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Sideway-force Coefficient Routine Investigation Machine SCRIM® / SCRIMTEX

W.D.M. Limited is the sole licensed manufacturer worldwide of the SCRIM® machine, working under license to the UK Transport Research Laboratory (TRL). The SCRIM vehicle is manufactured in full compliance with the current British Standard BS 7941-1:2006.

SCRIM machine surveys helps reduce accident rates by measuring the wet skidding resistance of a road surface and is ideal for network skidding resistance surveys, with a daily survey capacity of 200 to 300 km's depending upon road type.

The measurements can be used to identify lengths of road that are at or below investigatory levels defined for particular road categories. A SCRIM machine survey in the UK can be undertaken at two different target test speeds 50 and 80 km/h.

The permitted speed range covering these target speeds is 25 to 85 km/h. Skidding resistance data recorded at speeds within this range can be speed corrected to give equivalent values at 50 km/h. The higher target speed should only be used where the posted speed limit is greater than 50 km/h and where it is considered safe by the driver of the SCRIM vehicle.

The SCRIM machine requires an operator and a driver. Skidding resistance data are recorded continuously by the SCRIM equipment and stored as an average for each 5, 10 and 20m section of road. The operator controls the survey and adds location markers to the data stream during the SCRIM machine survey.

Data is stored on USB flash drives for ease of processing. During periods of testing, the SCRIM equipment is calibrated before and on completion of each days testing.

Test wheels are mounted mid-vehicle, in both the nearside and offside wheelpaths, at an angle of 20 degrees to the direction of travel. The test wheel, which is fitted with a smooth pneumatic tyre of standardised hardness, freely rotates and is applied to the road surface under a known load.

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A controlled flow of water wets the road surface immediately in front of the test wheel and when the vehicle moves forward, the test wheel slides in a forward direction on the wet road surface. The force generated by this action is related to the wet skidding resistance of the road surface.

Measurement of this sideways force allows the sideway-force coefficient to be calculated as an average for each continuous 5, 10 and 20m section.

SCRIMTEX is a development of the SCRIM machine and supplements the wet road skidding resistance by measuring the surface macro-texture in front of the test wheel. This can be achieved in both wheeltracks of a double-sided SCRIM vehicle and provides, in conjunction with air and surface temperature, the ultimate requirement for the assessment of road surface condition monitoring for network surveys. Processing is undertaken using a suite of computer programs.

The SCRIM Readings (SR) recorded by the SCRIM vehicle are corrected for speed where necessary and are rejected if the test speed is outside of the range 25-85 km/h. Speed-corrected SCRIM readings are converted to SCRIM coefficients which in turn are compared with a range of investigatory levels for different road categories to identify deficient lengths of road

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