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Surface corrosion of padded restraints

A UK inspection body has identified surface corrosion on a variety of padded restraints on a number of roller coasters and flat rides in recent years. Water ingress has been permitted by deteriorating padding adhesion or disruptions to the padded surface such as fastenings for handles, seat belts or where padded elements have been formed in multiple segments.

The components involved include over-head restraints, padded lap bars and other padded elements of passenger containment system, including handrails.

It is suggested that suitable NDT techniques such as visual or radiographic (x-ray) inspection should be performed periodically on all safety critical padded components operating in potentially corrosive environments, taking note of any stipulations made by the device manufacturer, design reviewer and inspection body. Such results should be interpreted by a competent person and further investigative work such as padding removal performed where evidence of thinning is detected. Consideration should also be given to the water retention properties of padding materials/restraint design and the environment in which it is anticipated to operate by the design reviewer at the time of Pre-Use Inspection.



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