



City of Bellevue Fire Department  
 P.O. Box 90012  
 Bellevue, WA 98009 (425) 452-6872

## Operational Permit Application High-Piled Storage

*Work or activity requiring a permit shall not commence until such work or activity has been inspected and authorized with a valid permit. Violation of this condition may result in additional permit or inspection fees.*

**GENERAL INFORMATION (to be completed by the permit applicant (PLEASE PRINT))**

Business Name:		
Address:		
City:	State:	Zip:
Contact Person:	Phone No.	
Email Address:		

**LOCATION OF PERMITTED ACTIVITY (if different than above (PLEASE PRINT))**

Business Name:		
Address:		
City:	State:	Zip:

**PERMIT BILLING (if different than above (PLEASE PRINT)) (Permits will be invoiced by the City of Bellevue)**

Business Name:		
Address:		
City:	State:	Zip:
Contact Person:	Phone No.	
Email Address:		

**Permit fee:** Please refer to the website for the permit fee amount, which will be invoiced by the City of Bellevue in the following manner:

- Temporary use permits are invoiced within 30 days of permit issuance.
- Until revoked permits are invoiced January each year.
- All permits are subject to a late fee if not paid within 30 days of receipt.

Governmental or non-profit organizations are exempt from permit fees. If non-profit, please provide IRS documentation for non-profit status.

\_\_\_\_\_  
 Applicant Signature

\_\_\_\_\_  
 Date

**FIRE PREVENTION OFFICE USE ONLY:**

Specific Permit Conditions:	
Application Disposition:	<input type="checkbox"/> Approved <input type="checkbox"/> Denied
Reason for Denial:	
Reviewed / Inspected By:	Date:



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## PERMIT CONDITIONS

### High-Piled Storage

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**The following conditions shall be adhered to at all times for the permit to be valid.**

1. An operational permit is required to use a building or portion thereof as a *high-piled storage area* exceeding 500 square feet.
2. Separate operational permits are required for the storage of Aerosols, Flammable and Combustible liquids, Hazardous Materials, Combustible Fibers, and miscellaneous Combustible Materials. Certain quantities and exceptions apply.
3. The structural integrity of racks shall be maintained.
4. Clearance from ignition sources shall be provided and maintained.
5. Smoking shall be prohibited. Approved "No Smoking" signs shall be conspicuously posted.
6. When restocking is not being conducted, aisles shall be kept clear of storage, waste material and debris.
7. Fire department access doors, aisles and exit doors shall not be obstructed.
8. During restocking operations using manual stocking methods, a minimum unobstructed aisle width of 24 inches (610 mm) shall be maintained in 48-inch (1219 mm) or smaller aisles, and a minimum unobstructed aisle width of one-half of the required aisle width shall be maintained in aisles greater than 48 inches (1219 mm).
9. During mechanical stocking operations, a minimum unobstructed aisle width of 44 inches (1118 mm) shall be maintained.
10. Where required by the fire code official, a visual method of indicating the maximum allowable storage height shall be provided.
11. Flue spaces for rack storage shall be provided and maintained.
12. Where an automatic sprinkler system design utilizes protection based on a closed array, array clearances shall be provided and maintained as specified by the standard used.

# HIGH-PILED COMBUSTIBLE STORAGE WORKSHEET

**SPRINKLER DESIGN:**

Sprinkler Density:
Design Area:
Number of Design Sprinklers:
Inside Hose:
Outside Hose:
Type of System: <input type="checkbox"/> Wet <input type="checkbox"/> Dry <input type="checkbox"/> Preaction <input type="checkbox"/> Deluge
Water Supply Duration:
In-Rack Sprinklers: <input type="checkbox"/> Yes <input type="checkbox"/> No
Sprinkler Type: <input type="checkbox"/> Pendant <input type="checkbox"/> Upright <input type="checkbox"/> ESFR
Sprinkler K-Factor: <input type="checkbox"/> 5.6 <input type="checkbox"/> 8 <input type="checkbox"/> 11 <input type="checkbox"/> 14 <input type="checkbox"/> 16.8 <input type="checkbox"/> 22.4 <input type="checkbox"/> 25 <input type="checkbox"/> Other:
Sprinkler Spacing in Sq. Ft:
In-Rack Sprinklers: <input type="checkbox"/> Yes <input type="checkbox"/> No
Sprinkler Temperature:
Static Water Pressure:
Residual Water Pressure:
Flow:
NFPA-13 Design Tables used in the hydraulic calculations, if known:

