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AIA ASPHALT INDUSTRY ALLIANCE

Reporting on the asphalt industry

Issue 46 | Spring/Summer 2021

ALARM SURVEY 2021

Legacy of underfunding

TOWARDS NET ZERO CARBON

Driving down and offsetting emissions

LET'S STICK TOGETHER

Collaborative working and the merits of bond coat

PATCH AND MEND REPAIRS SET TO CONTINUE

A good response to the ALARM survey enables us to provide robust data on local roads

We are extremely grateful to all of the local authority highway teams who still found time to complete our Annual Local Authority Road Maintenance (ALARM) survey, despite the exceptional challenges they have faced over the last 14 months.

Response rates were even up in some areas and these contributions allow us to continue to report robust data, track long-term trends and highlight annual funding and condition levels.

This year's ALARM findings demonstrate that inconsistent funding in England and Wales has led to an increase in quick patch and mend repairs, which do nothing to address the underlying resilience of the network, and that **maintaining roads to target conditions is still out of reach for local authorities** (pages 6 and 7).

Unfortunately, this pattern looks set to continue. And, despite the Department for Transport's commitment to extending the Pothole Fund, other announcements show that there will actually be a **reduction in capital funding for local roads in England in 2021/22**. While in Wales, though a small amount of additional funding has been made available for local roads it is a fraction of what Welsh authorities told us they need just to stand still (page 5).

Materials innovation can reduce the need for maintenance by increasing the durability of our roads. The asphalt and bitumen sectors are also working hard to reduce the carbon emissions associated with road construction and maintenance. You can read **examples of the increased use of recycled materials and Warm Mix Asphalts** on pages 9 and 11, while a **new bitumen binder, which aims to extend life, is being tested by Highways England** (page 8).

As we look to the future, a well-funded, well-maintained local road network will be vital to the nation's recovery and to support the Government's active travel ambitions. We will continue to use the findings from ALARM 2021 to raise awareness among policy makers and budget holders as we work to support local roads securing their share of funding.

Rick Green
Chair, Asphalt Industry Alliance

CHANGES IN VEHICLE TYPE AND USAGE

RoadFile

■ **Traffic volumes** by road class on Great Britain's roads increased by over 50 billion vehicle miles a year – almost 17 per cent – between 2010 and 2019. This is just one of the emerging trends highlighted on RoadFile, the updated online hub of road-related statistics.

Delivered by the Asphalt Industry Alliance, the data forms part of a comprehensive update of publicly available road-related statistics. RoadFile covers the period up to 2019, from the UK and Europe using sources such as the Department for Transport and Eurostat.

RoadFile (www.roadusers.org.uk) presents key information in an easy-to-use format with options to download the data to facilitate further analysis.

Shifting patterns in road usage

The GB data also indicates that big changes are being seen in the type of vehicles on our roads – with the number of light commercial vehicles growing at more than double the rate for cars. It also indicates shifting patterns in the way in which the road network is used, with minor roads showing a more significant increase in traffic volumes than motorways and A roads.

The website covers a broad range of topic areas including:

RoadFile offers road-related statistics in an accessible format with options to download data

- **road network:** information on UK and EU road networks, traffic and congestion;
- **road usage:** how many passenger, business and goods miles are travelled by different modes of transport;
- **traffic volume:** licensed vehicle travel in GB;
- **environment:** information on the environmental impact of road travel;
- **funding:** highways and road infrastructure funding;
- **safety:** across GB and EU networks by road class and severity.

HAPAS APPROVAL FOR NEW, MODIFIED ASPHALT

Tarmac has received BBA HAPAS* approval for its rubber modified asphalt, ULTIPAVE R, for use according to MCHW Clause 942.

It is the first thin surfacing system incorporating recycled end of life car tyres to secure recognised third-party approval for highways and follows a series of successful trials over recent years.

Tarmac has a long-held strategy to incorporate waste stream materials into asphalt, where possible. It has calculated that the rubber from up to 750 waste tyres can be recycled for every kilometre of highway surfaced with UTLIPAVE R, depending on the thickness of the layer.

The sustainability credentials of the new material are further boosted as it is manufactured using the company's warm-mix binder technology, which reduces its embodied production carbon.

Brian Kent, National Technical Director at Tarmac, said: "Our rubber modified asphalt is another example of the innovation we continue to invest in to improve the environmental performance of our roads.

"Using high-grade aggregates and rubber, ULTIPAVE R has been assessed to demonstrate the necessary durability. Securing the BBA HAPAS approval is a major milestone and will enable us to introduce the product to even more of our partners for use across the Strategic Road Network (SRN), as well as expand its use on the local road network."

Tarmac's Ultipave R thin surfacing system contains recycled end of life car tyres

In 2019, a trial section of the material was laid in partnership with Highways England on the southbound carriageway of the M1 in the East Midlands between junctions 22 and 23. It was the first motorway resurfacing scheme to use an asphalt containing granulated rubber from the UK's tyre waste stream and incorporated a higher percentage of rubber modification than the mixtures previously trialled with local authorities.

