



Asphalt

Innovation keeps us on top

heidelbergmaterials.co.uk

Tuffpave®

Technical data sheet

Tuffpave® is an approved thin surface course system (TSCS) produced in accordance with the Specification for Highway Works (SHW) 942. Tuffpave was developed for motorways and other major highways and can be laid by any licensed laying contractor.

Tuffpave uses high quality, high polished stone value (PSV) aggregates and our specially developed polymer modified bitumen (PMB). Tuffpave is tough on noise, skid resistance and wet weather spray with a texture that is retained throughout its service life. Tuffpave is also tough enough to stand up to heavy traffic yet provide an ultra-smooth ride. Tuffpave is laid by licensed contractors who have gone through an approval process with Heidelberg Materials. Tuffpave comes with a 5-year guarantee underwritten by the contractor.

Tuffpave can also be produced using Heidelberg Materials' era 140 warm mix asphalt process, meeting the requirements of current National Highways major network specifications.

Installation

Installation by licensed laying contractor in line with Heidelberg Materials own installation manual in accordance with SHW Clause 942.

Benefits

- 5-year performance guarantee
- Excellent resistance to deformation
- Enhanced ride quality
- Reduced noise
- Excellent spray reduction
- Reduced CO₂ when supplied as era 140
- 100% recyclable

Available with the following options:

era®/CleanAir®/CarbonLock®/AgeLast®/RAP

Use this product for

- Highways/motorways
- Major projects
- Major local authority networks

Tuffpave technical data

Coarse aggregate	
Los Angeles abrasion value	30 max
Aggregate abrasion value	As specified in SHW Clause 942 (Appendix 7.1)
Flakiness index	20 max (6mm 30 max)
Nominal sizes	6mm; 10mm; 14mm
Binder	High performance polymer modified bitumen (PMB)
Layer thickness. Details of constituent quality and layer thickness shown below	
6mm nominal size	20 - 30mm
10mm nominal size	25 - 50mm
14mm nominal size	35 - 50mm
Surface texture (on installation)	
10mm medium texture	1.1 - 1.6 mm
14mm medium texture	1.3 - 1.8 mm
	(All NH Clause 942 Level 3)
Road and laboratory test results	
Torque bond	Typical figures +800 KPa
Noise reduction	NH Clause 942

Typical performance figures

Material property	Test specification	Typical result
*Design void content	BS EN 12697-6	≤ Vmax 5.0%
Water sensitivity	BS EN 12697-12 Method A (ITSR) BS EN 12697-23	≥ 80%
RTPD (wheel tracking)	BS EN 12697-22 Procedure B WTS in Air	≤ 0.8mm/10 ³

*Where specified in appendix 7/1.

Please see asphalt product matrix for further information or contact technical:
northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com



**SKID
RESISTANCE**



**RESISTANCE TO
DEFORMATION**



**ENHANCED
RIDE QUALITY**



**NOISE
REDUCTION**



**SPRAY
REDUCTION**



**REDUCED
CO₂**



**INCLUDES
RECYCLED CONTENT**

Duralayer Multi®

Technical data sheet

Duralayer Multi® is a dense material design for single layer applications. It is suited to a variety of asphalt surfacing applications where a low textured and deformation resistant one layer treatment is required.

Duralayer Multi was designed following a request from a local authority for a cost-effective, single layer solution. It utilises locally sourced aggregates and is suitable for a variety of applications including major roads, rural roads, housing estates, car parks, caravan parks and trench reinstatements.

The product's unique design creates a low surface texture and controlled low air voids. This resists water ingress, providing a more durable surfacing solution. Duralayer Multi doesn't segregate like traditional materials, making it also ideal for handlay applications.

Duralayer Multi is available in 20mm, 14mm, 10mm and 6mm nominal sizes and is laid using conventional paving equipment in line with BS 594987.

Duralayer Multi+

Utilises the same unique design as Duralayer Multi and provides enhanced fuel resistance and stiffness.

Benefits

- Single layer installation
- Less disruption through quicker installation
- Increased durability through low voids content
- Low design void content assists compliance with SROH requirements
- Prevents water ingress
- Resistance to deformation
- Sustainable product
- Duralayer Multi+ has fuel resisting properties
- 100% recyclable

**Also available in the following options:
era®/CleanAir®/CarbonLock®/RAP**

Use this product for

- All classifications of roads
- Housing estates
- Car and caravan parks
- Footpaths
- Trenches

Duralayer Multi®

Technical data sheet

Typical performance figures

*Typical value for surface texture.

Material property	Test specification	Typical result
Design void content	BS EN 12697-6	$\leq V_{max}$ 5.0%
Water sensitivity	BS EN 12697-12 Method A (ITSR) BS EN 12697-23	$\geq 80\%$
RTPD (wheel tracking)	BS EN 12697-22 Procedure B WTS in Air	$\leq 1.0\text{mm}/10^3$ (40/60)

Layer thickness

Details of constituent quality and layer thickness shown below:

- 6mm nominal size 30 – 60mm
- 10mm nominal size 40 – 80mm
- 14mm nominal size 50 – 100mm
- 20mm nominal size 60 – 150mm

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com



**PREVENTS
WATER INGRESS**



**FATIGUE
RESISTANT**



**WHEEL RUTTING
RESISTANCE**



**REDUCED
CO₂**



**ENHANCED
RIDE QUALITY**



**INCLUDES
RECYCLED CONTENT**

Duralayer-Path®

Technical data sheet

Heidelberg Materials' Duralayer-Path® is designed to replace conventional two-layer construction for footway and cycleway applications.

Duralayer-Path is a close textured single layer application which is suited to use on footways and cycleways where a low textured and deformation resistant one-layer treatment is required. With its close textured finish, Duralayer-Path offers lower rolling resistance for improved ride quality.

It utilises locally available aggregates to reduce the impact of carbon, while providing a low surface texture and low air voids. This results in material that doesn't segregate like traditional binder course materials, therefore protecting lower layers from water ingress.

Duralayer-Path is available in 6mm, 10mm and 14mm sizes and is laid using conventional paving equipment in line with BS 594987.

Duralayer-Path+

As per Duralayer-Path but also provides enhanced fuel resistance.

Layer thickness

Details of constituent quality and layer thickness shown below:

- 6mm nominal size 30 – 60mm
- 10mm nominal size 40 – 80mm
- 14mm nominal size 50 – 100mm

Also available with the following options:
era®/CleanAir®/CarbonLock®/RAP

Use this product for

- Footways and cycleways

Duralayer-Path®

Technical data sheet

Benefits

The main advantages of Duralayer-Path when used as a maintenance treatment, either as inlay or overlay or as a surface course for new construction, are:

- Time saving single layer application
- Designed to be easy to compact
- Controlled low void content, preventing water ingress and assisting durability
- Improved fatigue and deformation resistance
- Sustainable product available in era 140 and CleanAir versions
- Our Duralayer-Path+ product has enhanced fuel resisting properties



Duralayer Multi technical data

Material property	Test specification	Typical result
Void content (%)	BS EN 12697-6	< 5.0
Water sensitivity (%)	BS EN 12697-12 method B (i/C) BS EN 12697-23	> 80
Indirect tensile stiffness modulus (MPa)	BS EN 12697-26 annex C	> 1800 (40/60)
RTPD (wheel tracking) (mm/103)	BS EN 12697-22 procedure B in WTS air	< 1.0

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com

Duralayer-Velo®

Technical data sheet

Heidelberg Materials' Duralayer-Velo® is designed for use as a single layer solution for cycle tracks, bike and skateboard parks.

