.

These are close-graded for hardness, angularity and natural interlock providing inherent strength even before the addition of the binder.

Addition of the highest grade binder results in the need for less binder whilst delivering exceptional strength and the levels of permeability and resistance to capillary rise demanded by BS7533-101:2021 Table 9.

Full details of embodied carbon values for tuffbed 2-pack are provided in the BRE Verified Environmental Product Declaration

tuffbed 2-pack Verified EPD - PDF
www.steintec.co.uk/_img/pics/pdf_1740999993.pdf



Scan or click for more information on NBS Source

tuffbed

European Investment Bank, Luxembourg



High Performance Pre-mixed Bedding Mortar Type 35



European
Investment
Bank

98

Boulevard
Konrad Adenauer

E East Building
Bâtiment Est



Entrance
Entrée

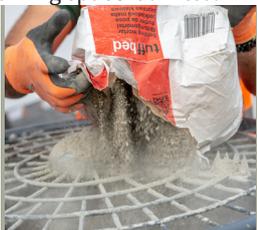
European Investment Bank, Luxembourg



tuffbed

Pre-mixed High Performance Bedding Mortar, type 35

Use as the laying course for clay, concrete, natural stone and porcelain paving units in bound construction on smaller projects or where working space is limited.



Features and Benefits

- Performance fully complies with BS 7533, also BS 7533-101:2021 Type 35 bedding mortar requirements, and in particular the requirement to be permeable and frost resistance when cured.
- tuffbed has a capillarity maximum rise of 20 mm in accordance with BS 7533-101:2021. 5.4.1 when tested to Annex C.
- The permeability of the bedding mortar helps to prevent moisture related issues, including frost damage, structural failure, efflorescence, picture framing and organic staining.
- Bedding depths of between 10 – 70 mm can be placed in a single layer, with greater depths achieved by placing successive layers. Consult manufacturer for details.
- BS 7533-101 recommends a minimum of 40 mm.

High performance, pre-blended, ready to use bedding mortar to BS7533-101:2021 Type 25 and Type 35

tuffbed is formulated for use as the laying course (bedding) for bound construction (rigid) pavements composed of natural stone, concrete or clay paving units subject to pedestrian, through to heavy categories of trafficking. This product is pre-blended for convenience when working space is limited and for smaller commercial or domestic scale projects.

Structure is vital for 'High Performance'

To meet all the performance requirements of BS7533-101:2021, something few proprietary bedding mortars achieve, Steintec takes a scientific approach to selecting and grading the aggregates for its bedding mortars. These are close-graded for hardness and angularity and the ability to interlock naturally giving 'tuffbed' its inherent strength and levels of permeability and resistance to capillary rise demanded by BS7533-101:2021 Table 9.



Scan or click for more information on NBS Source

tuffbond

Lexicon Tower, London



High Performance Bonding & Priming Mortar



Lexicon Tower, London



tuffbond

High Performance Bonding and Priming Mortar.

Use when a permanent enhanced bond is required between the paving units & bedding mortar and between the bedding mortar & concrete pavement base.



Features and Benefits

- A 2–3 mm thick coat of tuffbond, is applied for a permanent enhanced bond of 2 N/mm^2 between the bedding mortar and natural stone or concrete paving elements (flags, slabs, blocks or setts).
- Also used to enhance the adhesion between bedding mortar and supporting concrete structures/ concrete road base, where present, resulting in a highly durable pavement with high resistance to mechanical shear forces and thermal stresses.
- Completely polymer and resin free.

A high-performance bonding and priming mortar, formulated for use in modular pavement bound construction to meet the specific requirements of BS7533-101:2021 section 5.4.2.

It is used with tuffbed or tuffbed 2-Pack bedding mortars and tufftop jointing mortar. Consult Steintec for further details.



Scan or click for more information on NBS Source

tufftop



Leicester Square, London



High Performance type 40, Optimal Viscosity Jointing Mortar



Leicester Square, London



tufftop

High Performance type 40, Optimal Viscosity Jointing Mortar.

Applied as a slurry grout to complete the jointing process in bound pavement construction.