There has been significant progress in recycling waste tyres in the UK, but there is still a reliance on the export of one in four tyres – 150,000 tonnes annually – predominantly to North Africa and the Indian subcontinent. Using the waste tyre stream in asphalt looks to provide a locally sourced route to recycling them in the UK.

* *British Board of Agrément Highway Authorities Product Approval Scheme*

RECORD RISE IN POTHOLE INCIDENTS

Data from RAC Breakdown shows that its patrols were called out to assist an average of 52 drivers a day with pothole-related breakdowns in the first three months of 2021.

A total of 4,694 drivers who had most likely broken down as a result of hitting a pothole were reported – a three-fold increase from the last quarter of 2020 (Q4 2020: 1,461).

It is the largest rise between quarters the RAC has ever seen and is 37% higher than the same period of 2020 – despite the fact the country has spent much of the first quarter in lockdown, resulting in lighter than normal traffic volumes.

Courtesy RAC

Nicholas Lyes, RAC Head of Roads Policy, said: "These figures highlight that the condition of many roads is now in a desperate state. We've just had the largest quarterly rise in the number of pothole-related breakdowns on record and the problem risks getting even worse as pandemic restrictions are eased and the roads get busier.

"Back in January we feared the colder winter risked causing further extensive damage to the roads, and it's clear this is exactly what has happened.

"What is undeniably clear is that all road users, whether on two-wheels or four, are paying the price for a lack of long-term maintenance for roads they use regularly. Additional funding announced annually may help fill some potholes, but they don't cure the problem over the long-term as they won't deal with underlying defects. Nor do they allow local authorities to plan routine maintenance.

"We appeal to the Transport Secretary and the Treasury to take a fresh look at roads funding."

> "...the condition of many roads is now in a desperate state."
>
> **Nicholas Lyes,** RAC

POPULAR ASPHALT COURSE BACK

Highway engineers, technicians and those in associated disciplines can build their knowledge and understanding of road materials by attending the annual residential *Asphalt Materials and Flexible Pavements Course* at the University of Newcastle. Jointly developed by the University in conjunction with the Mineral Products Association (MPA), the course, now in its 47th year, provides an important understanding of 'all things asphalt' for the design, construction and maintenance of road pavements. It is recognised across the sector for providing relevant training to address ongoing competency and learning requirements for both those in the supply chain and clients.

The course is promoted and verified for CPD in conjunction with sectoral professional institutes (CIHT, IAT and IHE) and is scheduled to be held from **5-10 September 2021**. Co-Course Directors, Roger Bird of the University and Malcolm Simms of MPA Asphalt, commented: "We are delighted that the current indications are that we will be able to once again deliver the course. The sector is facing new and changing regulatory and societal challenges so current knowledge remains essential."

Potential delegates can find details at: https://bit.ly/3eGWIPD

The *Asphalt Materials and Flexible Pavements Course* is now in its 47th year

RESEARCH PROJECT SCOOPS DIGITAL AWARD

Eurobitume UK, Highways England and the Mineral Products Association (MPA) have been announced as a 2019-20 Highways England Award winner in the Delivery category (Digital Transformation).

A sub-task report of the 2018-19 collaborative research project, delivered by AECOM, on the next generation of asphalt materials, was submitted for the awards as *Promoting Safety and Quality with Automation in Road Construction*.

The study highlighted how innovative technologies can assist in increasing the automation level of conventional quality control and quality assurance test methods. The adoption of similar technologies should result in a safer and more efficient quality management process. The research has provided a foundation for further development of the assessed technologies and future revision of specification requirements.

The Collaborative Research Programme, first established in the 1980s, continued during lockdown, focusing on enabling and enhancing the sector's re-use and recycling performance.

The overall project was split into two sub-tasks looking at ensuring the suitability of innovative recycling technologies and feedstocks.

Both reports are available at: https://aecom.com/uk/pavement-design-publications/

TOTAL DIRECTOR ELECTED EUROBITUME PRESIDENT

Frank-Michel Biel, director of marketing and business development at Total Bitumen, has been elected President of Eurobitume, taking over from Frédérique Cointe, who had been in the role for the past 12 months. He was previously Eurobitume's Vice-President and one of his first priorities will be supporting the delivery of the 7th E&E Congress in June (see page 12).

Annual Review

Eurobitume's Annual Review 2020 highlighting key activities in the last year on behalf of members is now available to view at: www.eurobitume.eu/AR2021

GOVERNMENT'S CAPITAL FUNDING ANNOUNCEMENT MASKS MULTI-MILLION POUND MAINTENANCE CUT

THE DEPARTMENT for Transport announced in February that capital funding allocations for local road maintenance will be £1.385 billion in 2021/22.

This figure includes £500 million in the Pothole Fund, £500m Highways Maintenance Block (HMB) needs element, a £125m HMB incentive element and £260m Integrated Transport Block funding. However, this total is actually £398 million lower than that for the previous financial year.

Vital role for local road network

Commenting on the reduction in funding, Rick Green, Chair of the Asphalt Industry Alliance, said: "Our local road network has a vital role to play in supporting our communities and economic growth as we reset after the pandemic.

