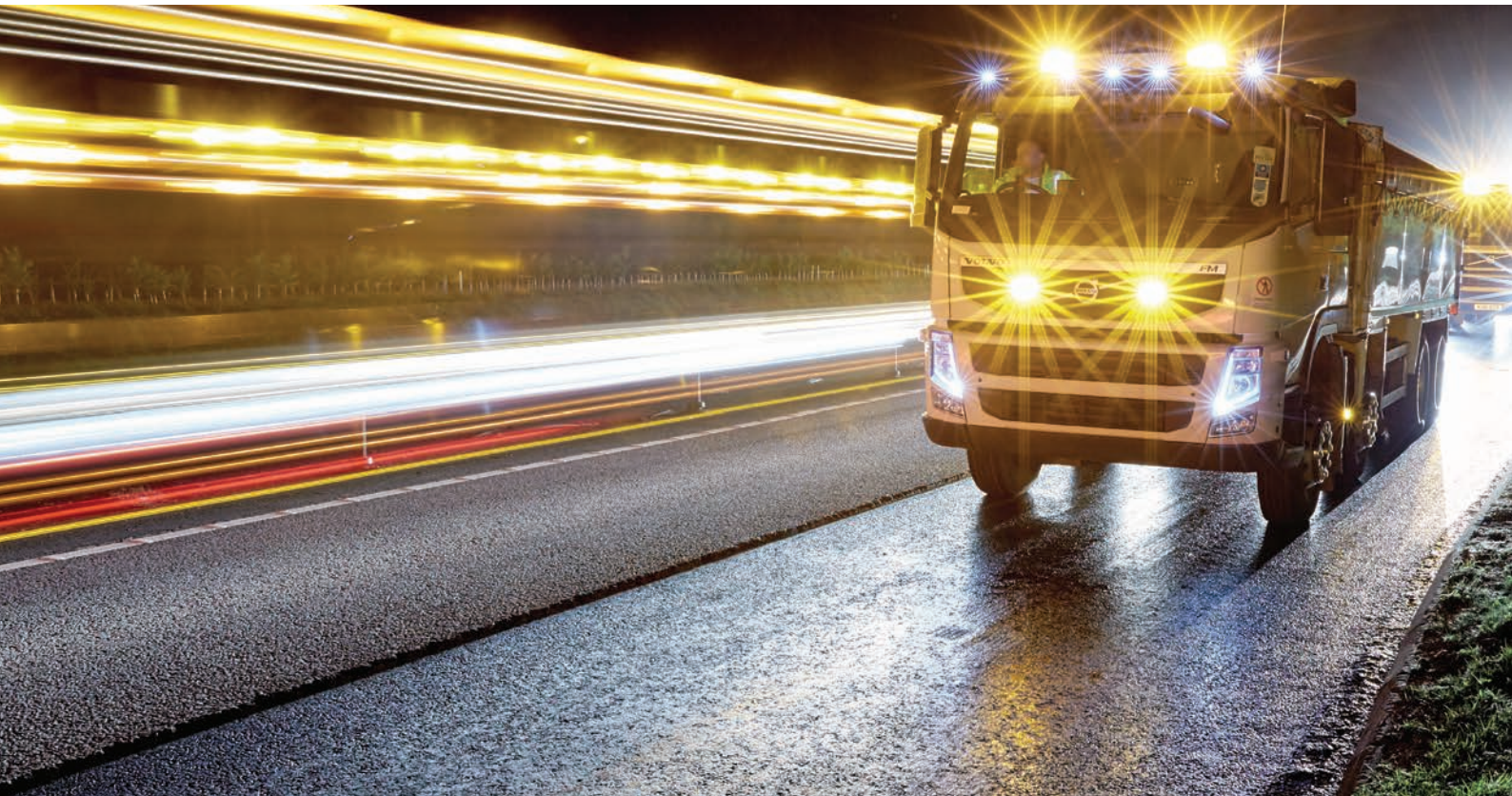
Heidelberg Materials

Asphalt aftercare – operation and maintenance manual

This document is designed to help you maximise the performance and lifespan of your asphalt. It contains recommendations for the use, maintenance and end-of-life resource utilisation of your asphalt.

About your asphalt

- Asphalt is a mixture of aggregates and bitumen.
- Aggregates used in asphalt are graded and vary in physical properties based on specification requirements.
- Aggregates may be naturally occurring (e.g. limestone, gritstone, etc.), artificial (e.g. slag aggregates) or recycled (e.g. road planings, glass etc.).
- Bitumen is a hydrocarbon derived from the distillation of petroleum crude oil and may be synthetic or modified by the use of polymers and other chemicals.
- Bitumen is thermoplastic in nature and softens as ambient and material temperature increases.
- There are many different types and derivatives of asphalt available, such as Stone Mastic Asphalt (SMA), Thin Surface Course Systems (TSCS) and Hot Rolled Asphalt (HRA) but the recommendations as set out in this document apply to all of them.



