



Jointmaster®

Authorised and approved systems and materials for repairing and reinstating highway defects.

- Reflective cracking
- Surface cracks and joints
- Seam joints
- Potholes and patches
- Surface defects

“We had problems with cracks on the motorway we look after... Jointmaster® has solved the problem.”

Maintenance Engineer,
Highways England Principal Contractor



Repairing surface cracks, joints and defects is the most cost effective way to extend the serviceable life of the existing road surface.

Sealing a highway is necessary to protect the sub-base layers from water ingress which would otherwise undermine the structural integrity of the highway.

The Problem

CRACKING



CONCRETE JOINTS, CRACKS & PATCHES



SEAM JOINTS



"In our experience of working with Rhino on road maintenance projects in the last couple of years, work is carried out quickly and efficiently which has enabled us to make savings from fewer nights of work. This is always pleasing for us as well as for our clients and the travelling public."

**Highways England
Principal Contractor.**

CRACKS IN LEANMIX SUBBASE



ROUNDBABOUTS



CRACKED ASPHALT PATCHING



JOINTMASTER® SUITABLE FOR:

- Motorways & Trunk Roads
- Airfield runways, taxiways & aprons
- Residential estates
- Bus routes & roundabouts
- Kerb edges
- County roads, estates & feeder roads
- Town and city roads
- Car parks
- Road stud recesses

POTHOLES



ROAD STUD HOLES



KERB EDGE SEALING



TREATABLE SURFACE TYPES

- Asphalt
- Concrete
- SMA
- Thin Surfacing
- Porous Surfaces
- Overlaid concrete & leanmix

REBATED / INLAID REPAIRS

Jointmaster® is a fully approved system for repairing all cracks, joints and surface defects in the highway. Developed to treat bituminous and concrete surfaces, defects are repaired and reinstated with Jointmaster, a bituminous compound which eliminates the original failure mode (movement) by virtue of its flexible and elastic nature.

The Solution



A LONG TERM SOLUTION

A durable repair which will seal and repair cracks in longitudinal and transverse directions of the carriageway and remain sealed throughout future movement cycles.

An economic and cost effective method of maintaining the highway pavement. The structural integrity of the road surface will be extended by the timely and effective treatment of surface cracks, sealing the surface against water ingress.

Minimum official expected life of 5 years with countless examples of lifespans 3 to 4 times that.

DUCTILE

Highly ductile material able to cope with most crack and joint movements whilst remaining undamaged. This ensures the surface remains watertight.

Unique composition incorporating rubber granules which increases load bearing capability and fibre glass strands which increase tensile strength and aid recovery under varying temperatures.

SKID RESISTANT

A dressing of high PSV aggregate to the surface of the repair provides a skid resistant finish with initial SRV ≥ 60 and SRV ≥ 50 after rut resistance testing. This ensures the safety of vehicles, especially two wheeled. Texture depth of $\geq 1.5\text{mm}$ initially and $\geq 0.75\text{mm}$ after wheel tracking contributes to reducing incidents of aquaplaning.

SEALS

Impervious to water and salt ingress, arresting further deterioration and substrate degradation by eliminating potential damage from the freeze-thaw cycle. Excellent adhesion to both bituminous and cementitious materials ensures a watertight seal. Repair materials accommodate extension movements in excess of 30% without cracking or detaching from the highway.

MINIMAL DISRUPTION

Fast installation, minimising costly traffic management. Road can be fully open to traffic at the end of each shift with works carried out under lane closures, stop & go or traffic lights. Year round installation fits in with contract planning timetables. Cold or damp weather does not affect our ability to operate.

IMPROVED RIDE QUALITY

Rebated repairs improve ride quality by eliminating the 'b-bump' noise from open transverse cracks and joints or surface applied repairs, providing a consistent and smooth riding surface. The flush finish of a rebated repair prevents damming of water, leaving designed cross falls in place.

PROVEN PERFORMANCE

BBA HAPAS approved since 2007, Jointmaster has been performing on motorways and trunk roads across the UK with numerous examples of it in excellent condition and still providing a watertight seal after more than 10 years.

JOINTMASTER® MATERIAL GRADES

Jointmaster® JMB

A flexible bitumen rubberised compound. Highly ductile, heavily polymerised. For repairing dynamic cracks where structural and/or thermal movement is still occurring. Complies with strict BBA requirements of texture depth, skid resistance, flexibility and wheel tracking.

Jointmaster® IMP

A high modulus bitumen compound for repairing patches and static cracks where no movement is expected. High rut resistance and yield strain. No material flexibility required. BBA HAPAS approved as a stand-alone product or for use in conjunction with JMB grade for pre-filling deep joint repairs.

Jointmaster® JMC for Concrete

Repair materials for concrete surfaces such as spalled joints, crack and patches. Flexible to cope with movement. Concrete coloured materials available.



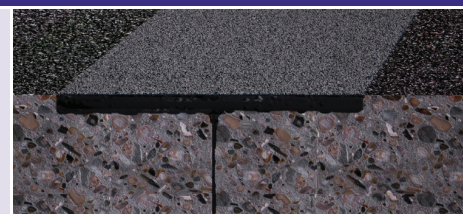
JOINTMASTER® JMB INLAID REPAIR FOR DYNAMIC AND/OR STATIC CRACKS

- Rebated 10mm to 20mm into the surface and sealant applied flush with the highway surface.
- Approved for single and multiple cracks in asphalt.
- Ideal for reflective cracks caused by leanmix and PQ concrete subbase.
- Approved for unlimited crack widths and repair widths.



