



Safety Directive Number: **00006**

Issued August 29, 2023 (*updated from Safety Order issued August 20<sup>th</sup>, 2014*)  
by Peter McClare, Chief Inspector, Elevators, Lifts & Amusements  
Department of Labour, Skills and Immigration

## Single Bottom Cylinder Safety Order – Hydraulic Elevators with buried jacks with single bulkhead cylinders

### Summary

#### Important Notice to Owners

Buried cylinders with single bottoms found on older model hydraulic elevators can fail catastrophically and cause injury to riders and significant environmental damage.

Potential affected units were installed prior to the 1977 code requirements for buried hydraulic cylinders to have safety bulkheads.

### Legal information

#### Code Changes

The new code requirements as extracted from the A17.1 2013 /CSA B44-13 Safety Code for Elevators and Escalators are as follows:

**8.6.5.8 Safety Bulkhead.** *Hydraulic cylinders installed below ground shall conform to 3.18.3.4, or the elevator shall conform to 8.6.5.8(a) or 8.6.5.8(b):*

*(a) the elevator shall be provided with car safeties conforming to 3.17.1 and guide rails, guide-rail supports, and fastenings conforming to 3.23.1;*

*or*

*(b) the elevator shall be provided with a plunger gripper conforming to 3.17.3. The plunger gripper shall grip the plunger when the applicable maximum governor tripping speed in Table 2.18.2.1 is achieved.*



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The new requirements mean that hydraulic elevators with buried single bulkhead cylinders will either have to:

1. **Be equipped with a car safety or,**
2. **Be equipped with a plunger gripper or,**
3. **Replace the existing single bottom cylinder with a new double bulkhead cylinder complete with a method of corrosion protection.**

Owners of hydraulic elevators with single bottom cylinders will need to begin planning for the necessary changes to their elevator equipment. It is advisable that owners start researching options on how to best deal with single bottom cylinders in order to determine the costs associated with the options and to help decide which option is best for their elevator(s).

**PLEASE NOTE: All elevators with buried single bottom cylinders shall comply with one of the above options on or before September 30th, 2016.**

## Interim and Ongoing Safety Measures

Oil loss monitoring must be strictly adhered to as per the A17.1/CSA B44 Safety Code for Elevators and Escalators requirements on a monthly basis for all potential buried single bottom cylinders. Oil loss monitoring applies to all hydraulic elevator installations as this requirement enables a method to account for all oil, lost or added, from an elevator hydraulic system. Elevator contractors must ensure their oil loss monitoring program is documented. As part of their due diligence, owners should be asking contractors for documentation that verifies oil loss monitoring is being conducted.

**8.6.5.7 Record of Oil Usage.** *For systems where the part of cylinder and/or piping is not exposed for visible examination, a written record shall be kept of the quantity of hydraulic fluid added to the system and emptied from leakage collection containers and pans. The written record shall be kept in the machine room. When the quantity of hydraulic fluid loss cannot be accounted for, the test specified in 8.6.5.14.1 and 8.6.5.14.2 shall be made.*



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## Compliance

The building owner(s) shall supply this department with a compliance plan which shall contain the following information:

- a. Identify the elevator with its correct NSIN number
- b. State the method by which your hydraulic elevator will be brought into compliance
- c. State the date by which your hydraulic elevator is expected to be brought into compliance
- d. Identify the Registered Elevator Contractor who will perform the work to bring your hydraulic elevator into compliance

OR

- e. State that this safety order is not applicable for one of the following reasons:
  - i. The equipment has been upgraded and is compliant
  - ii. The equipment is a double bottom cylinder (safety bulkhead)

Documentation from a Registered Elevator Contractor or the original elevator manufacturer will be required to prove the above.

**Upon completion of the necessary work to comply with this order, an inspection by this department is required.**

**Please note this is a mandatory order, therefore failure to comply with this order will result in this department removing the affected elevator from service.**

Please contact the Technical Safety Division of the Safety Branch with any questions.

## Contact us

Safety Branch - [SafetyBranch@novascotia.ca](mailto:SafetyBranch@novascotia.ca)  
Labour, Skills and Immigration  
1-800-952-2687