"It is completely counterproductive, while confirming a £500m Pothole Fund for the coming year, that local authorities are also finding out that other funding streams they rely on to maintain their local road networks have already been cut.

> "...'giving with one hand and taking away with another' doesn't make sense – it will only lead to deteriorating road conditions and a rising bill to put them right."
>
> **Rick Green,** AIA Chair

Cllr Barry Lewis

"We recognise difficult choices are having to be made at present, but this 'giving with one hand and taking away with another' doesn't make sense – it will only lead to deteriorating road conditions and a rising bill to put them right.

"What was needed from the Chancellor in the March Budget was a five-year commitment to investing in local roads, to allow local highway authorities to plan ahead and implement a more cost-effective whole-life approach to upgrades and maintenance."

This viewpoint is supported by the County Councils Network (CCN). Its economic growth spokesperson, Cllr Barry Lewis, said: "Unless further funding is made available, our councils will have no choice but to reduce their roads maintenance work this financial year."

WELSH FUNDING A FRACTION OF WHAT'S NEEDED

THE WELSH Government is making an extra £12m of funding available for local authorities.

The additional money, announced by Housing and Local Government Minister at the time, Julie James, pictured, will reportedly allow Welsh local authorities to continue with planned highways maintenance works, boosting the economy and making active travel safer.

The Welsh Government said the cash further highlights its commitment to high quality active travel and public transport.

The Minister said: "We know that during the pandemic, with a quieter road network, most councils have already made good use of the opportunity to undertake repairs and improvements.

Additional money for local roads

Rick Green, Chair of the AIA, commented: "It is great news that the Welsh Government has announced this additional money for local roads but it is only a fraction (14%) of what Welsh authorities told us in our 2021 ALARM survey they need just to stand still."

Former Housing and Local Government Minister Julie James

APPG TO REFORM AS SOON AS POSSIBLE

SIR CHRISTOPHER Chope, left, MP for Christchurch in Dorset, has confirmed he will continue as Chair of the *All Party Parliamentary Group (APPG) for Better Roads*, and plans are being made to reform the Group as soon as possible once COVID-19 restrictions allow.

The inaugural meeting will confirm the Group's name change – from the APPG on Highways – and appoint officers. It will seek to initiate consideration of the planned AIA briefing on 'the role of local roads in supporting the country's future economic, sustainability and cohesion goals and the potential cost to productivity and connectivity of not investing sufficiently in the network'.

It is hoped that the first formal meeting of the Group will then take place in the autumn and address other priorities for the near future including enhancing membership numbers and engagement.

SURVEY REVEALS BUDGETS UP, BUT SHORTFALLS REMAIN

Findings contained in the ALARM survey 2021 show that cuts to highway maintenance budgets reported 12 months ago have not been replenished.

THE 2021 Annual Local Authority Road Maintenance (ALARM) survey reports that the legacy of inconsistent funding in England and Wales is still preventing highway engineers from being able to provide long-term, cost-effective maintenance improvements for local roads.

Despite a reported increase in highway maintenance budgets, maintaining local roads to target condition remains out of reach for many local authorities.

Now in its 26th year, the independent ALARM survey is carried out annually by the Asphalt Industry Alliance (AIA). The data received direct from local authorities provides a means of tracking any improvement or deterioration in local road conditions and funding.

