

PAD LIFE AND DISC BRAKE SPECIFICATION

The expense of replacing brake pads in service is considerable, not only because of material replacement but also because of the periodic withdrawals of vehicles from traffic. All pad materials suffer the same disproportionate dependence on rubbing surface temperature, which in turn is related to the available braking area - ie the number and size of discs per axle. It is possible to provide a measure of the sensitivity of pad wear to changes in brake duty, and to give a rough guide against which proposals about the size and number of disc brakes on new vehicles may be assessed. Estimates are made in this report of the wear of one material for a range of brake duties and disc sizes, using a variety of initial speeds, axle loads and pad diameters.

Accurate predictions of pad wear in service depend on a knowledge of the precise braking duty, of the cooling performance of the discs and the wear behaviour of the pad material. Because of the limited data available, the estimates in this report are limited to a single stop. Better estimates can be made where disc performance and braking duty is known, but are best done by computer modelling of the specific applications.