

November 2009

**P-09-01-NPC 05**

(Replaces IB P-07-01-NPC 05)

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(File Number 16090-P01)

**REQUIREMENTS FOR ELEVATOR PIT DRAINS**

**SUBJECT: Drainage of Water from Elevator Pits**

This bulletin has been jointly developed by Safety Services, the Plumbing Technical Council and Elevator Technical Council to inform the plumbing industry of the requirements associated with the installation of **Pit Drains** located in “**Elevator pits**”.

**Installers** are reminded that the **National Plumbing Code of Canada 2005 (NPC)** and the **ASME A17.1-2007/CSA-B44-07 Safety Codes for Elevators and Escalators** both have requirements for the drainage of water from Elevator pits.

Changes to the elevator code **A17.1-2007/CSA-B44-07**, now permit the installation of a sump or pump in the elevator pit. Oil Interceptors may require external installations as space restrictions in elevator shaft may make installation prohibitive.

The requirements in the NPC 2005 that must be considered when an elevator pit drain is installed are

**Sentence 2.4.3.6.(1) Div “B”** - where a drain is provided in an elevator pit

- (a) it shall be connected directly to a sump well located outside the elevator pit, and
- (b) the drain pipe that connects the sump well to the drainage system shall have a backwater valve.

**Sentence 2.4.4.3.(2) Div “B”**- Where the discharge from a *fixture* may contain oil or gasoline, an oil interceptor shall be installed. (**Note:** To correctly size an oil interceptor, contact the Elevator manufacturer to provide calculations regarding the maximum amount of oil that can escape from the hydraulic system.)

**Sentence 2.4.5.5.(1) Div “B”** – Provision shall be made for maintaining the *trap* seal of a floor drain by,

- (a) the use of a *trap* seal primer,
- (b) using the drain as a receptacle for an *indirect connected* drinking fountain, or
- (c) other equally effective means. (See Appendix A.)

**Sentence 2.4.6.3.(1) Div “B”** – Piping that is too low to drain into a *building sewer* by gravity shall be drained into a sump.

**Sentence 2.4.6.3.(3) Div “B”**– Equipment such as a pump or ejector that can lift the contents of the sump or tank and discharge it into the *building drain* or *building sewer* shall be installed.

**Sentence 2.4.6.3.(6) Div “B”**– The discharge from every *sewage* sump shall be equipped with a union, a *check valve* and a shut-off valve installed in the sequence in the direction of discharge.

**Sentence 2.4.6.4.(2) Div “B”**– Where a *building drain* or a *branch* may be subject to *backflow*, a gate valve or a *backwater valve* shall be installed on every *fixture drain* connected to them when the *fixture* is located below the level of the adjoining street.

### **Elevator Code**

Additional requirements are set out in excerpts from the *ASME A17.1-2007/CSA-B44-07 Safety Codes for Elevators and Escalators* that must be considered are:

#### **Clause 2.1.2.2 Construction at Bottom of Hoistway**

Pits extending to the ground shall have non-combustible floors, and shall be designed to prevent entry of ground water into the pit. The pit floor of any hoistway not extending to the ground shall be of construction having a fire-resistance rating at least equal to that required for the hoistway enclosure.

**Clause 2.2.2.3** – Permanent provisions shall be made to prevent accumulation of groundwater in the pit (See 2.1.2.2).

**Clause 2.2.2.4** – Drains and sump pumps, where provided, shall comply with the applicable plumbing codes, and they shall be provided with a positive means to prevent water, gases, and odors from entering the hoistway.

**Clause 2.2.2.5** – In elevators providing for “Firefighters Emergency Operation” a drain or sump pump shall be provided. The sump pump/drain shall a capacity to remove a minimum of 11.4m<sup>3</sup>/h (3000 gal/h) per elevator.

**Note:** The previous clause 2.2.2.7 is struck from the Elevating Devices Codes Regulation AR 62/2009. This now permits the installation sump pumps in elevator pits provided that the variance VAR – P09.01 is followed.

The diagrams on the attached page illustrate arrangements that have been accepted by Safety Services, Alberta Elevating Devices and Amusement Rides Safety Association (AEDARSA), the Safety Codes Council’s Plumbing Technical Council and Elevator Technical Council.

## ACCEPTABLE OPTIONS FOR DRAINAGE OF ELEVATOR PITS