N.B. colours are indicative only



[Click image to watch demonstration](#)

Features and Benefits

- Meets or exceeds the performance requirements of BS7533-101:2021, Table 12 Type 25 and Type 40 jointing mortars.
- Optimal viscosity providing excellent workability at application, reducing water usage while ensuring high performance characteristics are maintained.
- Self-compacting characteristics provide tufftop with the ability to penetrate and fill the most irregular voids and joints down to 3mm in width.
- Non-staining, polymer and resin free.
- Elastic modulus is optimised to continually absorb thermal and dynamic stresses inherent during the life of a modular pavement, resulting in exceptional durability.
- Declaration of Performance EN13813-2002, CT C45 F6 B1.5 A15.

A market leading high performance type 40 self-compacting, free flowing, slurry grout applied mortar, meeting or exceeding the requirements of BS7533-101:2021 Table 12.

Steintec tufftop Optimal Viscosity Mortar is applied as a self-compacting, smooth flowing slurry grout.

tufftop is formulated for use in bound (rigid) construction modular pavements constructed in natural stone, concrete or clay paving elements, subjected to pedestrian use through to the highest levels of trafficking.

tufftop is supplied as a pre-mixed dry product packed in moisture resistant 25kg bags.



Scan or click for more information on NBS Source

tuffflow

South Central Plaza, Bromley

Unique Fully Permeable Bound SuDS Jointing Mortar



South Central Plaza, Bromley



tuffflow

Unique Fully Permeable Bound SuDS Jointing Mortar.

Use tuffflow as the fully permeable jointing mortar in bound SuDS pavement construction.



[Click image to view permeability demonstration](#)

Features and Benefits

- Joints constructed in tuffflow can be cleaned using modern pavement cleaning equipment (jet wash, pavement sweeper) without detriment to structure and permeability.
- Joints are fully stable and require no structural maintenance or 'topping up' during the service life of the pavement.
- Aesthetics: 'tuffflow' allows the designer scope to explore a wider palette of paving unit types unlimited by the restrictive generic appearance of unbound concrete block systems laid herringbone bond.
- Bound permeable pavements can be constructed in natural stone or concrete units in a variety of sizes and proportions with joints ranging from 10-20mm width.
- Completely free from polymers and resin additives.

Steintec tuffflow is a fully permeable jointing mortar used as part of a system of specialist mortars for the construction of SuDS permeable bound construction pavements. tuffflow is used where Steintec tuffbed 2-pack (SuDS) Permeable Bedding Mortar is used as the laying course and tuffbond Priming mortar is used to provide the necessary level of bonding.

Permeable pavements should be designed in accordance with the current edition of the CIRIA SuDS Manual relating to factors such as rainfall, catchment, infiltration and flow rates, attenuation strategy etc.

Steintec recommend following the guidance in BS7533-101:2021 for the structural requirements of a bound construction pavement.

'tuffflow' is only available in dark grey, because the aggregate content is dark grey, the surface of which can become exposed (safely) over time from vehicular and pedestrian use.



Scan or click for more information on NBS Source

tuffgrit

Private Driveway, Beaconsfield

High-Performance Permeable Laying Course and Jointing Aggregate



Private Driveway, Beaconsfield



tuffgrit

High-Performance Permeable Laying Course and Jointing Aggregate.

Use as the laying course for unbound non permeable pavements and the laying course and jointing aggregate for unbound SuDS permeable pavements.



Features and Benefits

- Suitable for fully permeable (SuDS) and non-permeable unbound pavements
- 2-6 mm natural hard angular aggregate with enhanced particle interlock
- Available in 25kg bags or bulk bags
- Highly durable
- Ideal for unbound natural stone sett pavements including the highest traffic categories
- As described in EN 13242
- Meets the requirements of BS 7533-101:2021, Section 5.3.4 and Table 8.

Steinec tuffgrit is a crushed igneous rock aggregate suitable for use as the laying course material for conventional unbound modular pavements and as the laying course and jointing material in SuDS permeable unbound modular pavements.

'tuffgrit' is blended for optimum granular interlock, limiting particle migration and greatly extending the durability of unbound/flexible pavements

When tuffgrit is specified as part of a SuDS permeable unbound pavement, designers should refer to the latest edition of the CIRIA SuDS manual, paying attention to factors such as rainfall, catchment, infiltration and attenuation strategy etc.



Scan or click for more information on NBS Source

tuffset G

King's Cross, London



Specialist Rapid Mortar



Sidcup High Street



tuffset G

Specialist Rapid Mortar.

