



RETHINK YOUR ROAD

Specialist Surfaces,
Smarter Choices



UNITED KINGDOM



RETHINK YOUR SURFACES.

Make your budget go further

At Colas we know the challenges facing road engineers require some innovative thinking.

Road surfaces across the UK continue to deteriorate after years of under-investment and Local Authorities are working harder than ever to keep their road networks safe and well-maintained. But as budgets shrink, rate-payers still expect their highways to be kept in good condition with the minimum of disruption and environmental impact.

So we've applied our 95 years of road building experience and the resources of our 1200-strong Research and Development team to develop surfaces that make your roads more robust and reliable, and your road building more economical, efficient and planet-friendly.

Specialist Surfaces from Colas

Our range of Specialist Surfaces offers Local Authorities a number of benefits:

- **More Durable**

Our extra strong Fibredec solution improves overlay performance by 30% compared to traditional blacktops.

- **More Affordable**

Our high-quality, fast-lay Microasphalts save you money and cause fewer delays for your road users.

- **More Sustainable**

Our cost-effective Recycling products lower CO² emissions by up to 72%, cut waste and reduce lorry movements.

Our specialist
surfacing products:



FIBREDEC



MICROASPHALTS



RECYCLING

colas.co.uk/rethink



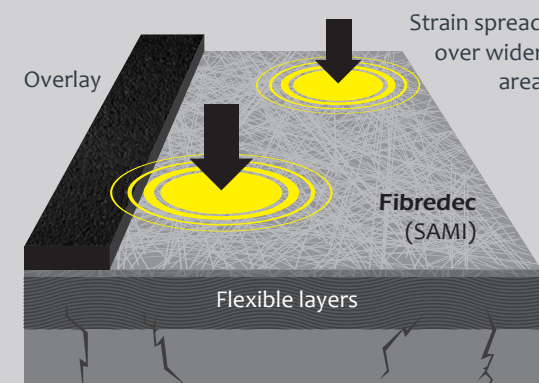
FIBREDEC

THE DURABLE SOLUTION THAT IMPROVES PERFORMANCE BY 30%.

Fibredec combines bitumen emulsion, chopped glass fibre and aggregate to create a strong, flexible and waterproof mix. Applied either as a highly resilient surface material or as a stress-absorbing membrane interlayer (SAMI), Fibredec is highly versatile and delivers significant performance improvements on more traditional surfaces.

How Fibredec works

Fibredec reduces surface cracking by providing additional tensile strength to absorb any movement in the pavement structure. If cracking in the underlay occurs, Fibredec minimises permanent lateral movement in the overlay material by easing and spreading the strain over a wider area.



Extra strong. Extra versatile

Local Authorities use Fibredec as a reinforcing treatment for many types of surface, including bitumen macadams, concrete, granular unbound bases, rolled asphalt and worn surface dressings. Laid as a single coat, double coat or racked-in dressing, its applications range from roads and car parks to cycleways, parks and recreation sites.



Use Fibredec to:

- Add a waterproof and flexible membrane to cracked and crazed surfaces
- Restore skid resistance to spalling or fretting concrete and blacktop
- Provide a cost-effective surface for unbound, granular sub-bases
- Create a cushion-like stress-absorbing membrane, far more effective than a conventional SAMI

Easy application. End-to-end care

Fibredec is applied with a fast and efficient process that causes minimal disruption and carbon footprint. Specialist equipment enables operators to deliver high output whilst maintaining sensitive control of the surfacing process. This means that Fibredec can be laid in almost any environment, including areas with difficult access. Local Authorities also benefit from the Colas end-to-end contracting service which covers preparation, application and after-care.

Choice of colours and textures

Fibretec is available with a range of different natural aggregates, giving a choice of surface finishes.



Tensile Test

Tensile strength
N/sq.mm
(Instron test rig)

Fibredec

0.9N

Control

0.6N

Control sample (asphalt slab)

Fatigue Test

Cycles to failure
(Dartec testing apparatus-
dynamic load frame)

Fibredec

Cycles to Crack Hz

3,300

6,300

Control

2,500

4,700

Control sample (asphalt slab)

Wheel-tracking Test

Number of passes
before cracking

Fibredec

15,000

Control

2,500

Control sample (asphalt slab)

Proven for strength and flexibility

Independent research* shows that road samples using a Fibredec SAMI significantly out-perform surfaces with no SAMI. Fibredec enhances resistance to fatigue and tensile stress by 30% and wheel-tracking by 300%.

* Performance of 'SAMI'S in Simulative Testing, Nottingham University



MICROASPHALTS

THE SUSTAINABLE ALTERNATIVE TO CONVENTIONAL SURFACING THAT SAVES YOU TIME AND MONEY.

Our Microasphalt process is cold-applied so uses less energy and lowers your carbon emissions. It comes with a choice of versatile materials so it can tackle a broad range of engineering challenges. Bitutex FP, Paveseal, Ralumac HT, Ralumac 2000 and Ralumac 1000 each offers specific application and performance benefits, and all conform to National Sector Scheme 13b and ISO 9001.

