BSR/ASHRAE Addendum b
to ANSI/ASHRAE Standard 15-2024

Second Public Review Draft

Proposed Addendum b to Standard 15-2024, Safety Standard for Refrigeration Systems

Second Public Review (August 2025)
(Draft shows Proposed Changes to Current Standard)

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FOREWORD

The model building codes were revised in the 1980s to remove the mandatory requirement for a pipe shaft. A pipe shaft was still permitted as an option, however, the building codes focused on the piping penetrations. At that time Standard 15 chose to not revise similar language and has been out of harmonization ever since. This was partially corrected by Addendum a to Standard 15-2024. However, the committee felt this was patchwork and a more holistic approach was required.

The proposed change will update ASHRAE Standard 15-2024 to be consistent with the model building codes where the primary requirement will be protection for all refrigerant pipe penetrations. The addendum moves language from Section 9.12.3 to Section 9.12.1.5 and lists it first as the primary protection means. Use of pipe shafts remains a design option. The proposed language further clarifies shaft ventilation requirements to mitigate flammability hazards.

Note: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes**.**

Addendum b to Standard 15-2024

Modify Section 9 as follows. The remainder of Section 9 remains unchanged.

9. DESIGN AND CONSTRUCTION OF REFRIGERATION EQUIPMENT AND SYSTEMS

[…]

9.12 Refrigerant Pipe Installation

9.12.1 Piping Location. […]

[…]

~~9.12.3~~ 9.12.1.5 Refrigerant Pipe Penetrations. ~~In other than *industrial occupancies*, the~~ The annular space between the outside of a *refrigerant* pipe and the inside of a pipe sleeve or opening in a building envelope, wall, floor, or ceiling assembly penetrated by a *refrigerant* pipe *shall* be sealed in an *approved* manner with caulking material, foam sealant, or closed with a gasketing system. The caulking material, foam sealant, or gasketing system *shall* be designed for the conditions at the penetration location and *shall* be compatible with the pipe, sleeve, and building materials in contact with the sealing materials. *Refrigerant* pipes penetrating required *fire-resistance-rated* assemblies or membranes of *fire-resistance-rated* assemblies *shall* be sealed or closed in accordance with the *building code*.

~~9.12.1.5~~ 9.12.1.5.1 Refrigerant Pipe Shafts. *Refrigerant piping* that penetrates ~~two or more~~ multiple floor/ceiling assemblies *shall* be permitted to be enclosed in a *fire-resistance-rated* shaft enclosure. The *fire-resistance-rated* shaft enclosure *shall* comply with the requirements of the *building code*. Other building utilities or *piping* systems *shall* be allowed in the *refrigerant piping* shaft.

*{**Note to reviewer:** This proposed addendum supersedes prior revisions to Section 9.12.1.5.1 of Standard 15-2024 as made by Addendum a.}*

~~**9.12.1.5.1 Shaft Alternative.** A shaft enclosure *shall not* be required for the *refrigerant piping* for any of the following *refrigeration systems*:~~

~~a. Systems using R-718 (water) *refrigerant*~~

~~b. *Piping* in a *high-probability system* where the *refrigerant* concentration does not exceed the amounts shown in ASHRAE Standard 34,[3] Table 4-1 or 4-2, for the smallest *occupied space* through which the *piping* passes~~

~~c. *Piping* located on the exterior of the building where vented to the outdoors~~

~~d. Continuous *refrigerant* pipe or tube, including joints and connections, that have been tested in accordance with Section 9.13.~~

[…]

9.12.2 Installation Requirements for Flammable Refrigerants. […]

[…]

9.12.2.2 Shaft Ventilation. *Refrigerant* pipe installed within a *fire-resistance-rated* shaft~~s~~ enclosure with *refrigeration systems* using only Group A2L or B2L *refrigerants shall* be naturally or mechanically ventilated. *Refrigerant* pipe installed within a *fire-resistance-rated* shaft~~s~~ enclosure with one or more *refrigeration systems* using any Group A2, A3, B2, or B3 *refrigerant shall* be continuously mechanically ventilated and *shall* include a *refrigerant detector*. The shaft ventilation exhaust outlet *shall* comply with the discharge location requirement *specified* in Section 9.7.8.2.

a. Naturally ventilated shafts *shall* have a minimum of a 4.0 in. (102 mm) diameter pipe, *duct*, or conduit that connects at the lowest point of the shaft and connects to the outdoors. The pipe, *duct*, or conduit *shall* be level or pitched down to the outdoors. A *makeup air* opening *shall* be provided at the top of the shaft.

b. When active, mechanically ventilated shafts *shall* have a minimum air velocity in accordance with Table 9-12. *Makeup air shall* be provided at the inlet to the shaft for mechanically ventilated shafts. The mechanical ventilation *shall* either be continuously operated or, for pipe shafts containing only *refrigeration systems* using Group A2L or B2L *refrigerants*, activated by a *refrigerant detector*. *Refrigerant* pipe shafts utilizing a *refrigerant detector shall* have a set point not exceeding the *occupational exposure limit* (*OEL*) of the *refrigerant*. The detector, or a sampling tube that draws air to the detector, *shall* be located in an area where *refrigerant* from a leak will concentrate.

c. The shaft *shall not* be required to be ventilated for double-wall *refrigerant* pipe where the interstitial space of the double-wall pipe is vented to the outdoors in accordance with the discharge location requirements *specified* in Section 9.7.8.2.

d. The shaft *shall not* be required to be ventilated where all the *refrigerant* pipe or tube is continuous and has been tested in accordance with Section 9.13.

e. The shaft *shall not* be required to be ventilated for systems using only Group A2L or B2L *refrigerants* where there are no hot surfaces exceeding 1290° F (700° C) in the shaft and the pipes, tubes, joints, or connections have been tested in accordance with Section 9.13.

~~9.12.4~~ 9.12.3 Stress and Strain. […]

[…]

~~9.12.5~~ 9.12.4 Stop Valves. […]

[…]

~~9.12.5.1~~ 9.12.4.1 Refrigeration Systems Containing More than 6.6 lb (3.0 kg) of Refrigerant. […]

[…]

~~9.12.5.2~~ 9.12.4.2 Refrigeration Systems Containing More than 110 lb (50 kg) of Refrigerant. […]

[…]

~~9.12.5.3~~ 9.12.4.3 Identification. […]