

A STUDY OF MEASURED WHEEL/RAIL ADHESION IN MACRO WHEELSLIP DURING BRAKING (AUTUMN 1985 – AUTUMN 1986)

The report describes tests carried out with the Tribometer train between Autumn 1985 and Autumn 1986 to measure the effect of wheelslip on wheel/rail adhesion during braking.

Each test that was conducted measured the adhesion at the wheel/rail interface of one wheelset. With the train travelling at constant speed, the brake was applied to the wheelset which was allowed to slip up to a limit of 60% slip. When the limiting wheelslip was not attained the brake was released after approximately three seconds.

During the brake application, the brake force applied to the wheelset was measured together with the speed of the braked wheelset and that of an un-braked wheelset to give train speed.

The results take the form of wheel-rail adhesion/macro-wheelslip relationships, obtained both under naturally occurring weather and rail conditions, and artificially induced low adhesion conditions. The results from August 1986 are included in the report, together with statistical analysis of all the results showing the mean and standard deviation of the adhesion with varying wheelslip for each set of weather and rail conditions encountered.