



## Fact Sheet: Hydraulic Elevators with Single Bottom Cylinders

### History

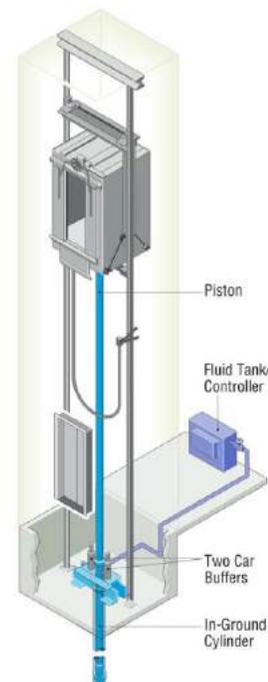
Some hydraulic elevators constructed prior to 1977 were installed with a single bottom hydraulic cylinder directly in the ground with no protection from corrosion. These single bottom cylinder designs pose a safety risk because they are susceptible to corrosion that can lead to release of hydraulic fluid. This can result in an uncontrolled descent of the elevator, which has caused injuries and fatalities in other jurisdictions. As a result of this risk, double bottom cylinder designs became the industry standard for hydraulic elevators in the late 1970s.

Between 1990 and 2006, there were nine recorded incidents of single bottom cylinder elevators failing in North America. There have been two incidents in Canada. Both occurred in Ontario: An elevator failure in 1990 resulted in one fatality, and an incident in 2006 caused permanent disabilities to five people.

### Safety Order

To reflect the seriousness of the ongoing risk posed by single bottom cylinder elevators, the provincial government enacted a regulation change in 2010 requiring all single bottom cylinder elevators to be upgraded to meet current safety standards or be removed from service. BC Safety Authority (BCSA) consulted with industry to make sure owners and licensed elevating contractors were given sufficient time to take action.

In December 2010, BCSA issued a safety order to owners of some 1,300 elevating units, requiring them to take action to comply with the new regulation within five years. BCSA communicated extensively with owners of single bottom cylinder elevators since issuing the safety order in 2010, including numerous direct letters and notifications, phone calls, as well as public announcements and awareness campaigns.



Owners of single bottom cylinder elevators were given five options to bring their unit into compliance with safety regulations:

1. Provide proof that their cylinder is already a double bottom cylinder;
2. Install a mechanism to grab and hold the elevator cylinder in case of failure;
3. Install elevator car safeties to hold the car in place in case of failure;
4. Replace the single bottom cylinder with a double bottom cylinder; or
5. Remove the elevator from service.

The deadline for compliance was October 8, 2015, and over 98% of owners took action to comply with the safety regulations. Today, fewer than 20 units are non-compliant.

### **Next Steps for Non-Compliant Elevators**

Unfortunately, despite being given numerous notifications and five years to comply, some owners have neglected their safety responsibilities and certain elevators remain non-compliant. Because the risk of failure increases as the equipment ages and all affected elevators are now several decades old, continued operation represents an unacceptable risk to the lives and safety of the people using them.

Non-compliant owners face a monetary penalty of \$15,000 and, unless immediate action is taken, their elevator may be removed from service on or after March 14, 2016.

To avoid a shut-down of their non-compliant elevator, the owner must retain the services of a licensed elevating device contractor to apply for a variance to allow more time for completion of the remediation work. If a variance and installation permit is issued, owners will have up to April 30, 2016 to have their elevator upgraded, provided no imminent hazards are apparent.

### **Resources for Impacted Elevator Users**

BCSA understands that elevator shut-downs can impact individuals and businesses, which is why a lengthy five-year time period was provided to help owners achieve compliance. However, exposing elevator users to an ongoing hazard risk cannot be justified.

BCSA is maintaining an online [list of buildings with non-compliant elevators](#) and is distributing notices so occupants and users are aware of the potential for shut-down and can make any necessary alternative arrangements prior to elevators being removed from service on or after March 14, 2016.

For more information, please visit: [www.safetyauthority.ca/hydraulic-elevators](http://www.safetyauthority.ca/hydraulic-elevators).

Affected tenants may wish to consult the Tenant Resource & Advisory Centre (TRAC) for dispute resolution services at [www.tenants.bc.ca](http://www.tenants.bc.ca) or by phone at 604-255-0546 or 1-800-665-1185.

BC Safety Authority can be reached directly on this issue by email at [hydraulic.cylinders@safetyauthority.ca](mailto:hydraulic.cylinders@safetyauthority.ca) or by phone at 1-866-566-7233.



**These photos depict a single bottom cylinder which was removed from an elevating unit.**

**The white circled area on the photos shows a breach in the cylinder as a result of corrosion.**