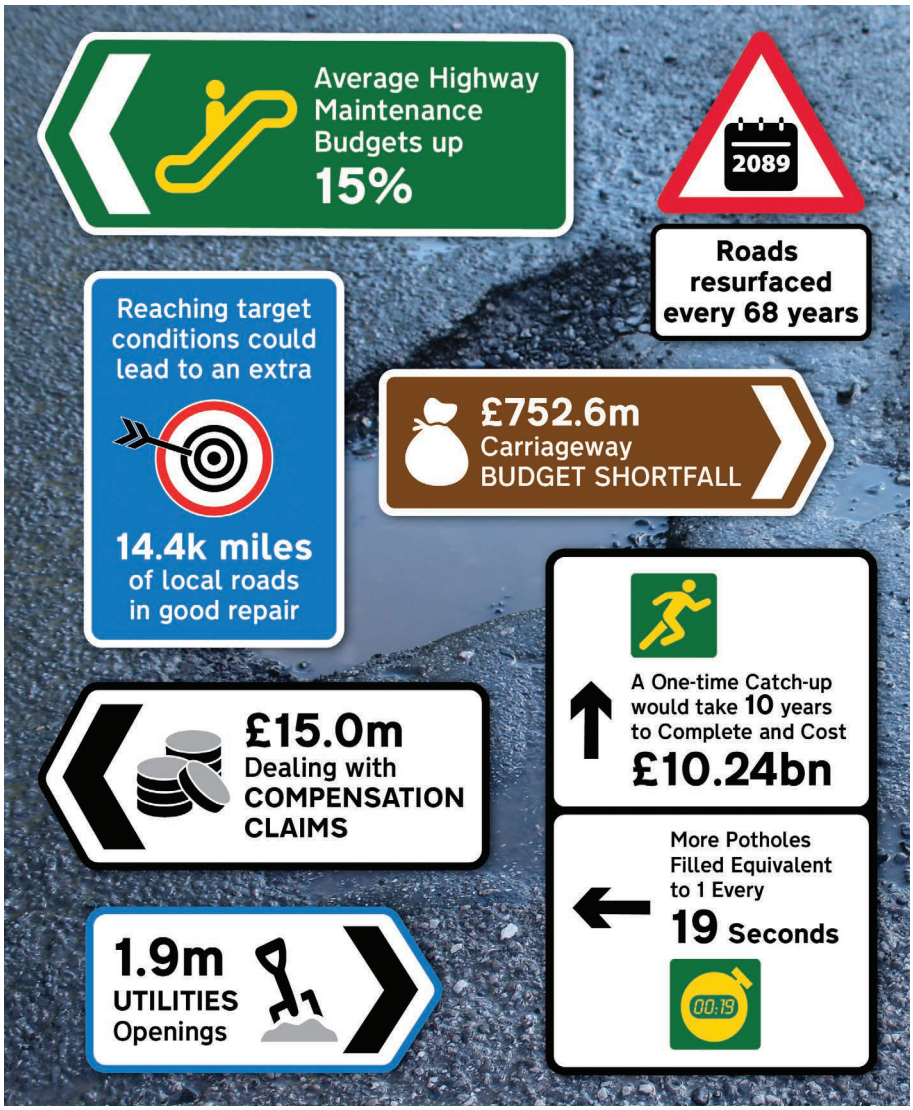
Additional funding

The findings, which relate to the 2020/21 financial year, indicate there has been a 15% increase in highway maintenance budgets in England and Wales. This increase was due, in part, to additional funding from central Government (including the Pothole Fund in England) as well as supplementary budget pots to support changes as a result of COVID-19 social distancing guidance and advance its active travel ambitions.

Even though overall highway budgets are up on 2019/20, they remain below the levels reported in ALARM 2019, demonstrating that the cuts reported 12 months ago have not been replenished and a long-term inconsistent pattern to funding continues.

And, despite this increase, local authorities reported an average annual shortfall of £4.5 million per authority in their carriageway maintenance budgets – the equivalent of £752.6 million across England and Wales. This is the gap between what they received to maintain the road surface and structure and what they actually need to keep it in reasonable order.

Local authorities have a statutory duty to maintain the highway and are encouraged to do so using asset management principles. However, the inconsistent up-down approach to funding that ALARM has reported for many years – with a repeat pattern of short-term cash injections to stem accelerating decline – does not support this. It almost enforces wasteful patch and mend activity as borne out by the large increase in the number of potholes filled over the last 12 months in England and Wales, the equivalent of one being filled every 19 seconds.



ALARM SURVEY 2021: inconsistent funding is hindering long-term, cost-effective maintenance improvements for local roads

Tough decisions

Rick Green, Chair of the AIA, said: "Potholes and pothole repairs are the symptoms of an underfunded network, where hard pressed highway teams continue to have to make tough decisions to keep all of their networks functioning."

Local authorities also report that target

road conditions still remain out of reach. If they had enough funds to meet their own target conditions across all road types, there could be an additional 14,400 miles of local roads in a good state of repair and another 2,000 fewer miles in need of urgent repair.

"The last year has been like no other and the 'hidden heroes' responsible for maintaining our local roads should be proud of the role they have played working throughout the pandemic to keep our key workers and emergency services moving, supermarket shelves stocked and vaccines distributed," said Rick Green.

"While the extra funding in 2020/21 was welcomed, using it to repeatedly fill in potholes is essentially a failure as it does nothing to improve the resilience of the network. The average frequency of road surfacing is now once every 68 years and the one-time catch-up cost to fix the backlog of maintenance work on our local roads in England and Wales remains in excess of £10 billion.

"It is clear that a longer-term approach to local road funding is needed, similar to the five-year commitment made to the strategic road network in the two Roads Investment Strategy (RIS) periods. This would allow local authority highway engineers to plan ahead and implement a more proactive, sustainable and cost effective whole life approach to maintaining the network. This commitment is vital to the nation's post-pandemic reset in which we will rely on our local road network to support recovery and underpin active travel and levelling-up goals."

> "Our data shows that demand for asphalt was 8.6 per cent lower in 2020 than in 2019..."
>
> **Nigel Jackson,** Mineral Products Association

Nigel Jackson, Chief Executive of the Mineral Products Association (MPA), added: "Our data shows that demand for asphalt was 8.6 per cent lower in 2020 than in 2019 so a five-year commitment from central government would provide the asphalt sector with the confidence to invest in, for example, people and plant."

The full ALARM 2021 report is available to download at www.asphaltuk.org

What stakeholders in our highway network are saying:

"The Government must now change tack and ring-fence a small proportion of existing fuel duty revenues over a five-year period so that local authorities are able to plan routine maintenance properly and get our local roads up to a fit and proper standard."