Use to reinstate and repair of jointing, bonding and bedding in bound construction pavements and where new pavement construction is time limited.



[Click image to watch demonstration](#)

Features and Benefits

- Ready for heavy traffic within 3 hours.
- 30-70 mm depth when used as binder in combination with tuffgrit to form a bedding mortar. BS 7533-101 recommends a minimum of 40 mm.
- Multi-purpose: bedding, priming, jointing, emergency repairs & filling around gully and manhole frames in carriageways.
- Available in three colours.
- Free of chemical admixtures, polymers and resins.
- Exceeds all current BS 7533 requirements for bedding, bonding and jointing
- Extensive range of applications: contact Steintec for more details

A specialist multi-purpose paving mortar, tuffset G is a high performance hydraulic mortar with rapid strength gain. Capable of being subjected to heavy trafficking in three hours or less.

tuffset G is a versatile product that can be used effectively as bedding, primer and grouting, making it ideal for emergency repairs to modular paving, concrete and ironworks: in short it can be used to reinstate and repair jointing, bonding and bedding in bound construction pavements and for new pavement construction where time is limited.



Scan or click for more information on NBS Source

tuffset 60





Orpington High Street, London



tuffset 60

Sixty Minute Cure Manhole-Levelling & Rapid Repair Mortar.

Use for the placement, levelling and repair of ironworks in the carriageway and other applications.



Features and Benefits

- Use as a rapid-setting superior alternative to traditional sand and cement mortars, offering a single product, durable solution for emergency works and night repairs under poor lighting conditions.
- Frost resistant and slightly elastic characteristics make it less brittle and more durable than general sand:cement mixtures.
- Completely free of chemical admixtures, polymers or resins
- tuffset G can be used as a highly resilient fill around ironworks once they've been placed on a bed of tuffset 60. Contact Steintec for further details.

tuffset 60 is a revolutionary high performance, all natural hydraulic mortar, designed specifically for the placement and repair of ironworks -- especially in locations subject to constant heavy vehicle trafficking. Fast setting (but NOT fast curing) slightly elastic and less brittle than sand and cement mixtures, its superior characteristics when combined as a system with tuffbau's tuffset G achieve full conformity with the following: DMRB HD27/04 3.11 (ironwork within 2 hours), EN 1504-3 compliant and CE marked (repair concrete), BS7533 fully compliant (paving mortar).

The exceptional capabilities of tuffset 60 make it perfectly suited to emergency works and night repairs under poor lighting. 'tuffset 60' is also resistant to frost, free from anti-freezing chemicals, admixtures, polymers, resin binders, is easy to clean with water (while still in a workable state) and leaves no lasting stains.



04

Technical
Information



**Design, Installation
& Sustainability**



Design and Installation

Design

Modular pavement design is a broad subject with many complexities and issues to challenge the designer. BS7533-101:2021 is the industry standard providing guidance for the design and specification of modular pavements in clay, concrete and natural stone units.

This page highlights the principal considerations to be addressed by the designer as dictated by the project.

1 Traffic Category:

Establishing the degree and type of trafficking the pavement must support is fundamental to modular pavement design. When surface features such as ramps, traffic tables and rumble strips are included, an accurate assessment of the localised loading and stresses generated is essential. Typically, this is underestimated. Traffic categories 1-9 are set out in BS7533-101 Tables 2a and 2b, with 1 being the lightest use and 9 the heaviest use: 'developments used by high numbers of commercial vehicles'.

2 Type of Paving Element:

These are the main types of paving units with their relevant British Standard for manufacture/production:

- Flags are concrete units manufactured to BS 1339.
- Blocks are concrete units manufactured to BS1338.
- Slabs are natural stone units produced to BS EN 1341.
- Setts are natural stone units produced to BS EN 1342.
- Clay Pavers are fired clay units manufactured to BS EN 1344.

In pavement design there are limits to what is possible with each particular type of unit. The BS7533-101 provides detailed guidance on the performance limitations to be observed.

3 Type of Surface Construction; Bound A, Bound B or Unbound:

Steintec produce mortars and aggregates for bedding, jointing and bonding use in all three construction types. The BS7533-101 provides detailed guidance for the choice and use of materials in the three forms of construction, see typical diagram for each on pages 46 and 47.

