



Bulletin

Permits Licence and Inspection Services

Vertical Racking Systems

20338 65 Ave., Langley B.C. V2Y 3J1

Phone 604-533-6018

This will provide commercial property owners, tenants, designers and builders with information concerning the Township of Langley permit requirements for shelving, racking and other similar vertical storage systems.

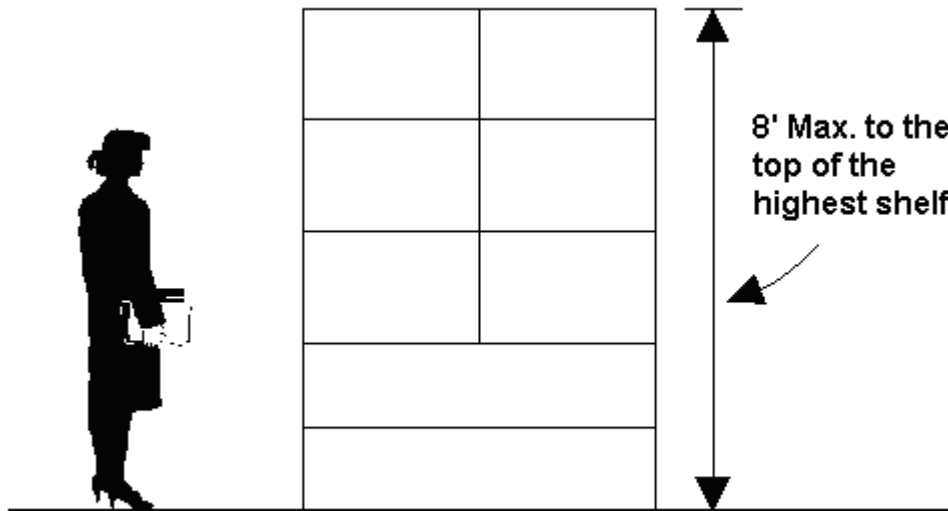
Vertical Storage Systems

1. Shelving Units

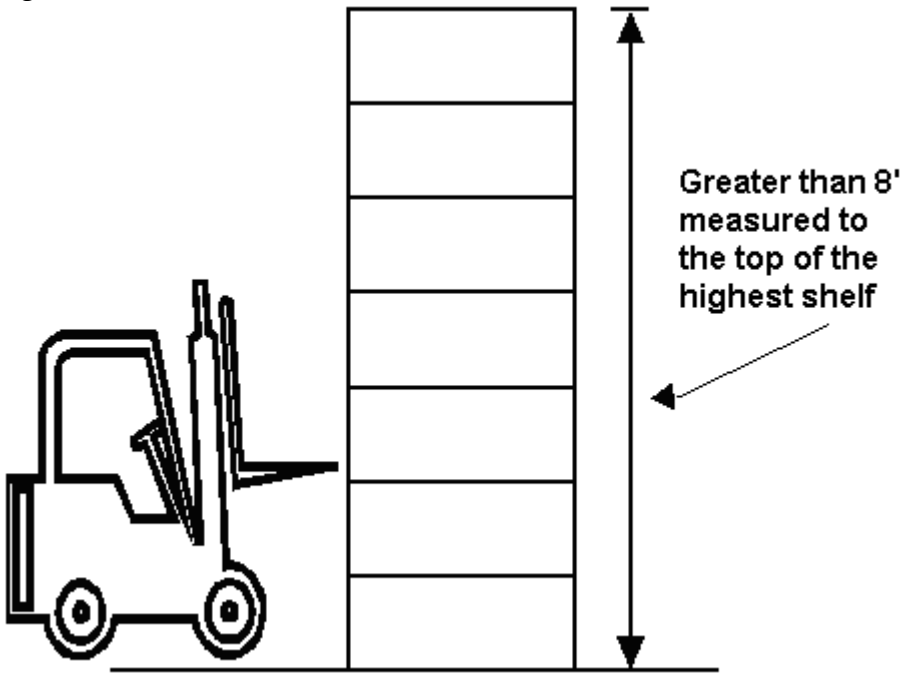
The Building Department considers any racking or vertical storage unit under 8' in height to be shelving.

A building permit is not required for the Installation of shelving units, but the Building Department does recommend that the shelving units be restrained either by fastening them to the floor or to an adjacent wall.

Shelving units can be constructed of combustible or non-combustible material.



2. Single Level



A vertical storage unit that is greater than 8' in height is considered to be a structure and as such, requires a building permit.