**CEILING DESIGN:**

Heat Vents: <input type="checkbox"/> Yes <input type="checkbox"/> No    (If Yes: <input type="checkbox"/> Automatic <input type="checkbox"/> Manual)
Draft Stops: <input type="checkbox"/> Yes <input type="checkbox"/> No
Ceiling Height:
Ceiling Slope:

**STORAGE:**

Area of Storage:
Height to top of Storage:
Width of Aisles:
Solid Shelves: <input type="checkbox"/> Yes <input type="checkbox"/> No
Single or Double Row Racks:
Multi-Row Racks: <input type="checkbox"/> Yes <input type="checkbox"/> No
Palletized Storage: <input type="checkbox"/> Yes <input type="checkbox"/> No
Solid Pile Storage: <input type="checkbox"/> Yes <input type="checkbox"/> No

**COMMODITY CLASSIFICATION:**

Commodity Class: <input type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Class IV <input type="checkbox"/> Group A Plastics <input type="checkbox"/> Group B Plastics <input type="checkbox"/> Group C Plastics <input type="checkbox"/> Flammable & Combustible Liquids
Plastics: <input type="checkbox"/> Expanded <input type="checkbox"/> Non-Expanded <input type="checkbox"/> Free Flowing
Expanded: <input type="checkbox"/> Cartoned <input type="checkbox"/> Exposed
Non-Expanded: <input type="checkbox"/> Unstable <input type="checkbox"/> Stable
Encapsulated: <input type="checkbox"/> Yes <input type="checkbox"/> No

## **DEFINITIONS:**

**Cartoned.** A method of storage consisting of corrugated cardboard or paperboard containers fully enclosing the commodity.

**Carton Records Storage.** A Class III commodity consisting predominantly of paper records in cardboard cartons.

**Encapsulation.** A method of packaging that either consists of a plastic sheet completely enclosing the sides and top of a pallet load containing a combustible commodity, a combustible package, or a group of combustible commodities or combustible packages, or consists of combustible commodities individually wrapped in plastic sheeting and stored exposed in a pallet load.

**Expanded (Foamed or Cellular) Plastics.** Those plastics, the density of which is reduced by the presence of numerous small cavities (cells), interconnecting or not, dispersed throughout their mass.

**Exposed Group A Plastic Commodities.** Those plastics not in packaging or coverings that absorb water or otherwise appreciably retard the burning hazard of the commodity. (Paper wrapped or encapsulated, or both, should be considered exposed.)

**Free-Flowing Plastic Materials.** Those plastics that fall out of their containers during a fire, fill flue spaces, and create a smothering effect on the fire. Examples include powder, pellets, flakes, or random-packed small objects [e.g., razor blade dispensers, 1 oz to 2 oz (28 g to 57 g) bottles].

**High-Piled Storage.** Storage of solid-piled, palletized, rack storage, bin box, and shelf storage where the top of the storage is greater than 12 ft (3.7 m) in height. High piled combustible storage also includes certain high-hazard commodities, such as rubber tires, Group A plastics, flammable liquids, idle pallets and similar commodities, where the top of the storage is greater than 6 feet (1829 mm) in height.

**Miscellaneous Storage.** Storage that does not exceed 12 ft (3.66 m) in height, is incidental to another occupancy use group, does not constitute more than 10 percent of the building area or 4000 ft<sup>2</sup> (372 m<sup>2</sup>) of the sprinklered area, whichever is greater, does not exceed 1000 ft<sup>2</sup> (93 m<sup>2</sup>) in one pile or area, and is separated from other storage areas by at least 25 ft (7.62 m).

## **Palletized, Solid-Piled, Bin Box, and Shelf Storage.**

**Closed Array.** A storage arrangement where air movement through the pile is restricted because of 6 in. (152 mm) or less vertical flues.

**Open Array.** A storage arrangement where air movement through the pile is enhanced because of vertical flues larger than 6 in. (152 mm).