As well as factors such as aesthetics, design life requirement and cost. it's important to remember that accurate assessment of trafficking capability is key. Stone paving performs perfectly well under traffic loading upwards of 1,000 Standard Axles per Day, but it should be noted that pavements supporting more than 200 Standard Axles per Day (Traffic category 7-9) need specialist design input and we're happy to assist.

4 Type of 'Cleaning Regime' Employed:

It comes as a surprise to many, that cleaning regimes fundamentally affect the choice of construction method. Where a vacuum sweeping machine however small, or a high-pressure water jet cleaning process is to be used, the only method of construction compatible with this regime is bound surface construction using mortar bedding and jointing.

5 Supporting Base Layer for the Surface Construction:

The three types of supporting layer are:

- **Unbound granular Sub-Base:** this is flexible and plastic. Applicable to 'Bound A' and unbound construction.
- **Bitumen Bound Roadbase:** this is also flexible and plastic but stiffer than an unbound base and applicable to 'Bound A' construction.
- **Concrete Roadbase:** this is rigid and may be unreinforced or reinforced and applicable to 'Bound B' construction.

6 Detailing:

Good detailing in design is vital to a successful outcome. The following require particular attention:

- **Movement joints:** a strategy for the positioning and selection of the right kind of movement joint is needed. Not an exact science, requiring some experience and knowledge. Steintec's technical team can help with this.
- **Isolation joints:** often overlooked, are required as part of the movement joint strategy.
- **Edge restraint:** robust competent restraint is vital to structural integrity of bound and unbound pavements.
- **Sub-surface drainage:** nothing to do with SuDS but BS7533-101 requires the laying course to be free draining to prevent accumulation of moisture in the pavement structure. This is one of the most common causes of premature failure and the design must include a means by which accumulating moisture can easily escape the pavement structure. Included at design stage this is an easy and economical feature to provide.

7 Installation:

Installation, materials and workmanship should be in accordance with BS 7533-102:2025 'Installation of pavements using modular paving units – Code of practice'

More technical notes addressing a range of related issues are available on the Steintec website. These are added to and updated to reflect industry developments, emerging best practice and important changes to the relevant British Standards.



Sustainability

Sustainability has been at the heart of Steintec's product research and development long before sustainability became a topic of such importance.

All Steintec products have been designed to deliver a careful balance of high performance and effective use of raw materials. Optimal use of high-performance products is key to delivery of structurally competent and durable pavements. We established many years ago that the most expensive mistake for the pavement designer and the environment is premature failure of a project. The carbon expenditure is more than doubled when a pavement fails to achieve design life. Drawing on extensive experience and continual research and development we have devised a five stage strategy of 'carbon reducing actions' that designers, specifiers and installers can employ one by one or in combination to make reductions in CO2 emissions and waste.

Use the links below to see each 'carbon-reducing action' in full;

- **'Carbon-reducing action' 1**
Product design and development.
- **'Carbon-reducing action' 2**
Just in time, logistics for source and delivery.
- **'Carbon-reducing action' 3**
Innovative construction and on-site working methods.
- **'Carbon-reducing action' 4**
Insistence on good/best practice in design and specification.
- **'Carbon-reducing action' 5**
Putting our products into context with green schemes such as BREEAM



The background features a photograph of a large, multi-story stone building with many windows, possibly a university or government building. The image is partially covered by a large green diagonal overlay that starts from the top left and goes towards the bottom right. Overlaid on this green area is the large white number '05'.