Duralayer-Velo is a close textured material which is designed for use on cycle tracks, bike and skateboard parks where a low textured and deformation resistant one-layer treatment is required. Duralayer-Velo offers low rolling resistance for improved ride quality.

Duralayer-Velo utilises locally sourced aggregates to reduce the impact of carbon and the design process achieves a low surface texture and low air voids. This results in material that doesn't segregate like traditional products, giving a smooth, uniform finish to surfaces and protecting lower layers from water ingress.

Duralayer-Velo is available in 4mm, 6mm and 10mm sizes and is typically hand laid and designed to hold on steep slopes/berms where it can be compacted with compactor plates in a single 80mm course. If desired Duralayer-Velo can also be laid using conventional paving equipment in line with BS 594987.

Benefits

- Time saving single layer application
- Designed to be easy to compact
- Controlled low void content, preventing water ingress and assisting durability
- Sustainable product available in era 140® and CleanAir® versions
- Low rolling resistance
- Adhesion to steep sloping berms
- 100% Recyclable

Also available with the following options:

era®/CleanAir®/CarbonLock®/RAP

Duralayer-Velo®

Technical data sheet

Layer thickness

Nominal size	Typical layer thickness
4mm	20 - 50mm
6mm	30 - 60mm
10mm	40 - 80mm

Duralayer-Velo technical data

Material property	Test specification	Typical result
Design void content	BS EN 12697-6	< 4.0
Water sensitivity	BS EN 12697-12 method B (i/C) BS EN 12697-23	> 80
Indirect tensile stiffness modulus	BS EN 12697-26 Annex C	> 1500 (100/150)
RTPD (wheel tracking) (mm/103)	BS EN 12697-22 procedure B in WTS air	< 1.0

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com



**INCLUDES
RECYCLED CONTENT**



**REDUCED
CO₂**



**REDUCING
EMISSIONS**



**ENHANCED
RIDE QUALITY**

Tufflex®

Technical data sheet

High performance materials deliver a multi-layer crack resisting binder/surface course that is particularly suited to overlaying concrete carriageways.

Compared to traditional asphalt surfacing, Tufflex® offers high deformation resistance and a low air void content. The solution also delivers National Highways' highest level of wheel rut resistance, level three. Its design uses specialised bitumens and incorporates best-in-class polymer technology to give it a flexibility that enhances fatigue resistance by absorbing traffic vibration. With its relatively low surface texture and designed low voids content, Tufflex effectively protects the surface it covers from water ingress.

It is available in 6mm, 10mm, 14mm and 20mm nominal sizes and can be laid between 30mm and 150mm thick using a traditional asphalt paver with a 6-10 tonne roller. As a single layer application Tufflex can halve the installation time of traditional materials, reducing disruption to local services and traffic. This can be further enhanced by producing the material using Heidelberg Materials' era 140 warm mix asphalt process. Special attention should be given to compaction at the joints, which should be cut and painted with a bituminous joint paint to maintain resistance to the tensile stresses of turning vehicles. Installation should be in accordance with BS 594987.

Tufflex+

Enhanced fuel resisting properties.

Tufflex XD

Tufflex XD is an extra dense solution with a higher bitumen content for sites with lower texture depth requirements.

Layer thickness

Details of constituent quality and layer thickness shown below:

- 6mm nominal size 30 – 60mm
- 10mm nominal size 40 – 80mm
- 14mm nominal size 50 – 100mm
- 20mm nominal size 60 – 150mm

Available with the following options:

**era®/CleanAir®/CarbonLock®/
AgeLast®/RecyclePlast®/RAP**

Use this product for

- Overlay of concrete carriageways
- Urban roads
- Rural roads
- Industrial areas

Benefits

- A best-in-class flexible polymer modified bitumen (PMB)
- Road engineers will benefit from the option of a multi-layer crack resisting asphalt solution
- Cost-effective over the whole life
- Quick installation – single layer application
- Prevents water ingress
- Highly sustainable and durable, and offers improved performance over conventional asphalt materials
- Increased flexibility



FLEXIBLE



CRACK RESISTANT



PREVENTS WATER INGRESS



ENHANCED DURABILITY



INCREASED STIFFNESS



REDUCED CO₂



ENHANCED RIDE QUALITY

Tufflex technical data

Material property	Test specification	Typical result
Design void content	BS EN 12697-6	≤ Vmax 5.0%
Water sensitivity	BS EN 12697-12 Method B (i/C) BS EN 12697-23	≥ 80%
Binder drainage	BS EN 12697-18 Beaker Method	< 0.3%
Indirect tensile stiffness modulus	BS EN 12697-26 Annex C	> min 1800 mpa
RTPD (wheel tracking)	BS EN 12697-22 Procedure B WTS in Air	≤ 0.8mm/10 ³
Fatigue	BS DD ABF	≥ 100,000 cycles to failure @ 100µstrain

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
 southwestasphaltsales@uk.heidelbergmaterials.com
 southwalesasphaltsales@uk.heidelbergmaterials.com
 southeastasphaltsales@uk.heidelbergmaterials.com

Tufflex® HD/HD+

Technical data sheet

Tufflex® HD/HD+ is a unique asphalt surfacing solution designed for very heavy, slow moving traffic. It contains a polymer modified bitumen (PMB) with an exceptionally high softening point.

PMB is at the heart of a unique solution that offers good protection against damage caused by heavy, slow moving traffic. The product also contains fuel resisting properties.

Tufflex HD/HD+ is available in 6mm, 10mm, 14mm and 20mm nominal sizes and can be laid between 30mm and 150mm thick using a traditional asphalt paver with a 6-10 tonne roller in combination with conventional paving equipment in line with BS 594987. As a single layer application Tufflex HD/HD+ can halve the installation time of traditional material.

Please note: Minimum 7 days' notice required to stock specialist binder.

