



## **CHINA HONG KONG PERMANENT WAY SOCIETY LIMITED**

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### **Technical Talk :**

#### **Slab track construction and the effectiveness of low stiffness rail fasteners.**

**Mr. Steve Barlow, Pandrol Asia-Pacific**

**Monday 21<sup>st</sup> February 2005**

Urban railway planners are increasingly looking for ways to reduce ground borne vibration in the critical frequency range 10Hz to 400Hz. Structural vibration and re-radiated noise in this range can cause considerable disturbance in railway tunnels and on bridges or viaducts. The primary method of reducing the transmission of vibration from rail traffic, within the track itself, is by means of adding mass and/or reducing the dynamic stiffness of the track support. Pandrol have been installing low stiffness rail fasteners on concrete slab track in a number of metro systems throughout the world and under varying local traffic conditions. In each case slab vibration has been monitored in broadly similar ways, data being obtained before and after installation of the low stiffness trackform. Results indicate that low stiffness rail supports offer significant reductions in slab vibration. The degree of insertion loss is shown to be largely dependent on the degree of stiffness change between the original and replacement fastener.

The paper gives a broad overview of the main types of slab track construction to illustrate some of the operational requirements for rail fasteners. Methods of fastener installation, vibration measurements and data from several locations are shown and the results discussed.

Steve Barlow qualified as a Materials Engineer and spent 8 years working as a Polymer Chemist. In 1992 whilst working for Tiflex, became the Product Specialist for anti-vibration systems for the Railway industry. This involved specifying ballast mats, undersleeper pads and other resilient track products. He moved to Pandrol in Perth Australia in 2000 as Track Support Engineer. Main role is to provide technical back-up to users of the Pandrol range of low stiffness rail supports. He is now working extensively in SE Asia, particularly mainland PRC.

**Venue** : Assembly Hall, 8/F MTR Tower, Telford Plaza, Kowloon Bay

**Date** : Monday 21<sup>st</sup> February 2005

**Time** : 6:00 pm for a prompt start at 6:30 pm

Richard Keefe  
Secretary, CHKPWS