05

Product Data



Product Data and Typical Details



Product Data

	tuffbed 2-pack	tuffbed	tuffbond
Usage	Bedding / Laying Course	Bedding / Laying Course	Bonding / Priming
Characteristics	Two part product; binder and tuffgrit aggregate	Pre-measured and pre-blended, dried aggregate and binder	Bagged, dry, pre-mixed
Colour	Grey	Grey	Grey
Packaging	25 kg Bag	25 kg Bag	25 kg Bag
Bed Depth	≥ 20 mm (40 mm recommended)	10-70 mm	
Joint Width			
Typical Water Used	7 litres per 125 kg batch	3 litres per 25 kg	8 litres per 25 kg
Typical consumption / coverage	30 mm: 60 kg/m ² 40 mm: 80 kg/m ² 50 mm: 100 kg/m ²	25 mm: 55 kg/m ² 40 mm: 88 kg/m ² 50 mm: 110 kg/m ²	1.5 kg/m ² per 2 mm layer
Packages per Pallet		40 or 48	40 or 48
Packages per Pallet - Binder	40		
Packages per Pallet - Aggregate	40		
Pallet weight	1,030 kg inc. pallet	1,030 or 1,230 kg inc. pallet	1,030 or 1,230 kg inc. pallet
Set Time			
Working Time	40 min at 10°C 30 min at 20°C	40 min at 10°C 30 min at 20°C	30 min at 20°C
Working Temperature	≥ 2°C	≥ 2°C	≥ 2°C
Compressive strength (20°C)	14 days: ≥ 25 MPa 28 days: ≥ 35 MPa	14 days: 25 MPa 28 days: 35 MPa	
Flexural Strength	≥ 7 MPa		
Adhesion Strength	≥ 2 MPa (with tuffbond)		≥ 2 MPa
Permeability	> 5.5 x 10 ⁻⁴ m/s	≥ 5 x 10 ⁻⁵ m/s	
Capillary Rise	< 20 mm	< 20 mm	
Modulus of Elasticity	(18,000 ± 3,500) MPa	(18,000 ± 3,500) MPa	
Shrinkage	≤ 0.15%	≤ 0.15%	-
Storage Life	2 years from manufacture date	2 years from manufacture date	2 years from manufacture date
NBS Sections <i>(full breakdown pg 44)</i>	M10, Q24, Q25	M10, Q24, Q25	Q24, Q25
Compliance	BS 7533-101:2021	BS 7533-101:2021	BS 7533-101:2021
Uniclass 2015	Pr 20 31 53 61 Paving Laying Course Mortars	Pr 20 31 53 61 Paving Laying Course Mortars	Pr 20 31 53 62 Paving unit priming slurry mortars
Warranty Description	We warrant that 'product name' is produced to the stated performance standards. On-site testing is recommended to ensure external factors do not compromise product performance.		
Technical Data Sheet	tuffbed 2-pack (link)	tuffbed (link)	tuffbond (link)
NBS Source Link	tuffbed 2-pack (link)	tuffbed (link)	tuffbond (link)

tufftop	tuffflow	tuffset G	tuffset 60
Jointing	Permeable jointing	Bedding, Bonding & Jointing	Specialist bedding
Coloured pigments, unaffected by ultraviolet (UV), slurry grout	Two part product; binder and tuffgrit aggregate	Two part product; binder and tuffgrit aggregate (bedding)	Sixty minute cure manhole-leveling & rapid repair mortar
Beige, Natural Grey, Mid Grey & Dark Grey	Dark Grey	Natural Grey, Mid Grey & Dark Grey	Grey
25 kg Bag	24 kg bag (3 x 8kg sachets)	25 kg Bag	25 kg Bag 10 - 50 mm
≥ 3 mm	10 - 20 mm	≥ 1 mm	
4 litres per 25 kg	1 litre per 33 kg mix (8kg sachet + 25kg aggregate)	Varies depending on use	3 litres per 25 kg
www.steintec.co.uk/calculator/	www.steintec.co.uk/calculator/	Varies depending on use	40 mm: 90 kg/m ²
40 or 48		40 or 48	40 or 48
	48		
	40		
1,030 or 1,230 kg inc. pallet	1,182 kg inc. pallet (binder) 1,030 kg inc. pallet (aggregate)	1,030 or 1,230 kg inc. pallet	1,030 or 1,030 kg inc. pallet
24 hours		3 hours	1 hour
30 min at 20°C	30 min at 20°C	15 - 30 min at 20°C	30 min at 20°C
≥ 2°C	≥ 2°C	≥ -2 °C	≥ 2°C
14 days: 30 MPa 28 days: 45 MPa	28 days: ~25 MPa	As bedding; 1:1 with tuffgrit; 70 MPa 1:2 with tuffgrit; 40 MPa As bonding; 58 MPa As jointing; 58 MPa	1 hour: ~25 MPa 3 hours: ~30 MPa 1 day: ~40 MPa
≥ 6 MPa		3 hours: ~4 MPa (1:1 mix) 1 day: ~6 MPa (1:1 mix)	
1.5 MPa		3 MPa	
	> 5.5 x 10 ⁻⁴ m/s		
(20,000 ± 4,000) MPa		(20,000 ± 4,000) MPa	
≤ 0.15%	≤ 0.15%	≤ 0.15%	≤ 0.09%
2 years from manufacture date	2 years from manufacture date	2 years from manufacture date	2 years from manufacture date
Q24, Q25	Q24	P31, Q24, Q25, R12	P31, R12
BS7533-101:2021	BS 7533-101:2021	BS 7533-101:2021 BS EN 1339 annex D. DMRB HD27/04 3.11	BS 7533-101:2021 BS EN 1339 annex D.
Pr 20 31 53 60 Paving Jointing Mortars	Pr_20_31_53_60 Paving jointing mortars	PR 20 31 53 61 Paving laying course mortars PR 20 31 53 60 Paving jointing mortars	Pr 20 31 53 61 Paving laying course mortar