Benefits

The main advantages of Tufflex HD are:

- Cost-effective over the whole life
- Very high deformation resistance
- Low air void which prevents water ingress
- Fuel resisting properties
- Good workability
- Has a resistance to elevated temperatures from chemical attacks from leachates

- Good load spreading ability from very heavy, slow moving traffic at higher temperatures to prevent wheel track deformation
- Increased stiffness
- 100% recyclable

The main advantages of Tufflex HD+ are:

- Increased stiffness over Tufflex HD
- Enhanced fuel resisting properties

Available with the following options:
era®/CleanAir®/AgeLast®/RecyclePlast®/RAP

Use this product for

- EME2 alternative
- Carriageways
- Farm floors/composting areas
- Industrial areas
- Lorry parks and bus stations

Tufflex® HD/HD+

Technical data sheet

Layer thickness

Details of constituent quality and layer thickness shown below:

- 6mm nominal size 30 – 60mm
- 10mm nominal size 40 – 80mm
- 14mm nominal size 50 – 100mm
- 20mm nominal size 60 – 150mm

Tufflex HD/HD+ technical data

Material property	Test specification	Typical result
Design void content	BS EN 12697-6	≤ Vmax 5.0%
Water sensitivity	BS EN 12697-12 Method B (i/C) BS EN 12697-23	≥ 80%
Binder drainage	BS EN 12697-18 Beaker Method	< 0.3%
Indirect tensile stiffness modulus	BS EN 12697-26 Annex C	> 5,500 MPa
RTPD (wheel tracking)	BS EN 12697-22 Procedure B WTS in Air	≤ 0.8mm/10 ³
Fatigue	BS DD ABF	≥ 100,000 cycles to failure @ 100µstrain

Please see asphalt product matrix for further information or contact technical:

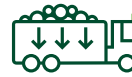
northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com



RESISTANCE TO DEFORMATION



FUEL RESISTING PROPERTIES



ENHANCED DURABILITY



INCREASED STIFFNESS



REDUCED CO₂



INCLUDES RECYCLED CONTENT



ENHANCED RIDE QUALITY

Tufflex® TX

Technical data sheet

Tufflex® TX is a highly flexible, deformation resistant surface course treatment for high-speed roads.

Tufflex TX delivers National Highways highest rating for wheel track deformation – level 3. Tufflex TX uses high quality, high polished stone value (PSV) aggregates and our specially developed polymer modified bitumen (PMB).

Tufflex TX is tough on noise, skid resistance and wet weather spray with a texture that is retained throughout its service life. Tufflex TX is also tough enough to stand up to heavy traffic yet provide an ultra-smooth ride.

Tufflex TX can be laid by any competent contractor in line with BS EN 594987. It is available in 10mm and 14mm nominal sizes and can be laid between 30mm and 80mm thick.

Tufflex TX can also be produced using Heidelberg Materials' era 140 warm mix asphalt process, meeting the requirements of current National Highways major network specifications.

Benefits

- Deformation resistance - level 3
- Enhanced ride quality
- Reduced noise
- Excellent spray reduction
- Reduced CO₂ when supplied as era 140
- 100% recyclable

Available with the following options:

era®/CleanAir®/CarbonLock®/AgeLast®/RAP

Use this product for

- Residential roads
- Local authority networks
- Roundabouts



Tufflex® TX

Technical data sheet

Tufflex TX technical data

Material property	Test specification	Typical result
Nominal sizes		14mm; 10mm
Binder		High performance polymer modified bitumen (PMB)
Layer thickness (recommended)		35mm - 80mm
Surface texture (sand patch, immediately after laying)		0.8 - 1.8mm
Design void content	BS EN 12697-6	V _{min} 1.0% - V _{max} 5.0%
Binder drainage	BS EN 12697-18 Beaker Method	< 0.3%
Water sensitivity	BS EN 12697-12 Method A (ITSR) BS EN 12697-23	≥ 80%
Indirect tensile stiffness modulus	BS EN 12697-26 Annex C	> 1,800 MPa
RTPD (wheel tracking)	BS EN 12697-22 Procedure B WTS in Air	≤ 0.8mm/10 ⁵

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com



**SKID
RESISTANCE**



**RESISTANCE TO
DEFORMATION**



**ENHANCED
RIDE QUALITY**



**NOISE
REDUCTION**



**SPRAY
REDUCTION**



**REDUCED
CO₂**



**INCLUDES
RECYCLED CONTENT**

Tufflex[®] D

Technical data sheet

Developed in line with Transport for Scotland methodology, this low void, high bitumen content stone mastic asphalt (SMA), is ideal for sites where safety and reduced noise are paramount. Tufflex[®] D is a more durable product which provides whole life cost savings.

Compared to traditional asphalt surfacing, Tufflex D offers texture, high deformation resistance and a very low air void content. The solution also delivers National Highways' highest level of wheel rut resistance, level three. Tufflex D's design uses specialised binders and incorporates best-in-class polymer technology. With its optimum surface texture of approximately 1.1mm and designed low voids, it effectively protects the surface it covers from water ingress.

Available in 6mm, 10mm and 14mm nominal sizes, Tufflex D can be laid between 25mm and 50mm thick using conventional asphalt pavers with a 6-10 tonne roller. Installation should be strictly in accordance with BS 594987. Special attention should be given to placement and formation of joints. To enhance early life skid resistance, it is advisable to apply 1-4mm grit or coated grit on the first pass of the roller with a dedicated attached grit box.

Benefits

- A best-in-class flexible polymer modified bitumen (PMB)
- Suitable for any class of road network
- Cost-effective over the whole life
- Quick installation
- Prevents water ingress
- Highly sustainable and durable
- Offers improved performance over conventional asphalt
- 100% recyclable

Use this product for

- Trunk roads
- Urban roads
- Local authority network

Tufflex® D

Technical data sheet

Tufflex D technical data

Material property	Test specification	Typical result
Design void content	BS EN 12697-6	Vmin 1.0% – Vmax 5.0%
Binder drainage	BS EN 12697-18 Beaker Method	< 0.3%
Water sensitivity	BS EN 12697-12 Method A (ITSR) BS EN 12697-23	≥ 80%
RTPD (wheel tracking)	BS EN 12697-22 Procedure B WTS in Air	≤ 0.6mm/10 ³

Available with the following options:

era®/CleanAir®/CarbonLock®/AgeLast®/RecyclePlast®/RAP

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com



RESISTANCE TO DEFORMATION



FLEXIBLE



CRACK RESISTANT



PREVENTS WATER INGRESS



ENHANCED DURABILITY



INCREASED STIFFNESS



REDUCED CO₂



ENHANCED RIDE QUALITY



INCLUDES RECYCLED CONTENT

Tuffgrip®

Technical data sheet

Tuffgrip® is our established thin surface course system (TSCS) and is produced in accordance with the Specification for Highway Works (SHW) 942. It was developed for motorways and other major highways.

Tuffgrip uses high quality, high polished stone value (PSV) aggregates and our specially developed polymer modified bitumen (PMB). Tuffgrip is tough on noise, skid resistance and wet weather spray with a texture that is retained throughout its service life. Tuffgrip is also tough enough to stand up to heavy traffic yet provide an ultra-smooth ride. Tuffgrip is laid by Heidelberg Materials' contracting division and comes with a 5-year guarantee underwritten by the contractor in accordance with SHW Clause 942.

Tuffgrip can also be produced using Heidelberg Materials' era 140 warm mix asphalt process, meeting the requirements of current National Highways major network specifications.

Installation

Installation by Heidelberg Materials.

