

WATER SPRAY TREATMENT FOR CONDITIONING WHEEL/RAIL ADHESION. PART 2 EFFECT OF ADDITIVES

A previous report described water spray treatment for conditioning wheel/rail adhesion whereby spray equipment, mounted as a permanent installation on the Tribometer train, is used to reduce adhesion and is particularly useful for the testing of low adhesion remedies. The use of a water mist to give a very thin moisture film on the rail has advantages in that the effect is instantaneous and, because of the small volume of water involved, is short-lived such that the chances of subsequent traffic encountering low adhesion is minimal.

However, two slight disadvantages to the system showed themselves in the first year of usage:

- Not all sites react in the same way to the water film applied, some sites being more susceptible to low adhesion than others.
- The adhesion level falls to some characteristic level, dependent on site, and is often not as low as the naturally occurring low values sometimes recorded and which are required to be simulated.

This report looks at the effects of additives to the water system and concluded that:

- The effectiveness of the water spray system in reducing track adhesion is increased by the addition of small amounts (1-2%) of a soluble cutting oil to the water.
- Some sections of track are more susceptible to low adhesion produced in this way than others.
- The method provides a useful tool for the testing of remedies to counteract low adhesion.