INITIATION OF METAL PICK UP IN COMPOSITION BRAKEBLOCKS

The object of this investigation was to identify the prime parameters involved in the initiation of metal pick up in composition brakeblocks.

To date the laboratory work carried out has concentrated on reproducing metal pick up under controlled conditions on the 'Rotherham' dynamometer. This work was aimed at achieving consistent metal pick up with the application of known parameters so that metal pick up could be reproduced at will.

Arising from these tests and from evidence gained in service three main factors are thought to be responsible for metal pick up: wheel tread surface damage, metallic particles at the wheel/block interface and wheel tread surface moisture. One or all of these may be the prime initiator involved in metal pick up. Other factors thought to have a minor influence are: concentrated block forces, severe cold weather conditions, particles on the railhead, freshly machined tyres, rusty tyre surface and small variations in block formulation.

A programme of tests was devised to investigate the three major factors. These tests considered each parameter individually and in combination. This report summarises the results obtained.

The conclusions reached are:

- Moisture is required to initiate metal pick up.
- Wheel tread conditioning under rolling contact is a major factor.
- There was no evidence of metal pick up initiation due to the presence of metallic particles.

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