Benefits

- 5-year performance guarantee
- Excellent resistance to deformation
- Enhanced ride quality
- Reduced noise
- Excellent spray reduction
- Reduced CO₂ when supplied as era 140
- 100% recyclable

Available with the following options:

era®/CleanAir®/CarbonLock®/AgeLast®/RAP

Use this product for

- Highways/motorways
- Major projects
- Major local authority networks



Tuffgrip technical data

Coarse aggregate	
Los Angeles abrasion value	30 max
Aggregate abrasion value	As specified in SHW Clause 942 (Appendix 7.1)
Flakiness index	20 max (6mm 30 max)
Nominal sizes	6mm; 10mm; 14mm
Binder	High performance polymer modified bitumen (PMB)
Layer thickness. Details of constituent quality and layer thickness shown below	
6mm nominal size	20 – 30mm
10mm nominal size	25 – 50mm
14mm nominal size	35 – 50mm
Surface texture (on installation)	
10mm medium texture	1.1 – 1.6mm
14mm medium texture	1.3 – 1.8mm
(All NH Clause 942 Level 3)	
Road and laboratory test results	
Torque bond	Typical figures +800 KPa
Noise reduction	NH Clause 942

Typical performance figures

Material property	Test specification	Typical result
*Design void content	BS EN 12697-6	Vmin 1.0% – Vmax 5.0%
Water sensitivity	BS EN 12697-12 Method A (ITSR) BS EN 12697-23	≥ 80%
RTPD (wheel tracking)	BS EN 12697-22 Procedure B WTS in Air	≤ 1.0mm/10 ³

*Where specified in appendix 7/1.

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
 southwestasphaltsales@uk.heidelbergmaterials.com
 southwalesasphaltsales@uk.heidelbergmaterials.com
 southeastasphaltsales@uk.heidelbergmaterials.com



**SKID
RESISTANCE**



**RESISTANCE TO
DEFORMATION**



**ENHANCED
RIDE QUALITY**



**NOISE
REDUCTION**



**SPRAY
REDUCTION**



**REDUCED
CO₂**



**INCLUDES
RECYCLED CONTENT**

Tuffdrive®

Technical data sheet

Tuffdrive® provides a high-quality surface finish with enhanced resistance against power steering use from private vehicles on residential driveways and parking areas.

Tuffdrive has a unique design employing a specially formulated polymer modified bitumen (PMB) ideal for driveways and car parks where a highly scuff resistance material is required. Tuffdrive's unique design results in a highly durable material that should outlast conventional materials, significantly reducing the whole-life carbon cost to the environment.

Tuffdrive+ offers increased levels of compactability, resistance to power steering and fuel resistance.

Tuffdrive is available in both 10mm and 6mm nominal sizes. We recommend Tuffdrive is laid using conventional paving equipment in line with BS 594987.

Tuffdrive can also be produced using Heidelberg Materials' era 140 warm mix process, reducing CO₂ emissions.

Benefits

- Deformation resistance
- Scuff resistance
- Cost and carbon effective over the whole life
- Reduced CO₂ when supplied as era 140
- 100% recyclable

Also available with the following options:

**era®/CleanAir®/CarbonLock®/
AgeLast®/RecyclePlast®/RAP**

Use this product for

- Driveways
- Car parks
- Housing developments

Tuffdrive®

Technical data sheet

Tuffdrive technical data

Coarse aggregate	
Los Angeles abrasion value	30 max
Aggregate abrasion value	10 max
Flakiness index	20 max (6mm 30 max)
Nominal sizes	6mm; 10mm
Binder	High performance polymer modified bitumen (PMB)
Layer thickness (recommended)	
6mm Tuffdrive®	20mm to 30mm
10mm Tuffdrive®	30mm to 40mm

Road and laboratory test results

Material property	Test specification	Typical result
RTPD (wheel tracking)	BS EN 12697-22 Procedure B WTS in Air	≤ 1.0mm/10 ⁵

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com



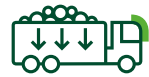
FUEL RESISTING PROPERTIES



RESISTANCE TO DEFORMATION



INCREASED SCUFF RESISTANCE



ENHANCED DURABILITY



REDUCED CO₂



INCLUDES RECYCLED CONTENT

Tuffdrain®

Technical data sheet

Tuffdrain® asphalt has been developed for use in sustainable urban drainage systems (SUDS) to provide excellent drainage and durability. It's an asphalt material developed for use in Sustainable Urban Drainage Systems (SUDS).

The solution works in line with current planning requirements by managing rainfall for a wide range of applications including porous or ground water storage technology.

Tuffdrain helps to prevent localised flooding with its unique design. It utilises a premium polymer modified bitumen (PMB) to provide a durable[#] free-draining solution that out-performs traditional open textured asphalt concrete (AC) materials and the requirements for SUDS systems. Tuffdrain has improved durability through the thick PMB binder film and aggregate matrix interlock.

Installation

Tuffdrain should be laid in accordance with BS 594987 by experienced SUDS installers with attention given to the foundation, drainage characteristics and traffic loading[#].

Maintenance

- Avoid construction and heavy plant using the surface
- Light traffic should avoid static turning with power steering
- The surface should be kept as clean as practicable. Brush or vacuum any: leaves, spillages/site detritus
- Use of power washers is not recommended as debris can be forced into the matrix causing blockages
- Standard road sweepers can be used occasionally but may damage the surface
- During Winter use spreaders/applicators to apply rock salt
- Clear snow with a suitable plastic shovel. If using mechanical means use plastic/rubber buckets or ploughs

Benefits

- Excellent drainage
- Enhanced durability[#]
- Quicker installation
- Increased stiffness
- 100% recyclable

Tuffdrain+

For increased stiffness where a degree of fuel resistance may be required.

Tuffdrain HD

For higher stress areas where the drainage is required in line with higher levels of performance.

Please note: lead in time may be required for Tuffdrain+ and HD versions.

Available with the following options:

era®/CleanAir®/CarbonLock®/ AgeLast®/RecyclePlast®

Use this product for

- SUDS applications
- Sport surfaces
- Footpaths

Tuffdrain technical data

Coarse aggregate	
Los Angeles abrasion value	30 max
Aggregate abrasion value	15 max
Flakiness index	20 max (30 max for 6mm only)
Nominal sizes	6mm; 10mm; 14mm; 20mm
Binder	High performance polymer modified bitumen (PMB)

Road and laboratory test results

Material property	Test specification	Typical result
Binder drainage	BS EN 12697-18 Beaker Method	< 0.3%
Water sensitivity	BS EN 12697-12 Method A (ITSR) BS EN 12697-23	≥ 80%
Indirect tensile stiffness modulus	BS EN 12697-26 Annex C	> 3,000 MPa
RTPD (wheel tracking)	BS EN 12697-22 Procedure B WTS in Air	≤ 1.0mm/10 ³
Hydraulic conductivity	BS DD 229	> 15,000mm/hr (10mm) > 20,000mm/hr (20mm)

#Tuffdrain offers enhanced durability when compared to traditional open textured asphalts. However, before placing an order please review the site compatibility with your local sales/technical team.

For more information on our SUDS range of aggregates (Aggflow) used within the Tuffdrain mix, please contact technical at centralaggregatesales@uk.heidelbergmaterials.com

Additional information can be found in the asphalt product matrix or be contacting technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com



**EXCELLENT
DRAINAGE**



**NOISE
REDUCTION**



**REDUCED
CO₂**



**INCLUDES
RECYCLED CONTENT**

Pre-coated chippings

Technical data sheet

Heidelberg Materials' pre-coated chippings product range includes Clause 943 hot rolled asphalt (HRA) surface course and binder course (performance-related design mixtures).