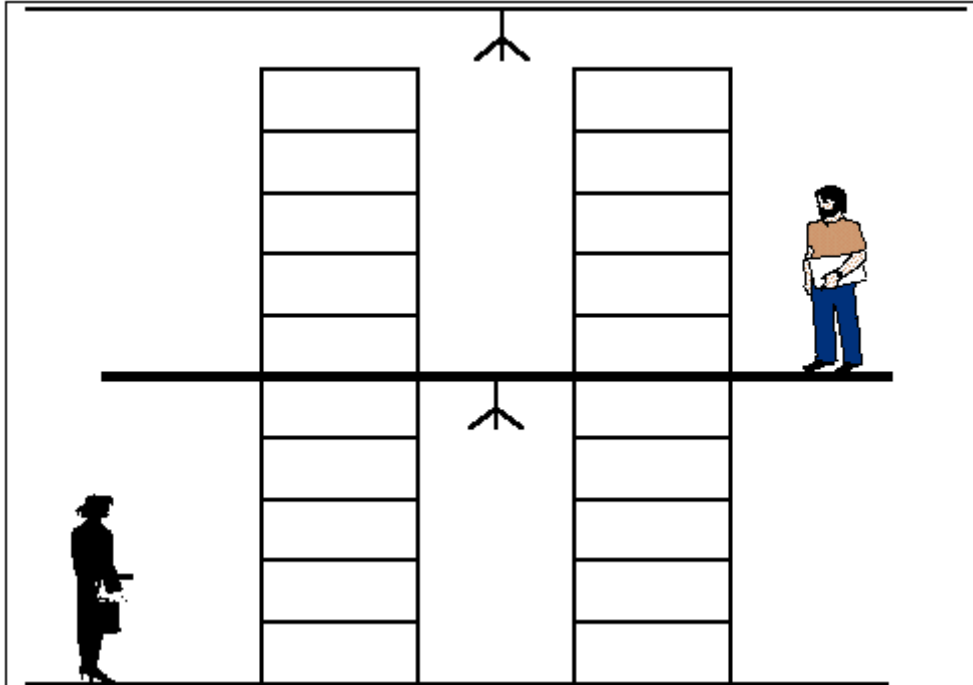
Vertical storage units or racking/shelving over 8' in height must be seismically restrained and supported for geotechnical aspects as per Part 4 of the B.C. Building Code.

The design engineer must submit standard B1 and B2 Letters of Assurance and subsequently Schedule C-B confirming seismic design, geotechnical and field review specifically referencing racking under the structural discipline.

If the building is sprinklered the requirements for the design and installation of sprinkler systems in the building and racking structure shall be in accordance with NFPA 13 and 231C.

With the exception of the actual shelves, this type of storage unit must be constructed of non-combustible material.

3. Multi-Level



A vertical storage unit that is greater than 8' in height or supports an intermediate elevated walking platform requires a building permit.

This type of structure must be seismically restrained and supported for geotechnical aspects as per Part 4 of the B.C. Building Code and with the exception of the shelves, must be constructed of non-combustible material.

The design engineer must submit standard B1 and B2 Letters of Assurance and subsequently Schedule C-B confirming seismic design, geotechnical and field review specifically referencing racking under the structural discipline.

If the building is sprinklered the design and installation of the sprinkler systems shall be in accordance with NFPA 13 and 231C.

The walking platform shall be a catwalk system, supported by the rackings, providing access to the rackings only. No open platform is permitted for the use of storage, manufacturing and assembly. The number, location, and construction of guards and egress stairs for the catwalk system must conform to the requirements of the B.C. Building Code.

Hard wired, interconnected smoke alarm system(s) are required to cover the entire floor area containing the racking. If the catwalk system has a solid walking surface, smoke alarms shall be installed at each level.

Continuous floor system supporting the upper shelving units (see diagram below) shall be considered as a mezzanine rather than a racking system. They shall be designed to comply with the requirements for mezzanine.



MEZZANINES

General Information

The designer should refer to Section 3.2 of the B.C. Fire Code for the requirements of type of products allowed in the building, aisle width, clearances, height and size of storage and sprinkler systems.

Good engineering design practice considers racks as a space frame design using appropriate force modification factors.

Design criteria (loads, geometry, etc.) should be clearly identified on drawing(s). The design engineer should ensure the concrete slab is capable of accepting the post loads from the storage racks. A statement to this affect should be shown on the structural drawings.

Sprinkler system designers and contractors should give special consideration to the details of water line connections between racks and buildings. "In rack" sprinklers are supported by the racks and attached to the ceiling/roof trusses. Fires after an earthquake are a problem if water lines are broken. Designers should inform and educate the owner and/or end user to inspect the installation for continuing conformance with those specifications. The maintenance of racks to original manufacturer's specifications is the owner's responsibility as required by the Worker's Compensation Board.

If commodity stored is changed or modified, reassessment by a P.Eng. (Structural) and/or (Sprinkler System) may be necessary.

For further information and inquiries, contact Permit Licence and Inspection Services at 604-533-6018 or visit us at the Township Hall.

Roberto Cesaretti
Chief Inspector