We warrant that 'product name' is produced to the stated performance standards.
On-site testing is recommended to ensure external factors do not compromise product performance.

tufftop (link)	tuffflow (link)	tuffset G (link)	tuffset 60 (link)
tufftop (link)	tuffflow (link)	tuffset G (link)	tuffset 60 (link)

Product Data

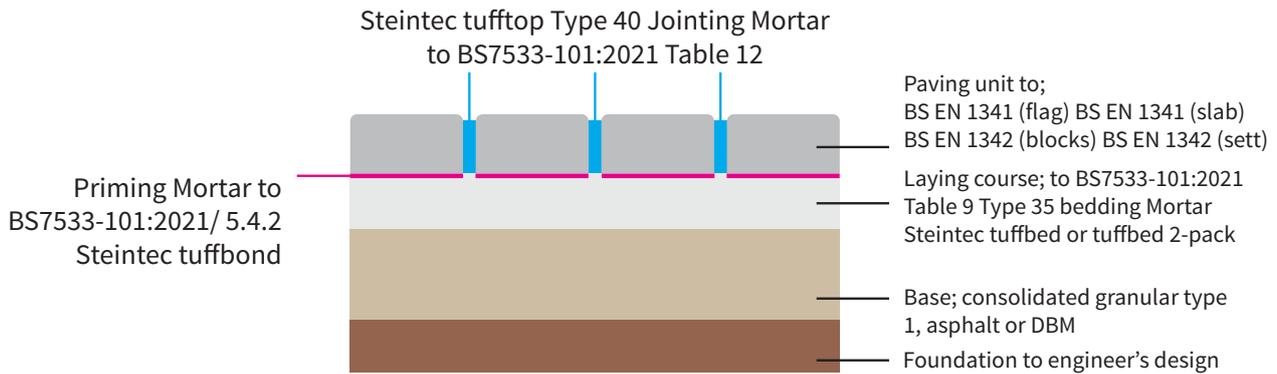
Product NBS Common Arrangement of Work Sections (CAWS)

	tuffbed 2-pack	tuffbed	tuffgrit	tuffbond	tufftop	tuffflow	tuffset G	tuffset 60
M10/120 Fine concrete levelling screeds	X	X						
M10/130 Proprietary quick drying levelling screeds	X	X						
M10/180 Concrete wearing screeds (granolithic)	X	X						
M10/195 Proprietary screeds to BS EN 13813	X	X						
M10/7 Proprietary quick drying levelling screeds	X	X						
P31/730 Installing access covers/ gratings and frames							X	X
Q24/10 Conventional concrete block paving	X	X	X	X	X		X	
Q24/12 Permeable concrete block paving			X			X		
Q24/15 Conventional clay paver paving			X	X	X			
Q24/17 Permeable clay paver paving			X			X		
Q24/30 Mortar bedded	X	X			X		X	
Q24/112 Conventional concrete block paving with bound base	X	X		X	X		X	
Q24/113 Conventional concrete block paving overlay			X	X				
Q24/115 Permeable concrete block paving – total infiltration			X			X		
Q24/117 Permeable concrete block paving – partial infiltration			X			X		
Q24/119 Permeable concrete block paving – no infiltration			X			X		
Q24/120 Conventional clay paver paving			X	X	X			
Q24/122 Conventional clay paver paving with bound base	X	X		X	X		X	
Q24/124 Permeable clay paver paving – total infiltration			X			X		
Q24/126 Permeable clay paver paving – partial infiltration			X			X		
Q24/128 Permeable clay paver paving – no infiltration			X			X		
Q24/130 Natural stone sett paving	X	X	X	X	X		X	
Q24/132 Natural stone sett paving with bound base	X	X		X	X		X	
Q24/133 Natural stone sett paving overlay	X	X	X	X	X		X	
Q24/385 Mortar bedded	X	X					X	