HRA is a dense, gap graded asphalt designed to be used in a wide range of applications. Pre-coated chippings are highly resistant to polishing and are rolled into, and form part of, an HRA surface course. Heidelberg Materials' offers a range of pre-coated chippings with varying polished stone values (PSV) which vary according to the asphalt plant they are produced at:

- Craig Yr Hesg – 68+ PSV
- Runcorn – 60, 65, 68 PSV
- Bradford – 60 PSV
- Keepersfield – 55, 60, 65, 68 PSV
- Criggion 60, 68 PSV

Benefits

- Use of high quality aggregates in accordance with BS EN 13043
- Availability of coated chippings for surface course when required
- SHW, EN and PD compliant
- Available in bulk and as a packed product.
See: heidelberg-packedproducts.co.uk

Please note: we are able to deliver on a nationwide basis.

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com



**SKID
RESISTANCE**

era[®] 100

Technical data sheet

Our energy-reducing asphalt helps you meet the sustainability targets of today's road building projects.

Its micro-foaming method cuts the level of carbon emissions associated with asphalt production for road laying by up to 50%, while enhancing durability and improving health and safety for contractors.

For greater sustainability, the mix can use up to 50% recycled material during production and it is also 100% recyclable after use.

Benefits

- Faster completion of resurfacing work
- Up to 50% reduction in CO₂ emissions
- Reduction in thermal ageing process
- Enhanced durability
- Includes recycled content
- Improved health and safety
- Available from selected Heidelberg Materials asphalt plants

Also available with the following options:

CleanAir[®]/CarbonLock[®]/AgeLast[®]

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com

Use this product for

- Motorways
- All major roads
- Most asphalt solutions



ENHANCED
DURABILITY



INCLUDES
RECYCLED CONTENT



REDUCED
CO₂

era[®] 140

Technical data sheet

A warm mix asphalt (WMA) solution designed to reduce carbon emissions, improve efficiencies, reduce disruption and improve contractor health and safety.

Heidelberg Materials' era 140[®] WMA incorporates a specialist bitumen that allows asphalt to be produced at a reduced temperature (up to 40 degrees lower) than conventional hot mix asphalt. This uses less energy, helping to cut the CO₂ emissions associated with asphalt production by up to 15 per cent. The lower manufacturing temperature generates less fumes and steam. This improves air quality and visibility during installation and also reduces the risk of burns.

Benefits

- Carbon reduction: typically up to 15% reduction in asphalt production emissions, resulting in an average 2.4kg CO₂e saving per tonne of asphalt, compared with standard hot mix asphalt
- Faster completion of resurfacing work, increasing efficiency and resulting in less disruption for road users
- Reduction in thermal ageing process
- Enhances durability due to reduced oxidisation during manufacture
- Allows recycled content
- Improves health and safety for work force

Also available with the following options:

Cleanair[®]/CarbonLock[®]/AgeLast[®]/Recycleplast[®]

- Can be used to produce the majority of Heidelberg Materials' asphalt products
- 100% recyclable
- Laid using conventional asphalt paving equipment
- Available from Heidelberg Materials' asphalt plants across the country

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com

southwestasphaltsales@uk.heidelbergmaterials.com

southwalesasphaltsales@uk.heidelbergmaterials.com

southeastasphaltsales@uk.heidelbergmaterials.com

Use this product for

- Carbon reduction



ENHANCED
DURABILITY



INCLUDES
RECYCLED CONTENT



REDUCED
CO₂

Durafalt®

Technical data sheet

Durafalt® is our 40/60 penetration grade stone mastic asphalt (SMA) thin surfacing system (TSCS). It is produced in accordance with the Specification for Highway Works (SHW) 941 and was developed for motorways and other major highways.

Durafalt uses high quality, high polished stone value (PSV) aggregates. It provides excellent levels of noise and spray reduction, while yielding high levels of skid resistance with a texture that is retained throughout its service life. Durafalt is also resilient enough to stand up to heavy traffic yet provide an ultra-smooth ride.

Durafalt can also be produced using Heidelberg Materials' era 140 warm mix process, meeting the requirements of current National Highways major network specifications.

Installation is by Heidelberg Materials' contracting division or licensed laying contractors in line with Heidelberg Materials' own installation manual in accordance with SHW Clause 942. Durafalt comes with a 5-year guarantee underwritten by the contractor.

Use this product for

- Highways/motorways
- Major projects
- Major local authority networks

Benefits

- 5-year performance guarantee
- Excellent resistance to deformation
- Enhanced ride quality
- Reduced noise
- Excellent spray reduction
- Reduced CO₂ when supplied as era 140
- 100% recyclable

**Also available with the following options:
era®/CleanAir®/RAP**

Durafalt technical data

Coarse aggregate	
Los Angeles abrasion value	30 max
Aggregate abrasion value	As specified in SHW Clause 942 (Appendix 7.1)
Flakiness index	20 max
Nominal sizes	10mm; 14mm
Binder	High performance polymer modified bitumen (PMB)
Layer thickness. Details of constituent quality and layer thickness shown below	
10mm nominal size	25 – 50mm
14mm nominal size	35 – 50mm
Surface texture (on installation)	
10mm nominal size	1.1 – 1.6mm
14mm nominal size	1.3 – 1.8mm
(All NH Clause 942 Level 3)	
Road and laboratory test results	
Torque bond	Typical figures +800 KPa
Noise reduction	NH Clause 942



**SKID
RESISTANCE**



**RESISTANCE TO
DEFORMATION**



**ENHANCED
RIDE QUALITY**



**NOISE
REDUCTION**



**SPRAY
REDUCTION**



**INCLUDES
RECYCLED CONTENT**

Typical performance figures

Material property	Test specification	Typical result
*Design void content	BS EN 12697-6	Vmin 1.0% – Vmax 5.0%
Water sensitivity	BS EN 12697-12 Method A (ITSR) BS EN 12697-23	≥ 80%
RTPD (wheel tracking)	BS EN 12697-22 Procedure B WTS in Air	≤ 0.6mm/10 ³

*Where specified in appendix 7/1.

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com

Durafalt® HD/HD+

Technical data sheet

Durafalt® HD/HD+ is a unique stone mastic asphalt (SMA) surfacing solution designed for very heavy, slow moving traffic. It contains a polymer modified binder (PMB) with an exceptionally high softening point.

Durafalt HD is a strong and durable surface course (non-clause 942) designed to withstand heavy load traffic.

Durafalt HD+ is a combined solution (non-clause 942) that contains fuel resisting properties and is designed to withstand heavy load traffic. Available in 10mm and 14mm nominal sizes.

Benefits

- Cost-effective
- Texture depth range 1.1mm – 1.8mm
- Durable
- High deformation resistance
- Good noise reduction
- Reduced spray
- Fuel resisting properties
- Good workability
- Enhanced ride quality
- Excellent load spreading ability from very heavy slow moving traffic at higher temperatures to prevent wheel track deformation

Please note: 7 days' notice required to stock specialist binder.