BITUTEX FP

Bitutex FP is ideal for footpaths, cycle paths, car parks and carriageways. It blends bitumen emulsion, aggregate and additives to provide maximum effectiveness, rapid curing and an even surface coating. It regulates and fills everything from minor cracks and crazing to 15mm deep potholes and marks without pre-patching. Bitutex FP adheres and strengthens quickly, allowing use by pedestrians within 20 minutes and motor traffic in under an hour.

Benefits:

- Improved appearance and surface texture
- Adheres to a wide range of surfaces
- Seals against water
- Fills and regulates depressions up to 15mm deep
- Extends footway life by up to 10 years



PAVESEAL

With pre-patching, Paveseal is used for repairing severely damaged footpaths and carriageways. Based upon the Bitutex FP formulation but also incorporating cellulose fibres and polymer-modified bitumen, Paveseal provides enhanced tensile strength and outperforms conventional slurry surfaces.



RALUMAC

Ralumac is a highly durable, environment-friendly HAPAS-approved solution that repairs potholes up to 40mm deep and is traffic-usable within 30 minutes.

Benefits:

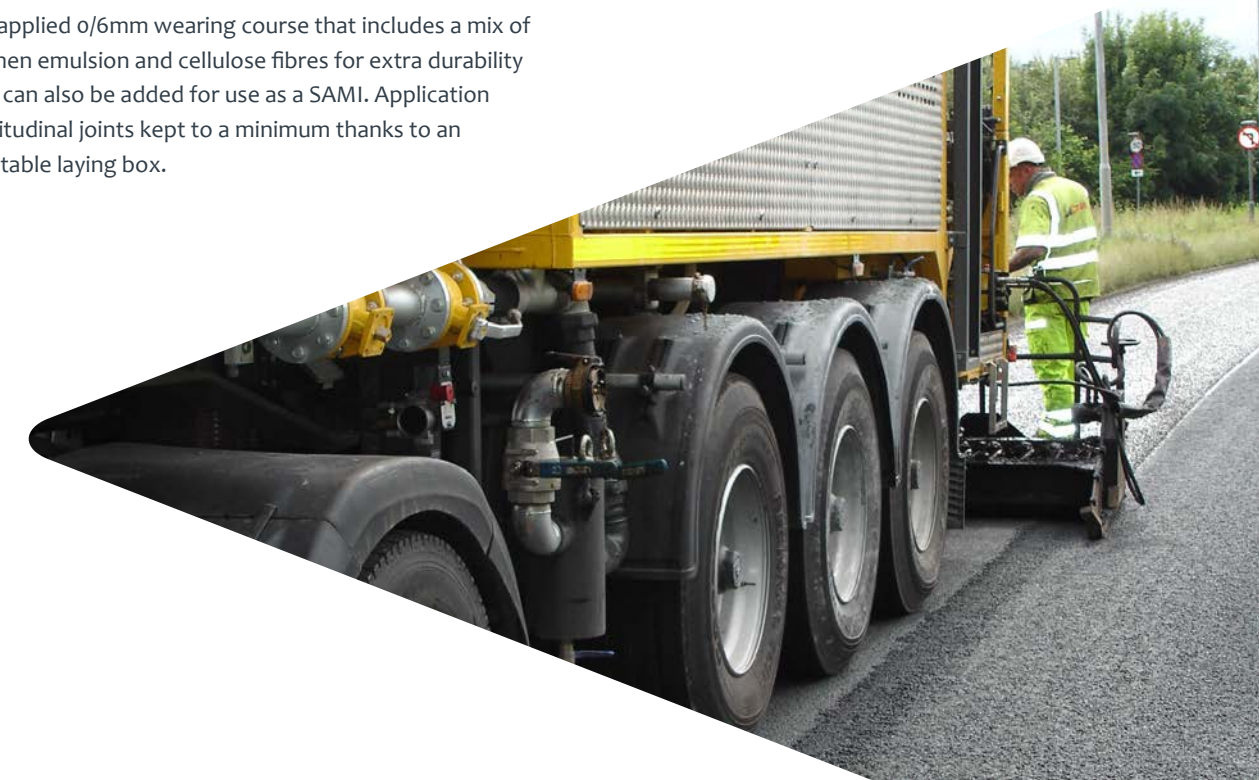
- Versatile and low-emissions
- Resolves wheel track rutting and deformations
- Low noise characteristics
- Applied by specialist machines that carry all components and complete treatment in a single pass
- Uniformed and sealed finish
- Resistant to heavy traffic volumes

RALUMAC HT

Ralumac HT (High Texture) incorporates heavier-grade aggregates for use on main roads, motorways and routes experiencing high volumes of traffic. This polymer-modified microasphalt is fast to apply and very effective for filling ruts, improving skid resistance and protecting road surfaces from water damage.