Use of your asphalt

- Where asphalt is installed during hot weather, heat within the freshly laid material will be retained for longer. Loading and use by traffic should be avoided or restricted until the material has sufficiently cooled. Newly installed asphalt or that which has been exposed to high ambient conditions can be sprayed with water to accelerate and provide cooling.
- Asphalt should only be subject to loading forces and traffic volumes within the limits of the design or specification it was constructed to. Exceeding these limits can result in conditions like rutting, cracking and reduced operating life.
- Abrupt vehicle movement, on-the-spot wheel turning and heavy point loading (e.g. scaffolding, jockey wheels, outriggers, etc.) can result in marking and should be avoided. Asphalt is most prone to this in the first summer after installation before the bitumen has had time to gradually oxidise and harden.
- The thin film of bitumen coating aggregate in the surface, wears away with use (e.g. from repeated contact with vehicle tyres). This is normal and where different aggregate properties are specified across the surface, there may be some colouration differences.
- Exposure to fuel, oil, solvents, strong acidic and similar substances can soften, dissolve, and cause long-term damage to asphalt. Where spillage occurs, substances should be cleaned up as quickly as possible following COSHH guidelines. Following clean up, the surface of the asphalt should be washed with copious amounts of clean water and lightly brushed to dilute and remove any remaining residue.
- Storage and working with materials such as cement, concrete and aggregates can lead to staining and spoiling the appearance of asphalt. These materials should also be cleaned up as quickly as possible following COSHH guidelines. Following clean up, the surface of the asphalt should also be washed with copious amounts of clean water and lightly brushed to dilute and remove any remaining residue.
- Rock salt/grit can be used to help provide traction and grip during freezing conditions. Rock salt/grit use should be kept to a minimum as residue present on the asphalt surface following thawing may build up in the surface texture and affect skid resistance or lead to damage. Use of anti-freeze and de-icing solutions/chemicals should be avoided.

WATER COOLING

USE WITHIN LOADING LIMITS

DAMAGE FROM CHEMICALS

DEALING WITH FREEZING CONDITIONS

Maintenance of your asphalt

- Regular visual inspection of asphalt surfaces – performed at a recommended frequency of twice per annum for porous asphalt, and once per annum for all other types of asphalt – helps identify dust and debris build-up, cracking, weed and vegetation growth. Additional inspections should be performed immediately after hot weather or freezing spells, temporary changes in use, reported spillages and similar events.
- To help maintain appearance and prolong life, asphalt surfaces should be cleaned at least bi-annually. Porous asphalt surfaces should be carefully cleaned using a soft brush and moderate pressure washed using cold water and mild detergent cleaner. All other types of asphalt should be vacuumed cleaned using a road sweeper or similar vigorous cleaning methods.
- Cracks that develop in asphalt should be treated with a bitumen sealant to prevent water ingress and damage. Cracks commonly develop from movement in the substrate asphalt was laid over, and the type of crack treatment will depend on use of the asphalt and extent of movement. Typically, the overbanding of cracks with bitumen sealant can sufficiently fill and seal it to prevent deterioration.
- Weed and vegetation growth is common in and through cracks in asphalt. These should be sprayed with an aqueous root weed killer. Dead foliage should be carefully removed. Do not attempt to pull live roots out as this can disturb and break-up the asphalt.

INSPECT REGULARLY

CLEANING REGIME

REMOVE VEGETATION

Residual hazards, removal and disposal of your asphalt

- Asphalt is NOT classified as dangerous in accordance with Directive 67/548/EEC or EC 1272/2008. Asphalt is not a dusty material, but respirable dust may be released when it is cut, drilled or milled. If dust is inhaled over a prolonged period or extended period, it can lead to long term health issues so any removal and repair activities need to be carefully planned and performed with suitable means of dust suppression.

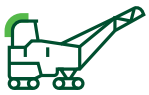
Hazardous ingredients

Substance name	EC No.	%	DSD Classification	CLP Classification
Crystalline Silica	238-878-4	Variable	Xn; R48/20	H372; STOT RE1

- If fire occurs on an asphalt surface, hydrocarbon fumes and dense smoke may be released. Water reacts with hot bitumen making it froth and spit. As such dry powder and foam are suitable extinguishing media. Do NOT use water fire extinguishers. CO_2 is also not a suitable extinguishing media.
- When repair is needed or your asphalt is at the end of the operating life, consideration should be given to the bitumen and aggregate it contains as these are finite resources. Asphalt waste is classified as non-hazardous, but should be disposed of in accordance with both local and national legal requirements.
- Asphalt waste should preferably be used in new asphalt mixes to realise most value from the finite resources it contains. Alternatively, asphalt waste can be used as secondary/ recycled aggregate at sites with appropriate valid exemptions. It is unusual for asphalt waste to need to be disposed of at landfill.
- Asphalt is typically removed using a cold milling machine unless the area is small whereby the edges should be cut vertically with a circular saw and the asphalt broken out to full layer depth using a pneumatic hammer/breaker.

100% RECYCLABLE

REDUCE YOUR CO_2



ASPHALT PLANER

Should you require any assistance or advice on your asphalt, please contact technical for further information:

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