Nicholas Lyes
RAC Head of Roads Policy

"Authorities would welcome the necessary funding required to maintain and improve the assets and networks they are responsible for. Having access to a long-term funding pot would allow them to prioritise accordingly for the benefit of all road users."

Will Britain
President of the Local Council Roads Innovation Group

It's bizarre that central Governments still seem to expect local authorities to maintain, repair and manage their local road network without the long-term funding allocated to other transport infrastructure, including the strategic road network. Most journeys are either local or start locally, and local transport needs to be prioritised by governments as COVID restrictions are relaxed."

Duncan Dollimore
Head of Campaigns at Cycling UK

"The AA has in recent years highlighted the skewing of emergency road repair funding towards restoring the condition of main roads while leaving residential and other minor roads in a poor condition. Furthermore, government and councils urging more Active Travel by getting people to switch from car to bicycle doesn't sit right with local roads riddled with potentially lethal potholes."

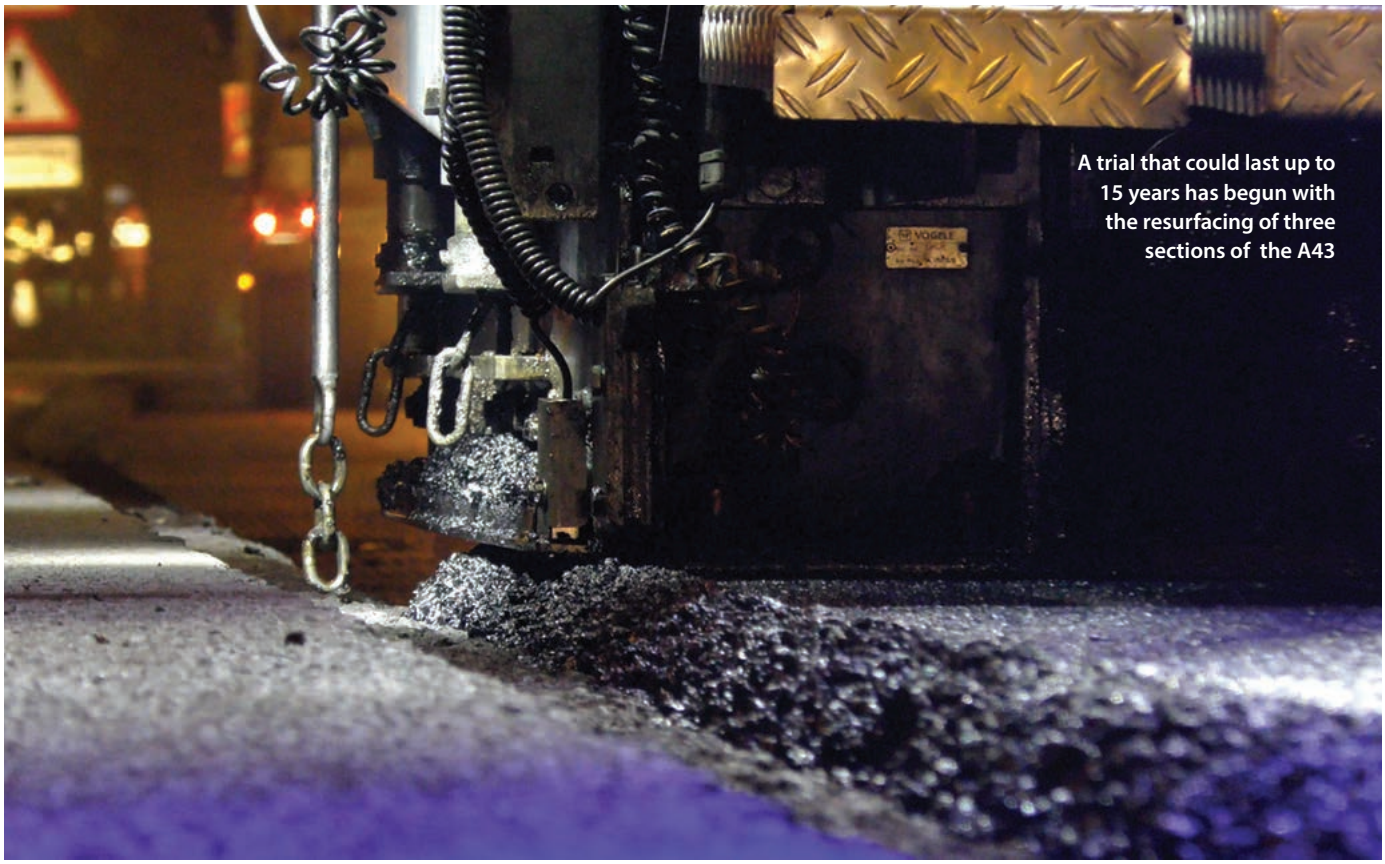
Edmund King OBE
AA President

"Poorly surfaced, potholed roads are bad for all users but they can be lethal for people cycling, and we simply must give councils the resources required to keep the roads in our towns, cities and rural communities fit for purpose. We urge the Government to consider the AIA's proposal to deliver a strategic, long-term settlement to tackle the issue, also helping people on bikes to feel safer and supporting the Government's long-term Gear Change ambitions."

