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Fuel susceptibility of surface dressings using and patch method

Once a road is opened to traffic it starts to damage. More frequent damage can be observed especially in front of petrol stations, at bus bays and upgrades where spillage of fuel is very common. Consequently the aggregate within the fuel patch will be thrown off under the action of tires damaging the road surface.

This test was designed to find out the effect of a binder or modified binder for susceptibility of fuel and hence suitability of the binder for a particular surface dressing. The test can also be modified to assess the deterioration due to spillage of fuel on road surfaces. The deterioration is determined in terms of changes in properties of the surface caused by fuel spillage.

The macro texture of the road surface is on of the properties that change under the action of fuel. The sand patch method, which is explained in the standards, ASTM E 965-1987.

The surface dressing which was to be tested was applied on to a model that simulates a substrate of a flexible type of pavement. Texture depth of the surface is measured by using the sand patch method before applying fuel.

Final texture depth is measured in a similar way after storing the fuel-applied models for the designed time period in laboratory at room temperature. The arithmetic difference between the two values explained as a percentage gives the damage due to the fuel spillage.