Also available with the following options:

era®/CleanAir®/RAP

Use this product for

- Carriageways
- Major paved areas
- Industrial



RESISTANCE TO
DEFORMATION



NOISE
REDUCTION



SPRAY
REDUCTION



FUEL RESISTING
PROPERTIES



ENHANCED
DURABILITY



REDUCED
CO₂

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com

southwestasphaltsales@uk.heidelbergmaterials.com

southwalesasphaltsales@uk.heidelbergmaterials.com

southeastasphaltsales@uk.heidelbergmaterials.com

Durafalt PMB[®]

Technical data sheet

Durafalt PMB[®] is our premium, polymer modified stone mastic asphalt (SMA) thin surfacing system (TSCS). It is produced in accordance with the Specification for Highway Works (SHW) 942 and was developed for motorways and other major highways.

Durafalt PMB uses high quality, high polished stone value (PSV) aggregates and our specially developed polymer modified bitumen (PMB). Durafalt PMB provides excellent levels of noise and spray reduction, while yielding high levels of skid resistance with a texture that is retained throughout its service life. Durafalt PMB is also tough enough to stand up to heavy traffic yet provide an ultra-smooth ride.

Durafalt PMB can also be produced using Heidelberg Materials' era 140 warm mix process, meeting the requirements of current National Highways major network specifications.

Installation is by Heidelberg Materials' contracting division or licensed laying contractors in line with Heidelberg Materials' own installation manual in accordance with SHW Clause 942. Durafalt PMB comes with a 5-year guarantee underwritten by the contractor.

Use this product for

- Highways/motorways
- Major projects
- Major local authority networks

Benefits

- 5-year performance guarantee
- Enhanced durability
- Excellent resistance to deformation
- Enhanced ride quality
- Reduced noise
- Excellent spray reduction
- Reduced CO₂ when supplied as era 140
- 100% recyclable

Also available with the following options: era 140[®]/CleanAir[®]/RAP

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com

Durafalt PMB®

Technical data sheet

Durafalt PMB technical data

Coarse aggregate	
Los Angeles abrasion value	30 max
Aggregate abrasion value	As specified in SHW Clause 942 (Appendix 7.1)
Flakiness index	20 max
Nominal sizes	10mm; 14mm
Binder	High performance polymer modified bitumen (PMB)
Layer thickness. Details of constituent quality and layer thickness shown below	
10mm nominal size	25 – 50mm
14mm nominal size	35 – 50mm
Surface texture (on installation)	
10mm nominal size	1.1 – 1.6mm
14mm nominal size	1.3 – 1.8mm
(All NH Clause 942 Level 3)	
Road and laboratory test results	
Torque bond	Typical figures +800 KPa
Noise reduction	NH Clause 942

Typical performance figures

Material property	Test specification	Typical result
*Design void content	BS EN 12697-6	Vmin 1.0% – Vmax 5.0%
Water sensitivity	BS EN 12697-12 Method A (ITSR) BS EN 12697-23	≥ 80%
RTPD (wheel tracking)	BS EN 12697-22 Procedure B WTS in Air	≤ 0.6mm/10 ³

*Where specified in appendix 7/1.



**ENHANCED
RIDE QUALITY**



**RESISTANCE TO
DEFORMATION**



**INCLUDES
RECYCLED CONTENT**



**REDUCED
CO₂**



FLEXIBLE



**CRACK
RESISTANT**



**PREVENTS
WATER INGRESS**



**ENHANCED
DURABILITY**



**INCREASED
STIFFNESS**

Durafalt®-fill

Technical data sheet

Durafalt®-fill is a one-part asphalt product for efficient pothole repairs (non-Clause 942) that bonds to existing surfaces.

It is designed to be used in layers from 30mm to 100mm not only to repair potholes, but also to patch anything from driveways to carriageways. It has been specially developed to be easy to use and hard-wearing.

Benefits

- Cost-effective over the whole life
- Deformation resistance
- Increased stiffness
- Reduced wastage
- Longer lasting solution to road repairs than traditional asphalt or concrete
- Improved efficiency

Installation guidelines

Installation in accordance with BS 594987.

Also available with the following options:
era®/CleanAir®/CarbonLock®/RAP

Use this product for

- Pothole repairs
- Road surface patching



**RESISTANCE TO
DEFORMATION**



**INCREASED
STIFFNESS**



**ENHANCED
DURABILITY**

Durafalt-fill technical data

Material property	Test specification	Typical result
Design void content	BS EN 12697-6	< 6%
Binder drainage	BS EN 12697-18 Beaker Method	< 0.3%
Indirect tensile stiffness modulus	BS EN 12697-26 Annex C	> 2,000 MPa
Resistance to permanent deformation @ 60°C (wheel tracking)	BS EN 12697-22 Procedure B WTS in Air	≤ 0.8mm/°10 ³
Layer thickness (recommended)		30mm to 100mm

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com

Duradrive®

Technical data sheet

Duradrive® provides a uniform, high-quality surface finish especially designed to provide enhanced resistance against power steering use from private vehicles on residential driveways and parking areas.

Duradrive has a unique design ideal for driveways and car parks where a highly scuff resistance material is required. Duradrive's unique design results in a highly durable material that should outlast conventional materials, significantly reducing the whole-life carbon cost to the environment.

Duradrive+ offers increased levels of compactability, increased resistance to power steering as well as an increased level of fuel resistance.

Duradrive is available in both 10mm and 6mm nominal sizes. It can be hand laid or laid using conventional paving equipment in line with BS 594987.

Duradrive can also be supplied as era 140 warm mix offering reduced CO₂ emissions.

Use this product for

- Driveways
- Car parks

Benefits

- Deformation resistance
- Scuff resistance
- Reduced CO₂ when supplied as era 140
- 100% recyclable

Also available with the following options:

era®/CleanAir®/CarbonLock®/RAP

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com

southwestasphaltsales@uk.heidelbergmaterials.com

southwalesasphaltsales@uk.heidelbergmaterials.com

southeastasphaltsales@uk.heidelbergmaterials.com



**RESISTANCE TO
DEFORMATION**



**INCREASED
STIFFNESS**



**INCLUDES
RECYCLED CONTENT**



**ENHANCED
DURABILITY**



**REDUCED
CO₂**

Durafalt® D

Technical data sheet

Durafalt® D has a high binder content and lower air voids than traditional stone mastic asphalt (SMA).

The material is designed in line with Transport for Scotland SMA methodology for aggregate grading.

It has minimum binder content to provide optimal texture and skid resistance for enhanced breaking in wet weather conditions.

Durafalt D provides increased durability compared with standard SMA.

Benefits

- Cost-effective over the whole life
- High deformation resistance
- Good noise reduction
- Reduced spray
- Our Durafalt D+ mix has fuel resisting properties
- Good workability
- Enhanced ride quality

Please note: 7 days' notice required to stock specialist binder.

Also available with the following options: era®/CleanAir®/RAP

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com

Use this product for

- Carriageways
- Major paved areas
- Industrial



RESISTANCE TO
DEFORMATION



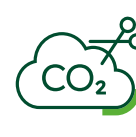
NOISE
REDUCTION



SPRAY
REDUCTION



FUEL RESISTING
PROPERTIES



REDUCED
CO₂

Courtfalt®

Technical data sheet

Courtfalt® is a 6mm free-draining asphalt product designed specifically for tennis courts.