Nick Chamberlain
British Cycling Policy Manager

A43 STARS IN ROAD SURFACE PROTECTION TRIAL

A new **bitumen binder**, which aims to extend the lifespan of roads and reduce the need for maintenance, is being trialled by Highways England in Northamptonshire.



A trial that could last up to 15 years has begun with the resurfacing of three sections of the A43

MOTORWAYS and major A-roads in England are typically expected to be resurfaced every 10-12 years because of the effects of high volumes of heavy traffic, water ingress, UV exposure and oxidation cause the surface to deteriorate and crack.

Laboratory tests, however, have shown that TOTAL STYRELF® Long Life can protect the road surface such that roads built with it could last for longer, with reduced need for intervention. The product is designed to be more resistant to the elements by oxidising more slowly. This slows down the ageing process meaning that the road surface stays flexible for longer. Consequently, the binder's initial performance characteristics, such as resistance to fatigue, fretting, and thermal cracking, are retained for longer.

More durable road surfaces that require fewer repairs lead to lower whole-life carbon emissions by eliminating maintenance activities and brings about efficiencies and less disruption for road users. TOTAL UK worked in partnership with Highways England and Tarmac to resurface a busy section of dual carriageway on the A43 near Silverstone, in Northamptonshire, to trial the new mixture.

> "...these long-life binders will contribute to achieving clients' decarbonisation goals by reducing roadworks..."
>
> **Rick Ashton,** Market Development Manager, TOTAL UK

Rick Ashton, market development manager at TOTAL UK, said: "Our key focus is Sustainability through Durability and these long-life binders will contribute to achieving clients' decarbonisation goals by delaying roadworks, which saves manufacturing, transport and installation energy, and associated emissions. This trial paves the way for enhanced highways asset management and predictive deterioration modelling for Highways England." Three sections of the A43 have been resurfaced in the trial, which could run for up to 15 years. The first has been resurfaced with a standard bitumen while the other two use the TOTAL STYRELF® variants – eXtreme 100, and Long Life.

Experts from TOTAL UK will take samples from each section of the carriageway at regular intervals to measure the ageing performance and key characteristics of the bitumen, and to understand the degradation caused by water, oxidation and UV exposure.

The new technology has previously been tested in the laboratories of TOTAL, and on sections of road in Holland and Germany, but the A43 trial is the first time it has been used with such high traffic levels.

Mike Wilson, Highways England's Chief Highways Engineer, said: "We're always looking for innovative ways to help us keep England's motorways and major A-roads in good condition. The ultimate priority for us is safety, so we invest in new technology and materials to keep those using the roads safe. Longer lasting roads also means fewer roadworks, less disruption for motorists and a more sustainable network for everyone."

CARBON NEUTRAL FIRST

The UK's first **carbon neutral road scheme** – which included the use of a low energy production technique, recycling and carbon offsetting – has been carried out as part of a Highways England (HE) resurfacing project in Cumbria.

Resurfacing part of the A590 in Cumbria: the UK's first carbon neutral road scheme

THE ROAD improvement project included full-depth recycling of the dual carriageway between the M6 junction 36 and Brettargh Holt roundabout, along with the roundabout at junction 36. It forms part of the A590 scheme designed with a low carbon strategy to ensure safer, smoother journeys for road users.

The heavily trafficked route had come to the end of its life with potholes and uneven surfacing posing a safety risk to road users. HE's objective was to ensure the new road was constructed quickly, safely and with minimum disruption to customers and the local road network, while meeting its ambitious carbon reduction targets.

Achieving a carbon neutral scheme

Early contractor involvement (ECI) 18 months prior to the contract starting, with principal contractor AE Yates and designer AMEY, saw Aggregate Industries recommend a Foamix approach.

This design option meant that the structural layers of the existing road were recycled and reused back into the new road by producing an ex situ cold recycled asphalt which, when combined with the company's SuperLow asphalt, helped to achieve a carbon neutral scheme.

An onsite mixing plant ensured a continuous and consistent Foamix material. This was supported by a fleet of dumper trucks to transfer the mixed material to site and return the extracted planings, maximising efficiency and allowing 1,000 tonnes of Foamix asphalt to be laid per night. The team worked 24 hours a day across two shifts, ensuring minimum disruption to the local area and keeping ahead of all key deadlines.

Using this approach reduced CO_2 emissions and negated the need for, and costs of, truck movements relating to initial waste disposal or recycling to a remote plant, improving the sustainability credentials of the project. The result was a 43% reduction in carbon emissions compared with using conventional resurfacing materials and methods.

In a first for the asphalt industry, Aggregate Industries purchased a number of credits to offset the remaining carbon on the scheme through its partnership with Circular Ecology (a non-profit organisation).

Construction took place safely under COVID-19 regulations with 50,000 tonnes of material extracted from the original pavement and recycled.

Guy Edwards, CEO at Aggregate Industries UK, said: "By working collaboratively through ECI, we were able to identify a low-carbon approach designed to provide significant environmental and, in turn, cost benefits.

