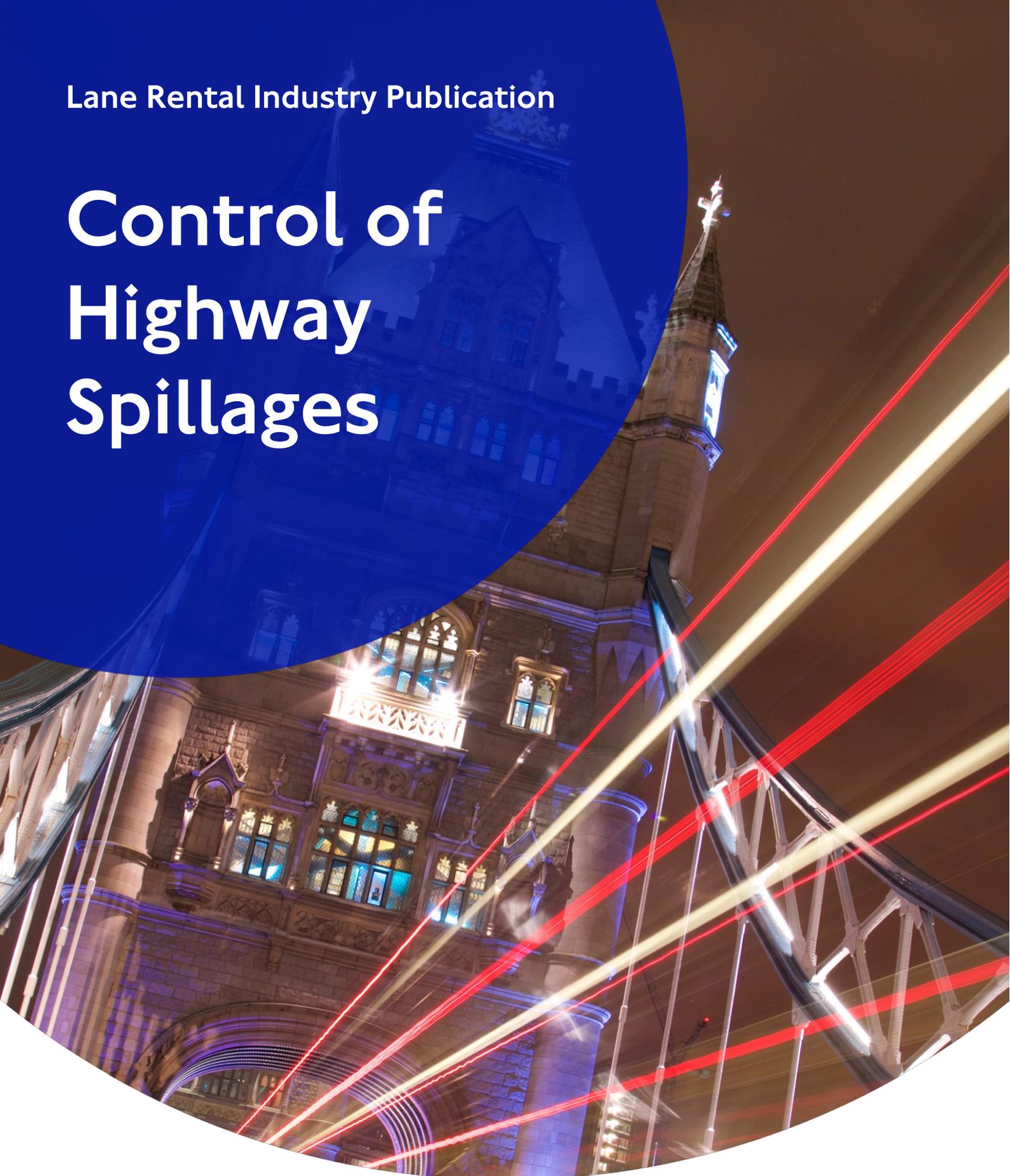


Lane Rental Industry Publication

Control of Highway Spillages



EVERY JOURNEY MATTERS

Highway Spillage Response

Introduction

On 24 May 2016, a crane being towed by a lorry spilled hydraulic fluid inside the Blackwall Tunnel, making the road surface slippery and therefore hazardous to vehicles. Operatives deployed in response to this tried to clean away the fluid but after being tested for skid resistance by the police, the surface was still deemed to be a danger and the tunnel had to be resurfaced. This resulted in the closure of the tunnel northbound for almost 24 hours.



It became apparent that TfL required more in depth knowledge on how to deal more effectively with spillages.

The Project

The purpose of the trial was to investigate the effect of a spillage for four contaminants onto three pavement material types and subsequently to report on the effectiveness of post contamination clean-up treatments by each of six selected liquid dispersants and a single absorbent.

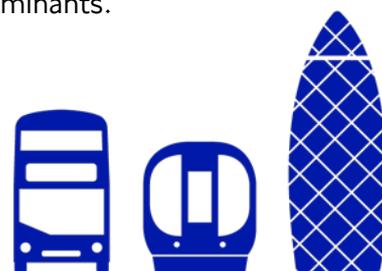
The asphalt types used were Hot Rolled Asphalt (35/14) with 20mm pre-coated chippings, a dense asphalt concrete surfacing (Superflex®) and a 10mm thin surfacing complying to Clause 942 of the Specification for Highway Works.

The contaminants used were Diesel, Paraffin, Cooking Oil and Hydraulic Fluid.

The cleaning products used consisted of six liquid degreasers (varying formulations) and clay granules – the latter being the adopted solution at the time.

The above led to a total of 84 test panels each of which were tested for skid resistance and texture depth prior to being contaminated and cleaned. Post cleaning, each operation panel was re-tested for skid resistance and texture depth to assess how well the cleaning product performed with regards to restoring surface properties. All testing carried out conforms to the relevant European and British standards and was carried out by an accredited testing house.

Each of the test panels was also cored post completion of trials and a sample taken to a laboratory to assess the residual hydrocarbon within the panel. The results of this analysis would confirm whether post clean-up resurfacing would still be required with certain contaminants.



Outcomes

The trial has shown that by using the right formulation of degreaser, it is possible to clean the spillage and have the surface ready for use much quicker than the Blackwall Tunnel incident.

It is evident that with most contaminants the right type of degreaser would provide sufficient success to enable a quick re-opening of the highway. The report also highlights the inefficiencies of the use of clay granules (as per previous working methods).

It is also evident that when diesel is spilled on the highway a secondary operation of resurfacing is still required as diesel significantly damages asphalt. This resurfacing operation does not necessarily have to happen immediately if effectively cleaned quickly and can therefore be delayed until traffic conditions are more favourable. This allows for much more careful planning of resources and would allow for a quicker more effective operation.



Conclusion / Recommendations

The trials have shown that with the right products, TfL can deliver an improved service and mitigate traffic disruption that can arise from implementing whole sale emergency remedial measures. In summary the trials show that the previous methods of working (using clay granules) provide little or no added benefit to the clean-up operation and this method should no longer be employed on the Transport for London Road Network.

The results from this project shall be shared with service providers ensure that this type of cleansing is applied across all areas of TfL's network.

In addition, a pro-active cleansing regime in areas of high risk such as tunnel bores shall be considered. Unlike normal open carriageways, highways running through tunnels are not exposed to natural cleansing from rain and therefore tend to be dirtier and to accumulate hydrocarbon residuals over time. This in turn, increases the risk of skidding within the tunnel bore.

It is recommended that further testing is carried out during clean-up operations from day-to-day incidents to better understand the performance of degreasers and to enhance the knowledge of any residual risk from those cleansing operations.



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Date: November 2017

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