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Zierer Hornet coaster brake/drive beam failure

A UK registered inspection body has reported defects on a Zierer Hornet roller coaster. A section of the brake/drive fin became detached from the ride (this type of brake fin is also found on other types of Zierer coaster).

On further inspection, the section of brake/drive fin that was ejected from the device was found to be from a join in the fin approximately 200mm away from the front of the leading edge. The joint consists of a 3mm plate welded to the end of the box section/brake fin (Fig. 2) with the tapered end piece welded to that to make up the lead into the drive tyres and brakes.



Fig. 1

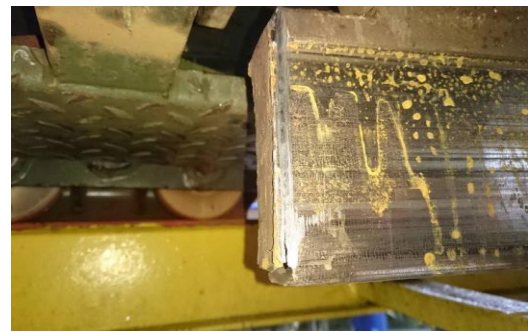


Fig. 2

The welded joint appears to have been full thickness, welded top and bottom but with only a shallow run up either side. These side welds have, over the years, been worn away due to the friction action of the brakes and drive tyres, meaning that the front tapered sections were only held on by the welds top and bottom.

The manufacturer should be contacted for WPS and thickness specifications.