



## *Independent approval for Emcol*

Emcol's UK manufacturing licensee, Tarmac Limited, has gained independent certification for the performance and durability of an instant road repair compound based upon Emcol Mixing Liquid.



RoadMaster™ has been approved by the British Board of Agrément (BBA) under the Highways Authority Product Approval Scheme (HAPAS). Based upon Emcol Mixing Liquid as its binder system, RoadMaster™ has been approved under HAPAS as a cold-lay repair material for the permanent repair and reinstatement of Type 2, 3 and 4 roads, footways, footpaths and cycle-tracks.



Certification under HAPAS is a significant achievement, for the approval process and the performance standards required are detailed, rigorous and demanding.

HAPAS has been set up by the UK Highways Agency and BBA to develop national approval arrangements for innovative products, materials and systems used in highways. BBA has been providing authoritative and independent information on the performance of construction products for over 35 years. Product assessment involves laboratory testing, site inspection undertaken by BBA's own inspection services team and factory production control.



HAPAS specialist groups draw up guidelines, performance test and assessment criteria and quality assurance requirements which BBA then uses in its evaluation and certification of products. These specialist groups are set up by the Highways Industries Technical Advisory Committee (HiTAC), whose

members are drawn from organisations with technical expertise in highways work.

A guideline for the approval of permanent cold-lay surfacing materials (PCSMs) has been developed by BBA with approval of HiTAC. The guideline includes monitored approval trials at a minimum of two separate sites representing a range of traffic conditions. One site is chosen to provide light traffic conditions, with a second site providing heavier traffic conditions. In the trialling of repair materials used in roads, light traffic conditions are obtained by laying the product in a lightly-trafficked Type 4 road, remote from the line of the wheeltrack. Heavy traffic loading is provided by a trial site within a medium to heavily trafficked Type 3 road, within the line of the wheeltrack.

The duration of the on-site trials is two years and involves the monitoring of the initial product application and placement, regular six-monthly visual inspection and surface profile measurements, and a final inspection with the removal of core samples from the repair area for laboratory testing.



In the laboratory, tests are carried out on at least six core samples taken from each trial site to measure void content, elastic stiffness and resistance to permanent deformation. Indirect tensile stiffness modulus testing is carried out in accordance with British Standard DD 213 and repeated load uniaxial creep resistance to permanent deformation testing is determined in accordance with British Standard DD 226. The results of these tests are compared with the specification requirements agreed by BBA and HiTAC for permanent cold-lay repair compounds.

The data generated from these key elements is considered by BBA's technical experts in the context of the requirements set out in the guideline. If the data is acceptable, a draft HAPAS certificate is reviewed by the members of HiTAC prior to the certificate being formally issued.

BBA's involvement with the product does not end with the award of the HAPAS certificate. Surveillance visits to the production sites where the product is manufactured are normally conducted twice yearly to ensure that the specification for the product is being maintained. Additionally, at the end of each five-year period, a formal review process is carried out. In this way, specifiers and end-users can be assured that the product covered by the HAPAS certificate will perform as stated for as long as the certificate remains valid.

Emcol's road repair technology is specially engineered for fast, one-stop permanent reinstatements. Emcol IRR is manufactured in over twenty countries around the World, using approved aggregates and Emcol Mixing Liquid at dedicated production units.