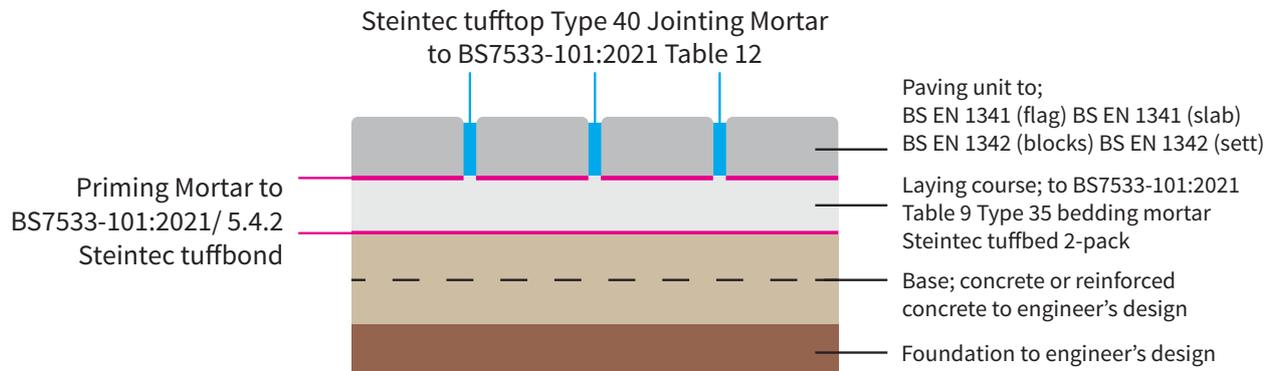
	tuffbed 2-pack	tuffbed	tuffgrit	tuffbond	tufftop	tuffflow	tuffset G	tuffset 60
Q25/26 Natural stone slab paving system	X	X	X	X	X			
Q25/31 Concrete flag paving system	X	X	X	X	X			
Q25/110 Natural stone slab paving system	X	X	X	X	X		X	
Q25/115 Natural stone slab paving overlay system	X	X	X	X	X		X	
Q25/120 Concrete flag paving system	X	X	X	X	X		X	
Q25/125 Concrete flag paving overlay system	X	X	X	X	X		X	
Q25/130 Rigid brick paving system	X	X		X	X		X	
Q25/135 Rigid brick paving overlay system	X	X		X	X		X	
Q25/140 Natural stone sett paving system	X	X	X	X	X		X	
Q25/145 Natural stone sett overlay paving system	X	X	X	X	X		X	
Q25/150 Concrete sett paving system	X	X	X	X	X		X	
Q25/155 Concrete sett paving overlay system	X	X	X	X	X		X	
Q25/160 Natural stone cobble paving system	X	X	X	X	X		X	
Q25/165 Natural stone cobble overlay paving system	X	X	X	X	X		X	
Q25/375 Sand/ Fine aggregate for site mixed mortar								
Q25/390 Sand/ fine aggregate for unbound laying course and jointing of concrete flag paving								
Q25/420 Sand/ fine aggregate for laying course of concrete sett paving								
Q25/425 Fine aggregate for jointing concrete sett paving								
Q25/435 Primer for underside of flags and slabs				X				
Q25/440 Ready-mixed mortar					X			
R12/58 Installation of access covers and frames							X	X
R12/773 Installing access covers and frames							X	X

Typical Details (information)

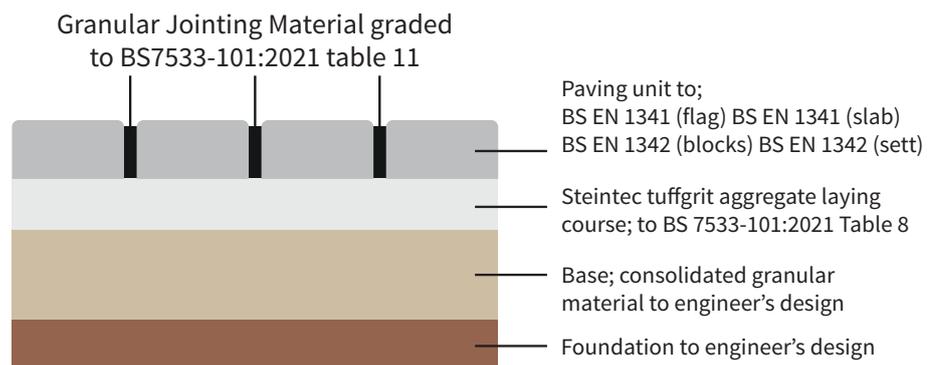
Bound system A pavement construction and Steintec mortars



