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92 FCR 005

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STORAGE HEIGHTS OF DANGEROUS GOODS

A number of enquiries have been received regarding the storage height requirements for dangerous goods in the Alberta Fire Code.

This has also been under review by the Canadian Commission on Building and Fire Codes, Standing Committee on Hazardous Materials, Processes and Operations who have accepted the approach contained in this Ruling to be included in the National Fire Code 1995.

Existing Requirements - Alberta Fire Code 1992**3.3.6.5. Storage Heights**

- (1) Storage of *dangerous goods* to a height greater than 1.75 m shall be on *racks* or shelves.

Background


Comparison between the Alberta Fire Code, National Fire Protection Association and National Fire Code storage height limitations for flammable liquids and oxidizers show that 1.75 m minimum height is adequate for highly flammable Class I liquids and high hazard Class 4 oxidizers, but may be overly restrictive for other dangerous goods with less hazardous properties.

The Transportation of Dangerous Goods Regulations Packing Group classification indicates the relative hazard of products and is used in Table 3.3.6.A. of the Alberta Fire Code to determine small quantity exemptions for dangerous goods and to make a distinction between the level of hazard inherent in dangerous goods. This approach is extended to determine storage height limits for dangerous goods.

Packing Group I dangerous goods represent the most severe hazard. They are comparable to Class 3 and 4 high hazard oxidizers in NFPA 43A, "Storage of Liquid and Solid Oxidizing Materials" and to Class IA flammable liquids in NFPA 30, "Flammable and Combustible Liquids Code," and the Alberta Fire Code. All three documents prescribe very strict storage height limitations for both protected and unprotected storage. Limits in Table 1 are in line with these documents.

ISSUE OF THIS RULING IS AUTHORIZED
UNDER ARTICLE 1.1.4.4. OF THE ALBERTA
FIRE CODE 1992 BY THE SENIOR TECHNICAL
OFFICER, FIRE STANDARDS.

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Packing Group II dangerous goods represent a hazard comparable to Class 2 oxidizers in NFPA 43A and the limits in Table 1 are taken from this document.

Packing Group III dangerous goods are less hazardous and represent a hazard comparable to Class 1 low hazard oxidizers in NFPA 43A and to Class II and IIIA combustible liquids in NFPA 30 and in the Alberta Fire Code. The storage height limits proposed in Table 1 for Packing Group III products reflect this lower hazard level.

Ruling

Storage Arrangement

- (1) The method of storage of *dangerous goods* shall
 - (a) be determined to ensure stability of the stored products, and
 - (b) except as provided in Sentence 2, not exceed the maximum height of storage shown in Table 1.
- (2) Storage heights in Column 3 of Table 1 are permitted to be exceeded provided the *dangerous goods* are stored on *racks* or *shelves*.

Table 1.

Storage Height Limits for Dangerous Goods, m		
Classification ⁽¹⁾	Unprotected Storage	Protected Storage
Packing Group I	1.75	2.4
Packing Group II	2.4	4
Packing Group III	4.5	6
Column 1	2	3

Notes to Table 1.

- ⁽¹⁾ See Table 3.3.6.A. of the Alberta Fire Code 1992