



SAFETY ORDER

No: SO-P4 100708 1

POTENTIAL ACCUMULATIONS OF WATER WITHIN PASSENGER ROPEWAY TOWER TUBES OR OTHER HOLLOW STEEL STATION STRUCTURES

Date of Issue: July 8, 2010

This safety order is being issued pursuant to section 31 of the Safety Standards Act. A person affected by this safety order may appeal this order, in writing, to the Safety Standards Appeal Board in accordance with Section 51 of the Safety Standards Act. It is an offence under section 72 not to comply with a safety order.

Part 1: Details of Regulated Work or Regulated Product

This safety order applies to all operators of reversible passenger ropeways, circulating above surface passenger ropeways with either fixed or detachable grips and all surface passenger ropeways (T-Bars, Platter Lifts etc.). Specifically, any passenger ropeway identified above not affected by Safety Order SO-P4 091002 issued October 2, 2009.

Over the last 18 months the BC Safety Authority has been investigating an incident where a tower failed on an 8 passenger detachable gondola due to water intrusion and the subsequent expansion of ice within the tower structure. The manufacturer of the 8 passenger gondola, Doppelmayr CTEC, issued a bulletin entitled "Tower Failure Due to Water Intrusion" in December of 2008. The BC Safety Authority issued Safety Order No. **SO-P4 091002 1 DOPPELMAYR CTEC SAFETY ALERT BULLETIN SA-08-021 WOLFURT KD08003E** on October 2, 2009 which references the above bulletin. Doppelmayr CTEC instructed all of its affected customers worldwide to provide drain holes in all tower tubes or other hollow structures with a sealed base. This included installations that Doppelmayr CTEC has taken over service responsibility for through business acquisitions such as Hall, Von Roll, Thiokol, CTEC and Garaventa CTEC. This strategy has been deemed the most effective means to ensure that no water accumulates within these structures to prevent the possibility of ice forming.

Based on data collected from the above actions required by the manufacturer of these installations it has been determined that prescribed "resonance" or "dead-blow hammer tests" are too subjective and are not always effective at detecting water intrusion in tower structures.

Part 2: Requirement(s) of this safety order

All passenger ropeway contractors operating the types of passenger ropeways above that were not affected by Safety Order No. **SO-P4 091002 1 DOPPELMAYR CTEC SAFETY ALERT BULLETIN SA-08-021 WOLFURT KD08003E**, issued October 2, 2009, that do not already have provisions for the evacuation of water from within tower tubes or other hollow steel station structures with a sealed base must complete the following by November 15, 2010.

- 1. Provide a method for the evacuation of water from within tower tubes or other hollow steel station structures with a sealed base. The manufacturer of**

the installation must be contacted to provide instruction on the method to be used to ensure the evacuation of potential accumulations of water from within these structures.

- 2. In the absence of the manufacturer a professional engineer licensed in BC shall be consulted to determine the method to be used to ensure the evacuation of potential accumulations of water within tower tubes or other hollow steel station structures with a sealed base.**
- 3. Towers constructed of two or more enclosed tube sections must have a method for the evacuation of water installed in each section unless drawing details show that upper sections are open on the bottom end to allow for drainage into the lowest tube section.**
- 4. Any tower tubes or other steel hollow station structures with a sealed base that contain concrete shall have the drainage method installed just above the top of concrete.**
- 5. An inspection program must be implemented to ensure that these drainage systems are functioning correctly and that no water has accumulated prior to each winter season. These inspections must be recorded in maintenance logs.**
- 6. Submit to the BC Safety Authority documentation from the manufacturer or a professional engineer licensed in BC that identifies the method for the evacuation of water. An example of this would be a drawing or instruction that identifies the method to be used and where on the tower or other steel structure that the drainage method would be installed. Any documents submitted by a professional engineer licensed in BC must include their engineering seal.**
- 7. Submit the attached Safety Order Response form and identify all passenger ropeway installations affected by this Safety Order with their registration number.**
- 8. Identify any passenger ropeways, with their registration number, that were found to have experienced water intrusion when implementing the actions required by this safety order. Submit findings to the BCSA.**
- 9. If a method for the evacuation of water is already in place on your passenger ropeway tower and station structures then please indicate this on your response form and identify each passenger ropeway by registration number.**



If you have any questions with regard to the interpretation of this Safety Order please contact you local Passenger Ropeway Safety Officer or the Provincial Safety Manager.