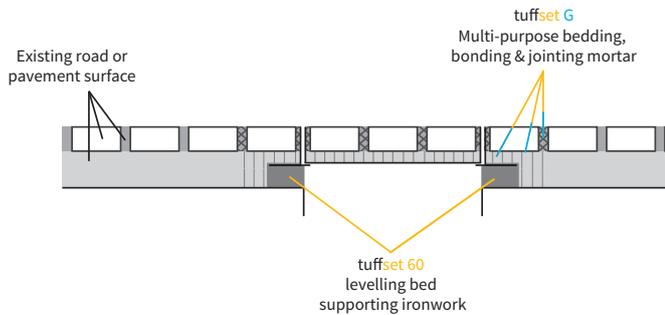
Bound system B pavement construction and Steintec mortars



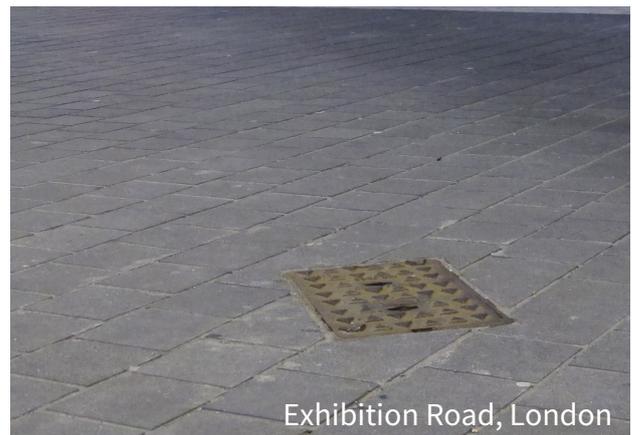
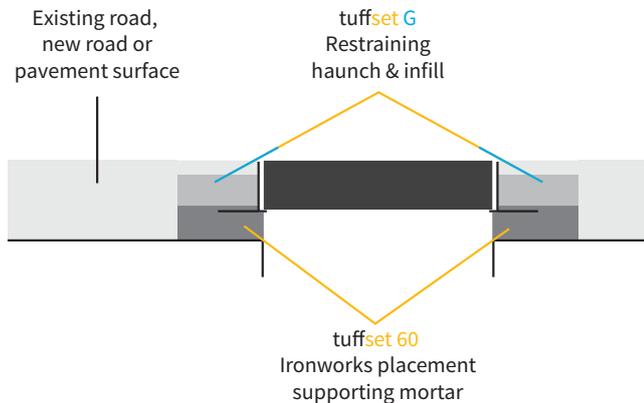
Unbound pavement construction and Steintec tuffgrit



Recessed cover in a paved area



Standard Ironworks cover in a carriageway



The typical details above are for general reference and product context information only.

BS7533-101:2010 table 9, Type 35 bedding mortar

Min Compressive strength: 35 MPa
 Min Flexural strength: 4.5 MPa
 Min Modulus of elasticity: (18,000 + 3,500) MPa
 Max shrinkage: not greater than 0.09%
 Permeability: $\geq 1 \times 10^{-4}$ m/s

NB, laying course maximum permissible capillary rise: 20mm to Annex C.
 tuffbed 2-Pack is a Type 35 bedding mortar and meets all of the above requirements.

BS 7533-101:2021 table 12, Type 40 jointing mortar

Min Compressive strength: 40 MPa
 Min Flexural strength: 6 MPa
 Min Adhesive strength: 1.5 MPa
 Min Modulus of elasticity: (20,000 + 4,000) MPa
 Min density: 2 000 kg/m³
 Max shrinkage: not greater than 0.10%
 Frost/Salt resistance class: ≤ 1 500g/m²

tufftop is a Type 40 jointing mortar and meets all of the above requirements.

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