

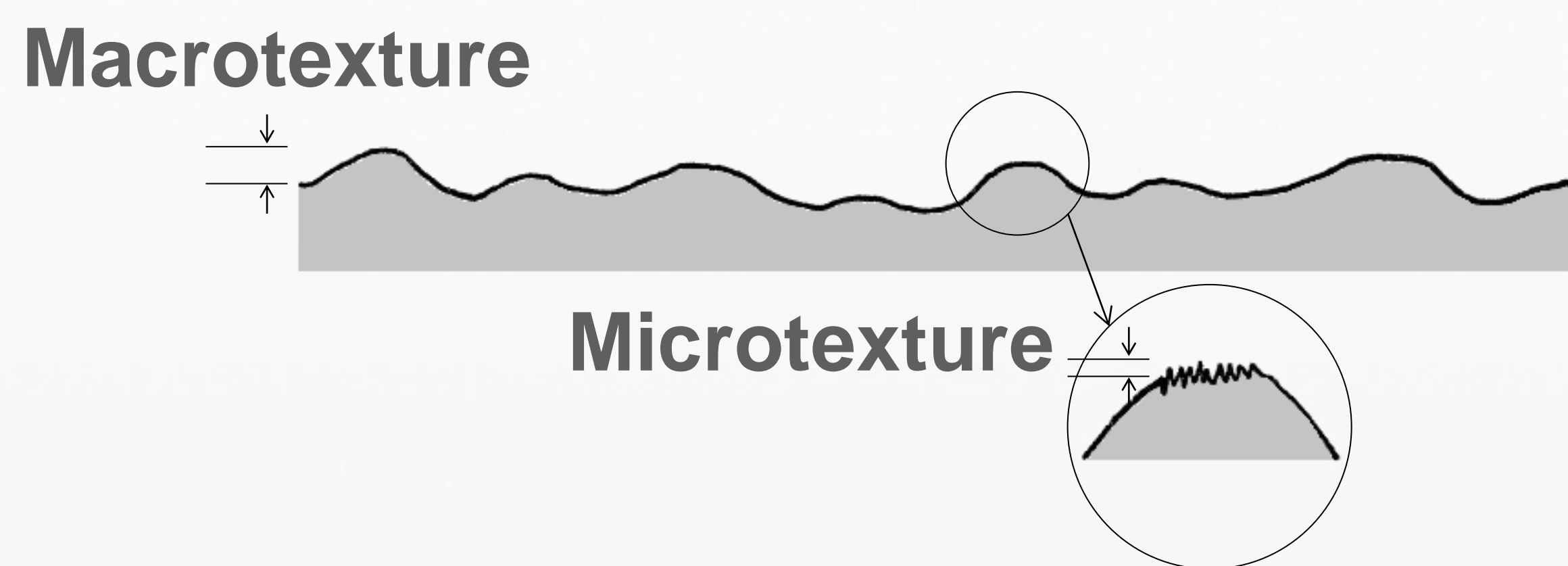


Microtexture and skid resistance

Alan Dunford

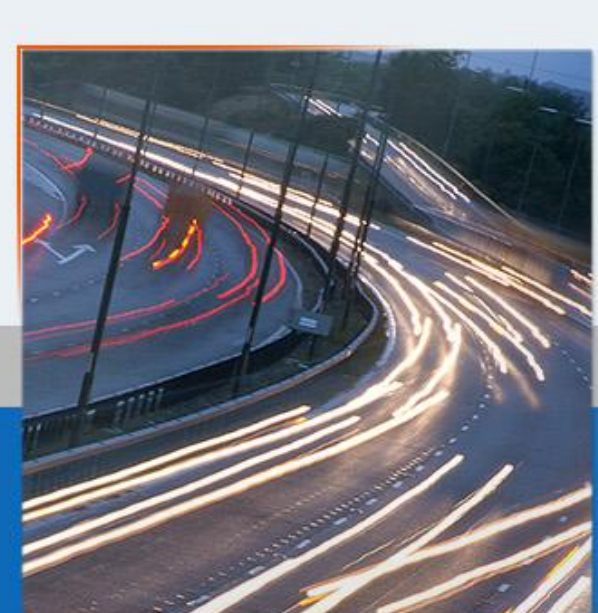
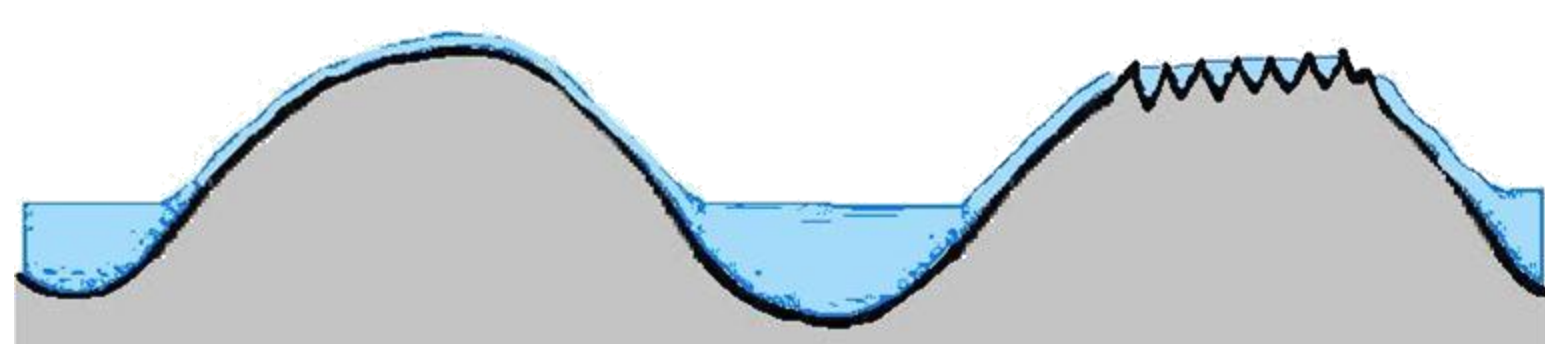
What is microtexture?

There are two scales of texture on the road surface that are considered important for skid resistance. Macrottexture has wavelengths between 0.5 and 50 mm and is typically related to the spaces between stones. Microtexture is smaller, with wavelengths less than 0.5 mm, and is typically related to the rough surface of each individual stone.



Why is it important?

When the road is wet, bulk water is channelled away by macrottexture which is increasingly important as vehicle speeds increase. However, a thin film of water will still remain on the surface, and the microtexture is required to break through the water to make contact with vehicle tyres. The amount of microtexture is thought to be directly related to a surface's skid resistance. Microtexture also changes over time under the polishing action of traffic, and it is important to use aggregates that provide good initial microtexture as well as resistance to this polishing.



Characterisation

An understanding of the polishing process at the level of microtexture may improve methods of measuring skid resistance and aid the prediction of changes in skid resistance over time. Research is underway to develop measurement techniques that characterise microtexture roughness in such a way that it can be compared directly to surface skid resistance.

Observing polishing

An experiment has been carried out to show how microtexture changes with surface polishing. A sample of road surface aggregate was subjected to simulated polishing in the laboratory. By making a cast of the surface before and after polishing, it has been possible to compare identical regions of the surfaces using scanning electron microscopy.