RALUMAC 2000

Ralumac 2000 is a cold-applied 0/6mm wearing course that includes a mix of polymer-modified bitumen emulsion and cellulose fibres for extra durability and stability. Fibreglass can also be added for use as a SAMI. Application is made easier and longitudinal joints kept to a minimum thanks to an articulated, width-adjustable laying box.



RALUMAC 1000

Ralumac 1000 is good for filling ruts, restoring profile and treating deteriorating road surfaces. It is especially suitable for restricted sites with limited access or high-speed locations with heavy levels of traffic. Residential estate roads can be repaired with little or no handwork and the application machine carries, mixes and lays all surface components.





THREE COST-SAVING PROCESSES THAT SHRINK YOUR CARBON FOOTPRINT BY UP TO 72%.

Colas provides a choice of three carbon-friendly Recycling processes: Repave, Retread and Deep Recycling. By reusing existing materials within the new road surface, these solutions minimise environmental harm in a number of ways:

- Less waste is sent to landfill, resulting in fewer lorry movements and lower emissions
- Shorter construction periods cut costs and ease traffic disruption
- Less energy is consumed across the entire construction cycle
- Recycling lessens the reliance on producing and transporting new materials

Choosing the greenest

Colas independent experts are always on hand to give guidance on the best recycling option. Our environmental calculator offers you a quick and easy-to-use tool to compare the impact of surfacing solutions and make the most sustainable choices.



1. REPAVE

A hot, in-situ process suitable for projects at any time of year and in most weathers.

The Repave process involves heating the road surface to 150°C to create a plasticised asphalt layer, before scarifying to a depth of 30mm. A new, thinner asphalt layer is then superimposed to provide a homogenous asphaltic layer up to 50mm deep.

Additional benefits

- Compatible with any type of surface course including HRA, SMA or bituminous macadam
- Gullies may not require adjustment, saving time and money
- Resurfacing is possible at any time of year, or in bad weather

Repave case study: A64 Malton Bypass

Treating 32,696m² of carriageway, compared with a conventional surfacing process, **Repave saved 39.0% in energy consumption and 37.0% in CO₂ emissions.**

2. RETREAD

A cold in-situ process that reduces time on site and minimises disruption.

First, the road surface is broken down to a depth of 75mm. This material is graded to form the new profile. Next, retread emulsion is mixed into the existing pavement and the surface compacted. Binder and 14mm chippings are rolled in to close surface voids before a double 6mm surface dressing is applied.

Additional benefits

- Reduces cost by working to existing levels, leaving kerbs and iron work undisturbed
- Choice of final surfaces can be applied as necessary
- Recycles the existing pavement in-situ to form a durable reprofiled carriageway rather than planing off and discarding old material

3. DEEP RECYCLING

A fast and economical cold process for reconstructing haunches or the whole surface.

After pulverisation, the surface is compacted and trimmed. Excess material is removed before recycling the existing pavements. Emulsion and hydraulic binders are combined with the existing material and fuel ash or cement may be added. Once the recycling is complete, the material is compacted again, surface-shaped and coated with bituminous emulsion and sealing grit.

Additional benefits

- Conserves natural resources by recycling materials such as china clay and glass
- Complies with EU regulation by treating tar-bound layers in-situ without the need for costly removal
- Up to 1500m² per day can be processed while leaving all material in place throughout operations to minimise disruption

Retread case studies: Kirklees

77,442m² of carriageway, comparing Retread with a conventional surfacing process: **Retread saved 61.8% in energy consumption and 61.4% in CO₂ emissions.**

Stockport Metropolitan Borough Council

7,000m² of carriageway, comparing Retread with a conventional surfacing process: **Retread saved 71.74% in energy consumption and 71.43% in CO₂ emissions.**





FIBREDEC



MICROASPHALTS



RECYCLING

COLAS: RETHINKING ROAD ENGINEERING FOR YOUR BENEFIT

Colas is an award-winning business, delivering sustainable solutions for the UK's transport infrastructure. We invest, design, construct, maintain and operate a wide variety of projects for the public and private sector clients.

Our innovative thinking is helping Local Authorities across the country to keep their roads safe, well-maintained and managed. Our Specialist Surfaces make roads stronger and more wear-resistant. They cut repair bills, save maintenance time, minimise congestion and reduce inconvenience for road users. Most importantly, we are helping to protect our environment with carbon-friendlier solutions.

BUILDING THE ROAD TO A GREENER FUTURE

We're part of the International Colas Group, whose world-class Research and Development facilities give our clients access to innovative new products, processes and ideas.

Sustainability and innovation are at the heart of everything we do. As technology and techniques evolve, our solutions do too.

We provide the complete service, from investment and design right through to project delivery and aftercare. At every step, we have experts with the capability and skill to turn the vision into reality. Our people all share our passion to deliver excellence in everything we do.

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