

## THE BEHAVIOUR OF STRESS IRREGULARITY IN CONTINUOUS WELDED RAIL

It was observed during monitoring of Stress Free Temperatures (SFT) in tracks affected by mining subsidence that severe stress gradients can occur that necessitate remedial action to ensure track safety. In order to study the effects of these stress gradients a test was performed in which a stress irregularity was deliberately introduced into an instrumented length of continuously welded rail (CWR).

The objectives of the study were to:

- Determine the maximum stress gradient that can occur in CWR. This determination is desirable for undisturbed track and also for track where adhesion between rail, pad and sleeper has been broken.
- Test remedial measurements by which tracks with severe irregularities can be made safe, primarily by tamping and subsequently by stress equalisation. The effects of normal temperature cycling and traffic over the site were also to be observed.

The report describes the creation and dilation of the irregularity, the measurements made, the results obtained and conclusions drawn.