A 6mm free-draining open graded asphalt concrete (AC), is mixed using 100/150 pen grade bitumen. The product must be laid on a porous base layer.

Installation must be carried out by a competent sports surfacing specialist contractor on free-draining base layers.

The surface should be kept as clean as practicable. Brush or vacuum any leaves, spillages / site detritus. Power washers are not recommended as contaminants can be forced into the matrix and cause blockages lower down in the construction.

Courtfalt Binder Course

Offers the same characteristics as Courtfalt but enable a porous binder course to be used. It is available as a 10mm, 14mm or 20mm option.

Use this product for

- Tennis courts

Benefits

- Guaranteed drainage in accordance with LTA guidelines
- Meets SAPCA guidelines
- 100% recyclable

Also available with the following options: era®/CleanAir®/CarbonLock®

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com

southwestasphaltsales@uk.heidelbergmaterials.com

southwalesasphaltsales@uk.heidelbergmaterials.com

southeastasphaltsales@uk.heidelbergmaterials.com



**HEALTH
AND SAFETY**



**EXCELLENT
DRAINAGE**



**INCLUDES
RECYCLED CONTENT**

Courtfalt® Multi

Technical data sheet

Courtfalt® Multi is a 6mm free-draining AC, ideal for multi-use games areas (MUGAs) and sports surfaces.

A free-draining open graded asphalt concrete (AC), which is mixed using paving grade binder and offers improved performance and durability compared to standard open graded AC products. The product is manufactured with a slightly denser grading than the Courtfalt tennis court material.

Installation must be carried out by a competent sports surfacing specialist contractor on free-draining base layers.

The surface should be kept as clean as practicable. Brush or vacuum any leaves, spillages/site detritus. Power washers are not recommended as contaminants can be forced into the matrix and cause blockages lower down in the construction.

Courtfalt Binder Course

Offers the same characteristics as Courtfalt but enable a porous binder course to be used. It is available as a 10mm, 14mm or 20mm option.

Use this product for

- Five a side pitches
- Playgrounds

Benefits

- Guaranteed drainage properties
- Offers improved performance and durability compared with standard open graded AC products
- A range of polished stone values (PSVs) can be provided to enhance slip resistance
- 100% recyclable

Also available with the following options: era®/CleanAir®/CarbonLock®

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com

southwestasphaltsales@uk.heidelbergmaterials.com

southwalesasphaltsales@uk.heidelbergmaterials.com

southeastasphaltsales@uk.heidelbergmaterials.com



**HEALTH
AND SAFETY**



**EXCELLENT
DRAINAGE**



**INCLUDES
RECYCLED CONTENT**

Airfield

Technical data sheet

Airfield asphalts are a unique brand of materials designed to meet the requirements of the UK airfield specifications for runways, aprons and taxi ways. Airfield asphalts are designed using Heidelberg Materials' own high quality hardstone aggregates and specialist bitumens from our supply partners.

Each Airfield asphalt mix goes through a rigorous design process to ensure UK aviation specifications are met.

With the ability to supply from off-site plants, the expensive process of setting up on-site asphalt plants can be avoided. This gives the contractor the potential to deliver schemes to the client at vastly reduced costs. Where site and schemes dictate, Heidelberg Materials also offers mobile plant options.

Heidelberg Materials' suite of Airfield asphalts include BBA (Betons Bitumineux Pour Chaussees Aeronautiques) and Specification 049 SMA.

Benefits

- Can be supplied from off-site plant
- Meets UK aviation specifications up to highest class
- Speed of installation
- Can be laid with conventional paving equipment
- 100% recyclable
- Available from Heidelberg Materials' asphalt plants across the country

Also available with the following options:

**era®/Cleanair®/CarbonLock®/
AgeLast®/Recycleplast®/RAP**

Airfield BBA C typical data

Material property	Test specification	Typical result
Design void content	BS EN 12697-6	Vmin 4.0% – Vmax 9.0%
Binder drainage	BS EN 12697-18 Beaker Method	< 0.3%
Water sensitivity	BS EN 12697-12 Method A (ITSR) BS EN 12697-23	≥ 80%
RTPD (wheel tracking)	BS EN 12697-22 Procedure B WTS in Air	≤ 1.0mm/10 ³
Fatigue	BS DD ABF	≥ 100,000 cycles to failure @ 100µstrain

Airfield

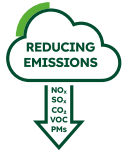
Technical data sheet



**INCLUDES
RECYCLED CONTENT**



**REDUCED
CO₂**



**REDUCING
EMISSIONS**



**RESISTANCE TO
DEFORMATION**



**SKID
RESISTANCE**



**ENHANCED
RIDE QUALITY**



**SPRAY
REDUCTION**



**HEALTH
AND SAFETY**

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com

southwestasphaltsales@uk.heidelbergmaterials.com

southwalesasphaltsales@uk.heidelbergmaterials.com

southeastasphaltsales@uk.heidelbergmaterials.com

Tufflayer®

Technical data sheet

Tufflayer® offers an alternative SAMI (stress absorbing membrane interlayer) to asphalt reinforcing layers by providing a highly polymerised impermeable crack relief interlay solution that also protects lower layers from water ingress.

Laid by conventional paving equipment the Tufflayer solution uses a specially designed polymer modified bitumen (PMB). Tufflayer achieves optimum flexibility, enhances fatigue resistance and significantly delays the effects of reflective cracking. Avoiding the use of geogrids also reduces on-site equipment and personnel, reducing the health and safety risk.

The unique Tufflayer design achieves a low voids impermeable finish making it ideal for concrete overlays or any site where reflective cracking may be an issue.

Using Tufflayer as an alternative to geogrids provides a superior design solution at reduced whole life cost.

Benefits

- High levels of flexibility
- Significant delays in reflective cracking
- Protect lower pavement from moisture ingress
- Increased durability
- Cost and carbon effective over the whole life
- Reduced CO₂ when supplied as era 140
- 100% recyclable

Available with the following options:
era®/CleanAir®/AgeLast®/RecyclePlast®

Use this product for

- Concrete overlays
- Sites where reflective cracking is an issue
- Major projects

Tufflayer®

Technical data sheet

Tufflayer technical data

Typical material properties	Typical result
Target thickness	25mm
Minimum overlay thickness	35-40mm
Overlay thickness in heavily trafficked areas	100mm
Typical laying temperature	160-175°C
In situ voids	0.5-2.0%
Resistance to deformation	Class 2 60°C (CI 943 requirement)
Fatigue life	Up to 25 times higher when compared with a conventional bitumen solution*

Typical performance figures

Material property	Test specification	Typical result
Design void content	BS EN 12697-6	Vmin 0.5% – Vmax 3.0%
RTPD (wheel tracking)	BS EN 12697-22 Procedure B WTS in Air	≤ 1.0mm/10 ³

*Analysis of ITFT data using 40/60 DBM as a comparator.

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com



**CRACK
RESISTANT**



**PREVENTS
WATER INGRESS**



FLEXIBLE



**FATIGUE
RESISTANT**



**REDUCED
CO₂**



**INCLUDES
RECYCLED CONTENT**

RecyclePlast®

Technical data sheet

RecyclePlast® offers a circular approach to asphalt, reducing carbon emissions and repurposing waste plastic to create durable roads. Asphalts containing additives from waste plastics and can be produced at lower temperatures using Heidelberg Materials' era® 140 warm mix process, which reduces the carbon emissions associated with road construction and maintenance by up to 15%.

