CASE STUDY

Slab track clamp force monitoring

PreCast Advanced Track

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SMART COMPONENT TECHNOLOGIES LTD
Authored by: Jack Bryan Hughleigh

In partnership with:

PreCast Advanced Track

Clamp force monitoring of slab track

The Challenge

PCAT (PreCast Advanced Track) is a new slab track technology that challenges the traditional engineering method of supporting railway track on loose ballast. The PCAT slabs are held together with a unique fixing system which requires precise tensioning to ensure the track is mechanically integral. As part of its product qualification, the PCAT team needed a system to remotely monitor the fixing cables to validate their performance over time.

Our Solution

An M16 variant of the Smart Washer was deployed to measure the tension of the fixing cables. During installation, clamp force data was transmitted to a ruggedised handheld tablet which enabled operators to accurately tension the fixing cables. Remote monitoring was achieved through the deployment of a battery-operated Smart Gateway, providing real-time updates every 10 minutes.

The Outcome

Smart Washers were deployed for a total of 12 months providing real-time and remote monitoring of the fixing cable tension. Our solution was able to quantify the magnitude of settling and embedding losses, as well as the impacts of thermal expansion and contraction. This enabled the PCAT team to optimise the fixing cable design, and its installation and maintenance procedure.

Smart Component Technologies Ltd
Cooper Buildings, Arundel Street
Sheffield, S1 2NS

info@smartcomptech.com
+44(0)114 360 0009