



Start date: 1st September 2015
 Duration: 24 months
 Budget: €531 956

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Development of Ravelling Test

A CEDR Transnational Road Research Programme under Call 2014, Asset Management and Maintenance



funded by Belgium-Flanders, Finland, Germany, Ireland, Norway, Netherlands, Sweden, United Kingdom and Austria

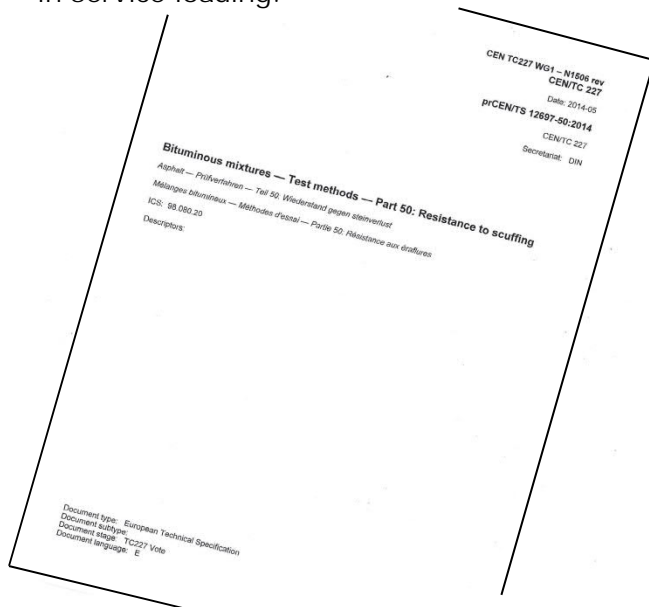


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Motivation

Ravelling is a common mode of early failure for many types of asphalt pavement. There are several potential causes for this loss of aggregate particles, so it is difficult to assess the theoretical potential to ravel of an asphalt mixture in the design stage. Recently several simulative laboratory tests have been developed that are claimed to give an indication of that potential. These tests use scuffing machines that repeatedly apply a scuffing action to slab samples to replicate in service loading.



The test methods for four such scuffing machines have been written up as a draft technical specification by Comité Européen de Normalisation (CEN) as prCEN/TS 12697-50, Resistance to scuffing. However, these methods need to be culled or combined so that there is only one (harmonised) test method for this one property before the technical specification can be converted into a test standard.

Description

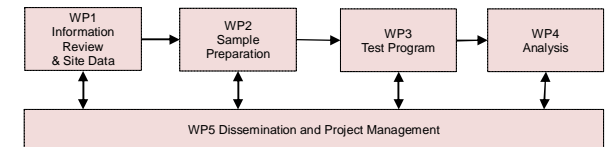
This project will look at the methods of test and the results produced for the four scuffing machines in order to identify:

- The extent to which sample preparation needs to be standardised, such as compaction level, evenness, storage conditions and age when tested.
- The most effective method of measurement in terms of extent of differentiation, validity as a measure of ravelling and practicality.
- Whether the results from one or more scuffing machines can be validated from experience on site.
- Whether the results from different scuffing machines can be converted to a common measure.
- Estimates of the precision of the results with each scuffing machine or, if the results can be converted to a common measure, of the common measure.
- Whether the results from either pair of similar machines are comparable and their results are reproducible.
- A procedure to identify if other scuffing machines can be used for the standard test.

These findings may be the same for all asphalt mixture types or different for different types.



Project organisation



The work package leaders are:

WP1	Review	TRL
WP2	Sample preparation	BAM
WP3	Test programme	BRRC
WP4	Analysis	TNO
WP5	Dissemination	TRL

Project outputs

- D.1 Webpage and flyer for project
- D.2 Review of parameters influencing propensity to ravel
- D.3 Compendium of sites and the extent of ravelling
- D.4 Result reporting template
- D.5 Report detailing properties of manufactured slabs
- D.6 Interim report
- D.7 Factual report on test results
- D.8 Report on analysis of results
- D.9 Final report giving recommendations for the standard

All project outputs, once delivered to and approved by the client, will be available on the project website at:

www.dratproject.eu