

Concrete Roads Save Fuel

Fuel consumption will be cut by 1.1 per cent if the road surfacing consists of concrete instead of asphalt. This is shown by a study VTI has performed on fuel consumption on asphalt and concrete surfacings.



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Measurements were made at rural road, speed 90 km/h, on a section of road outside Uppsala. This is a road with two types of surfacing, asphalt and concrete.

– An earlier VTI study provided indications that there is a difference in fuel consumption between an asphalt surfacing and a concrete surfacing. Extended measurements were therefore started at the beginning of June 2008, says research engineer Bengt-Åke Hultqvist of VTI.

Sections of asphalt and concrete were chosen so that alignment and inclination should be as similar as possible. Both sections are on a slight bend and have a slight

inclination to the north. In order that the cause of any differences between the asphalt and concrete surfacings may be reliably identified, the surface characteristics of each surfacing were also investigated.

The results of measurements have shown that fuel consumption on the concrete surfacing was 1.1% lower than that on the asphalt surfacing. It was established that this difference was statistically significant throughout the analysis. The main reason for the lower fuel consumption on the concrete surfacing is its lower rolling resistance which can, in turn, be associated with the measured differences in longitudinal surface evenness and macro texture.

Calculations with the fuel model VETO which takes into consideration the state of

the surfacing also give a difference of about 1% in fuel consumption between the surfacings. This is in good agreement with the fuel measurements made on the road sections.

– Which, in turn, confirms that the VETO model can be used in making forecasts of fuel consumption for other road sections with asphalt and concrete surfacings, where the longitudinal surface evenness and macro texture are known.

Read more: Measurement of fuel consumption on asphalt and concrete pavements north of Uppsala, N31-2008

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If one assumes that we have 10,000,000 cars in Australia, doing 15,000 km/annum at 10 l/100 km and fuel costing \$1.20/l – this amounts to a saving of **~\$200,000,000** per annum!

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