



**Technical Standards & Safety Authority**  
4th Floor, West Tower  
3300 Bloor street West  
Etobicoke, ON M8X 2X4  
Tel: (416) 325-1943  
Fax: (416) 326-1662

**SAFETY INFORMATION BULLETIN: SB00-11**  
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**Subject: Cast Iron Valves and Fitting in Ammonia Refrigeration Services**

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There are potential hazards associated with the use of grey cast iron fittings in pressurized ammonia refrigeration systems, where valves and fittings may be subject to thermal/pressure shocks.

It is a well established fact that a wide variety of “cast irons” with various physical properties are currently used in the fabrication of fittings (valves, flanges, etc.). Some of these “cast irons” may not be suitable for pressurized low temperature service. A large number of refrigeration systems currently in operation in Ontario are of relatively “old vintage”. The original fittings specification may not be available or valves and fittings which are to be replaced if not readily identifiable.

The TSSA is concerned about the potential hazards of failures which may be created by specifying or installing valves and/or fittings that are unsuitable for this type of service.

It is recommended that special care be taken by all parties concerned in the selection and use of so-called “cast-iron fittings” for both new ammonia refrigeration systems and for replacements in older systems to ensure that only high strength and high ductility “cast irons” and/or steel fittings are used.

**NOTE:** All pressure fittings used in pressurized refrigeration systems (operating above 15 psig) must be registered by the Boilers and Pressure Vessels Safety Division of TSSA in accordance with CSA B51 Standard.

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**ERIC DAHLIN,**  
Vice President  
Boilers & Pressure Vessels Safety Division