"As we continue to work more closely together as an industry and utilise our expanding range of eco-friendly products and services, we can start to make a real difference when helping to deliver essential infrastructure projects."

REDUCED CARBON FROM NEW RANGE

A NEW range of reduced carbon asphalts has been launched by CEMEX that includes the option to offset residual CO_{2e} to make it certified CarbonNeutral®.

VIALOW low temperature, low carbon asphalt, uses a bitumen additive to enable manufacture at up to 40°C lower than standard asphalt mixtures, without compromising performance, and with the added benefit of achieving up to 20% reduction in embodied carbon emissions.

Carl Platt, Director of Asphalt, Paving and Building Products for CEMEX Europe, said: "As technology and the industry shifts toward low carbon asphalt, the best interim way to sequester the rest of the CO_2 footprint, to make it a carbon neutral product, is through carbon offsetting. This is what we are doing, working with Natural Capital Partners, with VIALOW Zero."

In addition to its low carbon credentials, the new range offers customers other sustainability benefits associated with Warm Mix Asphalts including improved safety and efficiency, with increased shift outputs and earlier reopening to traffic, reducing disruption to road users.

"We recognise that future construction needs to be balanced with the effect it is having on the environment," added Carl Platt.

"We are committed to improving the sustainability of our operations and supporting our customers to do the same. This new range makes it simple for customers to choose more sustainable and environmentally-friendly asphalts that have a lower embodied carbon, offset residual emissions and help drive change."

Ensuring durability by keeping out the British weather is one of the benefits of interlayer bonding

MERITS OF A GOOD QUALITY BOND COAT

IN ORDER to ensure sustainable solutions for new roads, and maintenance interventions, they must be effectively designed and the installation must truly reflect that design.

All current design assumptions work on the premise that the full road structure acts as a single unit with all the individual layers bonded together, creating a monolithic structure. If there is a weakness within or between any of these layers, the assumptions of how the road pavement dissipates stresses are no longer viable. De-bonding between layers has been identified for decades in research carried out around the globe as a major compromising factor when assessing premature failures, determining remaining life and defining the need for maintenance interventions.

Bond coats becoming the default requirement

Gary Schofield, representing the Road Emulsion Association (REA), explains: "A good quality bond coat, incorporating a highly cohesive binder, at each and every layer interface, can contribute significantly to the durability of roads. Indeed, without them we run the risk of seeing earlier failures on our network, compromising the effectiveness of good asset management principles. The desire for more resource-efficient thinner road pavements in general, and particularly surface course layers, means that the need for good bonding is even more critical, and need to continue to be robustly specified, where modified bond coats are becoming the default requirement.

"The application of bond coat must be well controlled (too little will not provide sufficient 'free binder' to bond and too heavy an application could result in a slip plane being formed). The inconsistency of bond across a road pavement can often be seen in areas which have 'plated' off the surface. Modern, highly cohesive modified bond coats reduce the risk of slip planes significantly, while low surface-tack bond coats provide a greater protection against the risk of 'pick-up' on the wheels of the pavers and site equipment."

Malcolm Simms, of MPA Asphalt concurs, adding: "But it's not just about sticking layers together. In addition, bond coats play a critical role in protecting against the ingress of water. Engineers have known, for as long as roads have been built, that keeping moisture out of the layers of the road is fundamental to durability. For example, TRL Road Note 42 stresses how this role of the bond coat must not be underestimated, in conjunction with sealing of joints and open edges.

"The importance of bond coats is likely to become even greater with climate change scenarios predicting more frequent and intense wet weather events, as well as more extremes of temperatures. These will combine to challenge both the effectiveness of bond and the waterproofing function between layers of a road. Factor in predictions for traffic growth and increasing axle loads and the question tends to become: Bond Coats – how can you not?"

> "A good quality bond coat... can contribute significantly to the durability of roads."
>
> **Gary Schofield,** Road Emulsion Association

This has further been recognised across the sector, not least by the heads of materials and pavement engineering within the Highways Overseeing Organisations of England, Wales, Scotland and Northern Ireland all stressing that bond coats are essential in their specifications. In doing so, they seek to provide more durable, longer lasting assets with lower maintenance requirements and thus the delivery of more sustainable highways with increased service life and whole life value.

A comprehensive technical briefing note on the importance of bond coats, produced by the REA and RSTA, can be downloaded from https://rea.org.uk/bondcoat/

With climate change, interlayer bonding will become even more important

JOINT SCHEME BOOST TO CARBON SAVINGS GOAL

Westminster City Council and FM Conway have collaborated on a resurfacing scheme that will help the borough realise its goal of achieving net zero carbon by 2030.

> "This has been a great collaborative scheme between FM Conway and Westminster City Council."
>
> **Mark Flint,**
> Head of Technical,
> FM Conway

The Westminster street resurfaced with asphalt containing 85% recycled material

Resurfacing in progress

WESTMINSTER CITY Council is driving down the carbon emissions associated with road maintenance as part of its target to be net zero carbon by 2030.

