

NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Committee

TECHNICAL BULLETIN - AUGUST 1998

170. Ice Damage to Rides and Structures

It may seem odd that the Committee were discussing the effects of ice damage at its August meeting, with summer at its height. But designs, whatever time of year they are specified, have to cope with all year round exposure to a variety of environmental conditions.

The core of our discussion was the existence of water traps in hollow section members. In winter, the change of state of trapped water into ice is accompanied by expansion which can cause permanent damage such as bulging and splitting of the members. We believe this has become more prevalent in recent years with the increased use of structural hollow section.

The effects on safety are not confined to structural weakening. The change of shape of platform support members, for instance, can cause relative displacement of adjacent floor plates, introducing an increased tripping risk.

We are aware of ice damage to platform support members (particularly fixed station platforms on amusement parks), car frames and chassis, and main chassis members on trailer-mounted rides.

From the design point of view, there is often an absence or shortage of suitable drainage holes preventing the trapping of water. Sometimes, it is the designer's intention that the holes introduced for venting and drainage during galvanising will provide subsequent lifetime drainage for water. In these circumstances it is important that any of these, or other intended holes, that become clogged during galvanising are cleared. Ride maintenance staff may also need to ensure that drainage holes remain unblocked.

Committee Members :- Dr Garry Fawcett (Chairman), Mr Richard Barnes, Mr Bob Nicholls, Mr Robert Casey, Mr Peter Smith and representatives of Plant Safety Ltd, and Banwell & Associates Ltd

© August 1998

2A GROVE PARADE, BUXTON, DERBYSHIRE. SK17 6AJ
TEL: (01298) 22384 FAX: (01298) 70784