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## STUDY OF A ROAD TEST TRACK WITH AND WITHOUT CRUMB RUBBER. SOLUTIONS FOR NOISE POLLUTION

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### Abstract

End-of-life tires are waste materials that pollute landscapes when they are disposed of in tire dumps. However, its life cycle is not finished when they are scrapped. The rubber of end-of-life tires could be used for new purposes as construction material in road rehabilitation. A gap-graded mix characterization was carried out in this work by means of laboratory and field performance tests. The mixture has a high content of crumb rubber (CR) by weight of bitumen. Crumb Rubber was added to the binder by a wet process. Close proximity methodology has been used in *in-situ* characterization of the acoustic behaviour. Moreover, absorption and dynamic stiffness tests were also conducted to determine the noise generation mechanisms involved in noise. According to the results achieved, a reduction of the noise emitted by the tire/pavement interaction could be accomplished with the construction of roads with mixture with CR added by a wet process. In addition, this would result in a decrease of the amount of waste tires in landfills.

*Key words:* crumb rubber, end-of-life tire, noise pollution, tire/road noise

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