Part 3: Details of Issue

This safety order is being issued to the following: All Passenger Ropeway Contractors operating above surface and surface passenger ropeways.

Part 4: Details of Ordering Safety Manager or Safety Officer – Please read following page

I certify that I am authorized to issue this safety order in accordance with section 15 (d) of the Safety Standards Act or that I have been delegated this power under section 15 (g) of the Safety Standards Act.

A handwritten signature in black ink, appearing to read "Jason Gill".

Jason Gill
Provincial Safety Manager – Passenger Ropeways and Amusement Devices

Date: July 8, 2010

Safety Standards Act:

Safety Orders

- 31
- (1) To prevent, avoid or reduce risk of personal injury or damage to property, a provincial safety manager may, in writing, issue a safety order.
 - (2) A safety order may be issued to any person in relation to any of the following:
 - (a) regulated work or regulated products generally;
 - (b) a specific class of regulated product or regulated work;
 - (c) a specific regulated product or regulated work.
 - (3) For certainty, a safety order issued under this section may apply to
 - (a) regulated work that meets the requirements under this Act,
 - (b) regulated work that previously met the requirements under this Act or a former Act but does not meet the current requirements under this Act,
 - (c) regulated products that meet the requirements under this Act, or
 - (d) regulated products that previously met the requirements under this Act or a former Act but do not meet the current requirements under this Act, including a regulated product that bears a certification mark.
 - (4) A safety order may specify any requirement that is intended to prevent, avoid or reduce the risk of personal injury or damage to property and may include any of the following orders:
 - (a) that an existing regulated work or regulated product must be made safe in compliance with the safety order;
 - (b) that a regulated product must be
 - (i) disconnected from a power source,
 - (ii) uninstalled, or
 - (iii) modified before continued use;
 - (c) that a regulated product must be operated, installed, manufactured or disposed of only as specified or that a regulated product must not be moved;
 - (d) that current or future regulated work or a regulated product must conform to the terms or conditions of the order;
 - (e) that a person take or refrain from taking any action that a safety manager considers necessary to prevent, avoid or reduce a risk of personal injury to persons or damage to property;
 - (f) that the manufacturer make reasonable efforts to recall the regulated product.
 - (5) The provincial safety manager must give written notice of the safety order to the following persons:
 - (a) the manufacturer of the regulated product;
 - (b) an owner of the regulated product if the identity of the owner is known to the provincial safety manager;
 - (c) the person in charge of the regulated work.
 - (6) The notice must state the reasons for the decision and that the person has the right to appeal the decision to the appeal board.
 - (7) Despite section 54, a safety order may not be stayed during an appeal.

References:

Safety Standards Act

For more information on the British Columbia Safety Authority, please visit our website at:

www.safetyauthority.ca



SAFETY ORDER RESPONSE FORM

The information on this form is collected to administer the provisions of the *Safety Standards Act*. If you have questions about the collection, use or disclosure of this information, contact the Records, Information and Privacy Analyst at 1-866-566-SAFE(7233).

The company and/or designated representative in receipt of a safety order must fill out and submit this form to the British Columbia Safety Authority within the timeframe stipulated on the safety order.

Safety Order No:

Operating Company:

The following have been completed as required in the above safety order (List all Passenger Ropeway Names and Registration No.'s affected):

Person signifying completion of safety order requirement/s:

(Please print name)

Position Title:

Signature:

Completion Date: Month / Day / Year

Return this form to:

Attention: Jason Gill

Provincial Safety Manager, Passenger Ropeways and Amusement Devices

505 - 6th Street, Suite 200, New Westminster, British Columbia, Canada V3L 0E1

Tel: 778.396.2047 Fax: 778.396.2035

Email: Jason.Gill@safetyauthority.ca