

**INTERPRETATION IC 15-1992-3 OF  
ANSI/ASHRAE STANDARD 15-1992  
SAFETY CODE FOR MECHANICAL REFRIGERATION**

April 2, 1993

**Request from:** Mr. Thomas A. Moser, P.E., Senior Mechanical Engineer, Hixson, 659 Van Meter Street, Cincinnati, OH 45202-1568

**References.** This request refers to Standard 15-1992, Subsections 7.4 and 11.13.1; specifically in relation to Footnote a) of Table 2 and Rules 3 and 6 under Subsection 7.4.

**Background.** For a refrigerating system in an Industrial Occupancy that uses R-123 in a high probability system, Table 1 shows R-123 in Safety Group B1 and Table 2 refers you to Rules 3 and 6 under Subsection 7.4. Rule 3 lists a number of rules relating to machinery enclosures but does not mention Subsection 11.13, Machinery Room, General Requirements. Paragraph 11.13.1 states, "... a machinery room shall be provided when required by 7.4."

Mr. Moser's letter opines that 11.13 applies to high probability systems since it does for low probability systems through Rule 4 with the same refrigerant, but the wording is ambiguous and some requirements of 11.13 are duplicated in Rule 3.

Mr. Moser's letter further indicates that no reason is given in the standard for the prohibition in 11.13.5 from using refrigerant room air for combustion; e.g., whether safety concern is for flammability, toxicity or corrosion. Mr. Moser opines that the reason for 11.13.5 is to avoid combustion of chemicals that produce acid when oxidized, resulting in both toxic exposure and corrosion of the materials exposed to combustion products.

**Question 1.** Is a machinery room per Subsection 11.13 required for high probability systems using Safety Group B1 refrigerants in Industrial Occupancies?

**Answer 1.** No.

**Comment.** Historically, in the 1978 and earlier published versions of the Standard, Group 1 Refrigerant (now A1), have had no restrictions in Industrial Occupancies other than the provisions in the present Rule 3. In the 1989 Standard, the machinery room provisions of Rule 4 were adopted for Group 1 Low Probability systems in Industrial Occupancies. In the 1992 Standard, the provisions of Rule 4 were extended to Groups A1 and B1 for Low Probability systems in Industrial Occupancies. The committee is now considering whether Rule 8 machinery room requirements should be extended to High Probability systems using Groups A1 or B1 in Industrial Occupancies.

**Question 2.** Is the reason for the prohibition in 11.13.5, from using air from the machinery room for supplying open flames, to avoid forming acids or other products of combustion that can result in toxic exposure to persons and can cause corrosion to exposed materials?

**Answer 2.** Yes

**Comment.** The 1989 version of the Standard extended the prohibition on installation of open flames, or apparatus to produce an open flame, to machinery rooms for non-flammable refrigerants. The 1992 version relaxed this provision to allow installation of open flames in machinery rooms housing refrigerants that do not propagate flame provided the combustion air is supplied from outside the room.