PROJECT PROFILE

Title	**Variation of the friction characteristics of road surfacing materials with time**
Contractor	University of Ulster, Jordanstown
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Start date	Apr-10
End date	Mar-13
Status	On-going
Type of project	Research Fellowship: 3-year PhD project
Project reference	RFP012/09

Description	The lifespan of surfacing materials can vary from a very short duration when temporary surfacing is considered, up to 25 years for permanent surfacings. Throughout their lifespan the surfacings are expected to contribute to the provision of an adequate level of friction. The purpose of this research is to examine the variation of friction characteristics of road surfacing materials with time. The research will focus on the contribution of aggregate characteristics (eg, polished stone value), profile depth and contact area to friction and how these vary with time in the short, medium and long-term lifespan of pavement surfacing.
Objectives	The main objective of the research is to ensure that appropriate materials are used that take account of the expected service life of the surfacing whether this is a temporary running surface or a long-life surfacing. The study will include the development of guidelines for the use of surfacing materials such as Dense Bitumen Macadam (DBM) as a temporary surfacing, and the range of approved permanent surfacings permitted in accordance with the Irish Design Manual for Roads and Bridges.
Benefits	The research will address the issue of the relative duration of the surfacing material and the aggregate properties necessary to ensure an acceptable skidding resistance over its lifespan. There can be considerable variation in expected lifespan such as c.7 years for a surface dressing up to 25 years for a Hot Rolled Asphalt with pre-coated chippings. With an improved understanding of the requisite operational aspects of the mixes it may be possible to use more readily available materials, and thereby reduce whole life costs and reduce the environmental impact of transporting suitable materials over long distances. The project will include a study of the suitability of Dense Bitumen Macadam (DBM) as a temporary running surface for vehicles. Investigations into the friction and durability characteristics of DBM in relation to mix, aggregate type and site conditions will enable a more complete understanding of the material to be developed.
Outputs	Specification for the use of appropriate surfacing materials on Irish roads. Best practice guide and risk assessment.