The modified waste plastic is compatible with bitumen without compromising its performance and can be used across many of Heidelberg Materials' standard asphalts. RecyclePlast provides a beneficial use for plastic at the end of its life rather than it being sent to landfill and can also be recycled back into new asphalt at the end of its life.

RecyclePlast is suitable for a wide range of applications and is produced using Heidelberg Materials' era® 140 process. This allows the asphalt to be produced at a lower temperature than standard hot mix, reducing energy requirements and associated carbon emissions by up to 15%. The lower production temperature and quicker installation provides better working conditions for operatives as less fumes, odour and steam are generated.

It is estimated that every kilometre of road laid using RecyclePlast prevents 450kg of plastic waste going to landfill and saves one tonne of CO₂ emissions because of the asphalt's lower production and laying temperatures.

Benefits

- Provides a beneficial use for waste plastics, supporting the circular economy
- Prevents waste plastic going to landfill

- Using era 140 process reduces CO₂ emissions associated with production and laying by up to 15%
- Suitable for a wide range of applications
- Improved working conditions for site operatives
- 100% recyclable
- Available from Heidelberg Materials asphalt plants across the country
- Quicker installation leading to less disruption on site

Also available with the following options: era®/CleanAir®/CarbonLock®/AgeLast®/RAP

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com



**INCLUDES
RECYCLED CONTENT**



**REDUCED
CO₂**

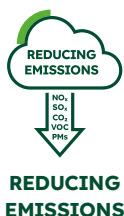
Heidelberg Materials' range of CleanAir® products help to minimise the impact of asphalt production and laying on local air quality.

We have completed successful CleanAir trials using Shell Bitumen FreshAir, a specialist binder. This has shown to reduce specific gases and particulate matter from asphalt mixes by an average of 40% compared to conventional bitumen.

The technology can be used in all Heidelberg Materials asphalt products and does not adversely affect the properties of the bitumen or asphalt. It acts directly with some of the chemical compounds that affect air quality, as well as odour-releasing molecules. This helps to reduce release of specific gases and particulates (NO_x, SO_x, CO, VOC and PMs) into the air during production and paving.

CleanAir is particularly beneficial for ultra-low emission zones (ULEZ), sensitive areas and sites with poor air quality. Its use improves air quality during production and the road building phase – particularly in urban areas and tunnels, where ventilation is an issue.

Every kilometre switched to CleanAir is estimated to have a similar effect on particulate matter (PM10) as planting 16 trees and a reduction of nitrogen dioxide (NO₂) emissions as removing 40 cars from the road.



Benefits

- 40% reduction of particulate matter equivalent to planting 16 trees per lane km laid
- Reduced impact on air quality with substantial impact on NO_x, SO_x, CO, VOC and PMs
- Reduction of NO₂ equivalent to removal of 40 cars per lane km laid
- Active odour neutralisation of 95%-99%
- Perfect solution for ULEZ, tunnels and sensitive areas
- Can be used in Heidelberg Materials full asphalt range
- Suitable for all asphalt applications
- 100% recyclable

Also available with the following options: era®/CarbonLock®/AgeLast®/Recycleplast®/RAP

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com



CarbonLock®

Biogenic asphalt

Technical data sheet

CarbonLock® biogenic asphalt can help cut the carbon emissions associated with road laying and maintenance by at least 25% and is suitable for use in a wide range of applications.

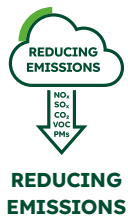
CarbonLock asphalt contains biogenic material within the binder, which absorbed and stored atmospheric CO₂ during its growth. This CO₂ is 'locked' into the material for its entire service life, even when planed and recycled.

It is estimated that the inclusion of biogenic materials within the binder 'locks in' six tonnes of CO₂ into every kilometre of road, rather than releasing it back into the atmosphere, cutting emissions further.

As a result, the product provides at least a 25% reduction in carbon emissions compared with standard hot mix asphalt.

CarbonLock is available with polymer modified bitumen (PMB) to produce an asphalt that offers additional durability benefits to further extend the life of the asphalt and reduce the need for maintenance interventions, providing whole-life carbon reduction.

CarbonLock can be produced using Heidelberg Materials' era 140 warm mix process, which allows it to be manufactured at a lower temperature than standard hot mix asphalt, reducing energy requirements and associated carbon emissions.



Benefits

- Lowers carbon emissions associated with production and laying by at least 25%
- Enhances durability
- Contains biogenic material from sustainable sources
- Options for thin surface course solutions
- Can include a polymer modified bitumen (PMB) to offer additional durability and whole-life carbon reduction
- 100% recyclable
- Available from Heidelberg Materials asphalt plants across the country

Also available with the following options: era®/Cleanair®/AgeLast®/Recycleplast®/RAP

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com
southwestasphaltsales@uk.heidelbergmaterials.com
southwalesasphaltsales@uk.heidelbergmaterials.com
southeastasphaltsales@uk.heidelbergmaterials.com

AgeLast®

Asphalts for network resilience

Technical data sheet

AgeLast® asphalts can help lower the carbon emissions associated with road maintenance and construction through enhanced durability, reducing the need for intervention. AgeLast reduces the need for intervention on the road network.

AgeLast contains an additive that reduces the rate of bitumen ageing through oxidation, and can be used across Heidelberg Materials' full range of standard asphalts. AgeLast can be used across the full range of Heidelberg Materials' standard asphalts.

The additive slows down the ageing process of the binder prolonging the in-situ life of the asphalt. This reduces the need for maintenance interventions, supporting the circular economy and reducing carbon emissions. This also helps customers meet their decarbonisation goals.

It is suitable for all asphalt applications, particularly those where road interventions lead to high disruption for road users. AgeLast is a high-performance, durable material, and can extend service life by up to 30%.

The asphalt can be produced using Heidelberg Materials' era® warm mix process, which allows AgeLast to be manufactured at a lower temperature than standard hot mix asphalt. This reduces energy consumption and associated carbon emissions by up to 15%. Lower production temperatures also provide better working conditions for operatives by generating less fumes, odour and steam.

Benefits

- Enhanced durability (up to 30%)
- Reduced road disruption
- Lower whole-life carbon footprint
- Can be used in full range of Heidelberg Materials' asphalt and in conjunction with RAP
- 100% recyclable
- Available from Heidelberg Materials asphalt plants across the country

Also available with the following options: era®/Cleanair®/CarbonLock®/Recycleplast®/RAP

Please see asphalt product matrix for further information or contact technical:

northasphaltsales@uk.heidelbergmaterials.com

southwestasphaltsales@uk.heidelbergmaterials.com

southwalesasphaltsales@uk.heidelbergmaterials.com

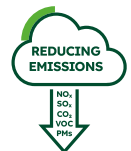
southeastasphaltsales@uk.heidelbergmaterials.com



**INCLUDES
RECYCLED CONTENT**



**REDUCED
CO₂**



**REDUCING
EMISSIONS**