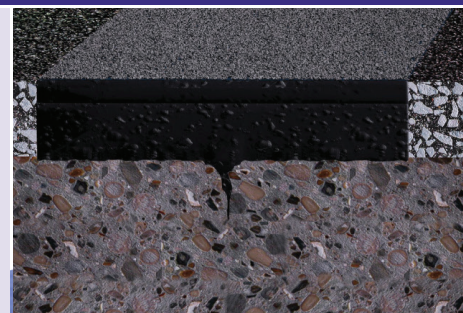
JOINTMASTER® FOR CONCRETE CRACKS AND JOINTS

- Rebated into the concrete and sealant applied flush with the highway surface.
- Suitable for bridging expansion & contraction joints without the need to reform joints.
- Approved for application from 10mm depth for shallow repairs up to 100mm depth for patches and severe deterioration.



JOINTMASTER® JMB COMBINED WITH IMP FOR MAJOR REPAIRS

- Approved for repair depths of between 40mm and 100mm.
- High rut resistance system for HGV routes, motorways & roundabouts.
- Treats multiple and severe cracking.
- Retains flexibility required to maintain surface integrity.
- Ideal for seam joint repairs on motorways and trunk roads.
- Overlays on PQ concrete slabs.
- Approved for patching and pothole repair.
- Approved for filling holes left from removal of road studs.



BBA HAPAS

The BBA along with the Highways Agency, LOTAG, HiTAC and CSS agreed to set parameters for testing and approving crack sealing systems for highways under HAPAS, to align the numerous proprietary systems available into a minimum national standard encompassed by clause 711 of the specification for highway works.

BBA HAPAS SEGMENTS AND CORRESPONDING PERFORMANCE CRITERIA	SIMPLE OVERBAND	FILL AND OVERBAND	INLAID FLEXIBLE GRADE JMB	INLAID HIGH MODULUS GRADE IMP
Maximum Crack Widths	Up to 5mm	5mm to 40mm	Unlimited	Unlimited
Maximum Band Widths	40 mm	200 mm	Unlimited	Unlimited
Texture Depth initial ≥1.5mm and after wheel tracking ≥0.75mm	Not Required under HAAPAS	✓	✓	✓
Skid Resistance Value initial ≥60 and after wheel tracking ≥50	✓	✓	✓	✓
Flexibility (Elongation under load test at 30%)	Not Required under HAAPAS*	✓	✓	✓**
Wheel tracking rut resistance requirements	Not Required under HAAPAS	Not Required under HAAPAS	✓	✓

* Whilst not required under HAPAS, Jointmaster Simple Overband passes the 30% elongation test making it ideal for repairing small cracks.

** When combined with a JMB topping layer.

Inlaid flexible systems have over the years proved to be the ideal method of treating longitudinal and transverse defects consistently and remain the preferred solution for durable highway crack repairs.

FLEXIBLE VS HIGH MODULUS: THE DIFFERENT MATERIAL GRADES

Grade ‘F’ (Flexible) is the grade where flexibility is required and is therefore the most commonly used. The recommendation from the Specification for Highway Works recommends the use of Grade F *where significant crack movement is anticipated, for example cracks in overlays to jointed concrete carriageways.*

Grade ‘H’ (High Modulus) has suggested use *where cracks do not penetrate through the pavement structure and significant movement is unlikely to occur; or for small patches in wheel tracks.*

Estate Road installation in East Sussex.
Repairing cracks in thin asphalt overlay on a concrete base.



M4 Motorway Bristol.
Seam joints repaired as part of Smart Motorway Scheme.





TOP 10 JOINTMASTER® FACTS & FIGURES

1. Material setting time from as little as 30 minutes before opening to traffic.
2. One million linear metres installed across UK roads.
3. Evident on 70% of the UK motorway and trunk road network.
4. F grade flexibility with extension of 30% without cracking or detaching.
5. 3 key registrations: ISO 14001:2015, ISO 9001:2015, OHSAS 18001:2007, aligned to your operation.
6. 25mm per annum: the rate of crack propagation through untreated asphalt.
7. 4% the typical amount of a road surface failing due to cracks. 96% still functioning as designed.
8. 1988: First installation of rebated crack repair in the UK.
9. Up to 5 years minimum expected life of a Jointmaster® flexible repair.
10. 1st Jointmaster® BBA/HAPAS certificate in 2007.

OUR PROMISE

Our senior management team has over 100 combined years experience of the highways and structures repair and maintenance market, so we know the industry's 'best', as well as its 'worst' practices. When we set up Rhino, we were adamant that we would build a business based on:

- Authorised and approved systems and materials for repairing and reinstating highway defects.
- Excellent customer service.
- Providing a highly responsive service.
- Being flexible to meet customers' specific requirements.

Therefore, when you deal with Rhino, you are guaranteed that there are no hidden extras. The price we quote includes:

- All materials, labour and plant necessary to complete the work.
- A site inspection - to assess the work prior to quotation.
- A clear, unambiguous, firm quotation which we honour.
- A programme which specifies timescales required to complete the works - **and we keep to it.**

Our pledge to you is that we will always provide you with a highly responsive and flexible service, use the best material for the job and never over promise and under deliver.

Steve Loader
Director

"Rhino carried out concrete joint and thin bond repairs to areas requiring attention on the M18 and M180 using their Jointmaster products. The repairs proved successful, with both the product and Rhino performing in line with our expectations."

Aone+ Area 12 Super Agency



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