Working with FM Conway, it has laid a Warm Mix Asphalt (WMA) surface course containing 85% recycled material on Third Avenue in the Queens Park district.

A single layer solution, SureLayer® E, delivered the high recycled content as a combination of high Polished Stone Value (PSV), Reclaimed Asphalt Pavement (RAP) and 'recovered aggregate'.

Delivering carbon savings

Mark Flint, Head of Technical at FM Conway, said: "This product is challenging conventions around the amount of RAP that can be incorporated in road surfaces and is also delivering carbon savings via the use of a more sustainable WMA technology.

"WMA is mixed and laid at a reduced temperature, which cuts energy usage and reduces the associated production carbon when compared to a traditional hot mix asphalt. As a result, the use of the combination of technologies in the overall scheme, including transport, has produced a 40% carbon saving."

In total, the 760 tonnes of material supplied by FM Conway's Heathrow asphalt plant were laid in a single layer by its surfacing division, which increased productivity and reduced the number of lorry movements by 55%.

"This has been a great collaborative scheme between FM Conway and Westminster City Council," added Mark Flint.

"Together we have maximised the amount of locally sourced recycled materials, as well as reducing the number of vehicle movements through the use of single layer technology. This also decreased the time spent on site resulting in us handing back the street to Westminster and its residents in an efficient and timely manner."

Phil Robson, City Highways Head of Operations, Westminster City Council, said: "This innovation supports the goal of achieving net zero carbon by 2030 while providing the durability we need to maintain our highways asset to the highest standards."

Benefits of the 85% recycled material used in the Westminster scheme:

- High recycled content contributes towards a circular economy and a more sustainable construction method for treating carriageways.
- The use of SureLayer® E means the carriageway can be resurfaced in one pass, reducing time spent on site allowing the highway to be reopened sooner and limiting disruption to the community.
- WMA reduces energy consumption and embodied carbon.
- WMA can provide greater durability due to reduced ageing of the bitumen in the manufacturing process.
- An odour suppressant was used in the manufacturing and installation of the material, helping to deliver a reduction in odours for both operational staff and the wider public.

DIARY DATES 2021

Some planned dates for your diary (subject to change):

15-17 June: **7th Eurasphalt & Eurobitume Congress: Asphalt 4.0 For Future Mobility** (online)
https://www.eecongress2021.org

15-17 June: **Traffex Parkex Digital 2021** (online)
https://www.traffex.com

1 July: **Future of Roads** (online)
https://transport.newcivilengineer.com/future-roads

5-10 Sept: **MPA/Newcastle University Asphalt Materials and Pavements course,** Newcastle
https://www.ncl.ac.uk/sage/collaboration/cpd/transport/asphalt-materials/

6-7 Oct: **Strictly Highways** (online)
https://lcrig.org.uk/events/strictly-highways-2020

21 Oct: **AIA Sharing Best Practice** (online)
www.asphaltuk.org/events

3-4 Nov: **Highways UK,** NEC, Birmingham
https://www.terrapinn.com/exhibition/highways-uk/index.stm

E&E CONGRESS GOES ONLINE IN JUNE

THERE IS still time to register for the 7th E&E Congress, which is taking place online from 15 to 17 June 2021.

The four-yearly congress for the asphalt and bitumen sectors, jointly organised by the European Asphalt Pavement Association (EAPA) and Eurobitume, will include a combination of presentations, workshops and poster sessions. There will also be opportunities for delegates to engage with speakers, sponsor organisations and exhibitors – all in a virtual environment.

The overall theme for the event, which was originally planned to take place in Madrid and was postponed from last year due to the COVID-19 pandemic, is *Asphalt 4.0 for future mobility*.

The main objectives of the E&E Congress 2021 are to:

- provide a platform for our industry and stakeholders to demonstrate and learn from the innovation and new technologies that have been developed and their impact on our products and processes over recent years;
- offer a unique opportunity for all stakeholders to engage, exchange ideas and network in a way that will encourage positive action in the future;
- stimulate discussions and debates that will help to steer a common approach to future challenges.

Among the planned sessions are:

- Future Roads and Mobility;
- Asphalt Mixture Performance and Testing;
- Health and Safety;
- Sustainability and Environment;
- Asphalt Production, Paving and Compaction Techniques.

All sessions will be available to view for three months following the live event.
For more information and to register, visit https://www.eecongress2021.org/

REGISTER FOR FREE INDUSTRY EVENT

THE AIA'S popular, free *Sharing Best Practice* event, aimed at local authority highway engineers, is being planned to take place on **Thursday October 21** between 10am and 1pm.

The agenda includes speakers covering a range of topical subjects highlighting sector innovation, local authority case studies and materials development. To register, email your name and contact details to: info@asphaltuk.org

For information on last year's event, including the speakers' downloadable presentations, visit: www.asphaltuk.org/events

Asphalt Now is published by the AIA, a partnership between the Mineral Products Association (MPA) and Eurobitume UK. The generic term 'asphalt' used in this magazine refers to the range of asphalts and coated macadams available in the UK. Views expressed in Asphalt Now are not necessarily those of the Mineral Products Association or Eurobitume UK.

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