

ANTI-SKID MEASUREMENT

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•THE basic needs of the anti-skid program are to define suitable criteria for the skid resistance of road surfaces and to provide the engineer with a convenient method of measurement.

In Great Britain the sideways-force coefficient (SFC) is used for routine measurement of skid resistance because the measurement of most significance is the one at which skidding begins and because reasonably reproducible results can be obtained.

The sideways-force coefficient routine investigation machine (SCRIM) has been developed and consists essentially of a standard four-wheeled vehicle chassis carrying a fifth test wheel set of 20 deg to the direction of traffic, a water tank, and a data logger with printed output. The machine records the SFC at 10- or 20-meter intervals, can test at speeds up to 60 mph in the traffic stream, and can cover up to 80 miles of road in one day.

Criteria have been defined to provide the highest resistance to skidding where the risk of skidding accidents is greatest. At the most dangerous sites, e.g., on approaches to busy junctions, the criterion is 0.55 SFC at 30 mph. At average sites, e.g., on motorways or on other high-speed roads, criteria are 0.5 SFC at 30 mph and 0.45 SFC at 50 mph.

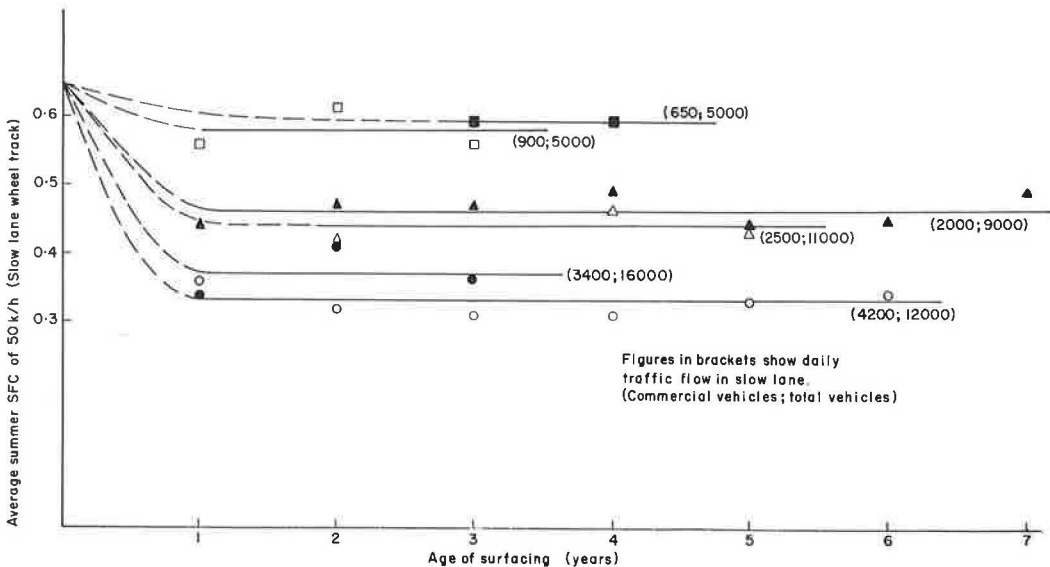


Figure 1. Effect of traffic on mean summer sideways-force coefficient.

It has recently become evident that, even when the best natural aggregates are used, a high resistance to skidding cannot be maintained under heavy commercial traffic. Figure 1 shows that with a given road surfacing, in this case a rolled asphalt with pre-coated chippings of high resistance to polishing (the typical surfacing used on heavily trafficked roads in Great Britain), the resistance to skidding is dependent entirely on traffic intensity.

Thus the present criteria must be regarded as targets, and they will be revised as more is learned about the cost of maintaining skid resistance at different levels and the associated savings in accidents. There is also a need to develop synthetic aggregates that are highly resistant to polishing.