**Bin Box Storage.** Storage in five-sided wood, metal, or cardboard boxes with open face on the aisles in which boxes are self-supporting or supported by a structure so designed that little or no horizontal or vertical space exists around boxes.

**Palletized Storage.** Storage of commodities on pallets or other storage aids that form horizontal spaces between tiers of storage.

**Pile Stability, Stable Piles.** Those arrays where collapse, spillage of content, or leaning of stacks across flue spaces is not likely to occur soon after initial fire development.

**Pile Stability, Unstable Piles.** Those arrays where collapse, spillage of contents, or leaning of stacks across flue spaces occurs soon after initial fire development.

**Shelf Storage.** Storage on structures up to and including 30 in. (0.76 m) deep and separated by aisles at least 30 in. (0.76 m) wide.

**Back-to-Back Shelf Storage.** Two solid or perforated shelves up to 30 in. (0.76 m) in depth each, not exceeding a total depth of 60 in. (1.52 m), separated by a longitudinal vertical barrier such as plywood, particleboard, sheet metal, or equivalent, with a maximum 0.25 in. (6.4 mm) diameter penetrations and no longitudinal flue space and a maximum storage height of 15 ft (4.57 m).

**Solid-Piled Storage.** Storage of commodities stacked on each other.

**Solid Unit Load of Non-expanded Plastic (Either Cartoned or Exposed).** A load that does not have voids (air) within the load and that burns only on the exterior of the load; water from sprinklers might reach most surfaces available to burn.

**Rack.** Any combination of vertical, horizontal, and diagonal members that supports stored materials. [1, 2012]

**Double-Row Racks.** Racks less than or equal to 12 ft (3.7 m) in depth or single-row racks placed back to back having an aggregate depth up to 12 ft (3.7 m), with aisles having an aisle width of at least 3.5 ft (1.1 m) between loads on racks.

**Movable Racks.** Racks on fixed rails or guides that can be moved back and forth only in a horizontal, two-dimensional plane. A moving aisle is created as abutting racks are either loaded or unloaded, then moved across the aisle to abut other racks.

**Multiple-Row Racks.** Racks greater than 12 ft (3.7 m) in depth or single- or double-row racks separated by aisles less than 3.5 ft (1.1 m) wide having an overall width greater than 12 ft (3.7 m).

**Portable Racks.** Racks that are not fixed in place and can be arranged in any number of configurations.

**Single-Row Racks.** Racks that have no longitudinal flue space and that have a depth up to 6 ft (1.8 m) with aisles having a width of at least 3.5 ft (1.1 m) between loads on racks.

**Rack Shelf Area.** The area of the horizontal surface of a shelf in a rack defined by perimeter aisle(s) or nominal 6 in. (152 mm) flue spaces on all four sides, or by the placement of loads that block openings that would otherwise serve as the required flue spaces.

**Open Rack.** Racks without shelving or with shelving in racks that are fixed in place with shelves having a solid surface and a shelf area equal to or less than 20 ft<sup>2</sup> (1.9 m<sup>2</sup>) or with shelves having a wire mesh, slatted surface, or other material with openings representing at least 50 percent of the shelf area including the horizontal area of rack members and where the flue spaces are maintained.

**Slatted Shelf Rack.** A rack where shelves are fixed in place with a series of narrow individual solid supports used as the shelf material and spaced apart with regular openings.

**Solid Shelf Rack.** A rack where shelves are fixed in place with a solid, slatted, or wire mesh barrier used as the shelf material and having limited openings in the shelf area.

**Solid Shelving.** Shelving that is fixed in place, slatted, wire mesh, or other type of shelves located within racks. The area of a solid shelf is defined by perimeter aisle or flue space on all four sides. Solid shelves having an area equal to or less than 20 ft<sup>2</sup> (1.9 m<sup>2</sup>) are defined as open racks. Shelves of wire mesh, slats, or other materials more than 50 percent open and where the flue spaces are maintained are defined as open racks.

**Transverse Flue Space.** The space between rows of storage parallel to the direction of loading.

## **Rubber Tire Storage Definitions.**

**Banded Tires.** A storage method in which a number of tires are strapped together.

**Horizontal Channel.** Any uninterrupted space in excess of 5 ft (1.5 m) in length between horizontal layers of stored tires. Such channels can be formed by pallets, shelving, racks, or other storage arrangements.

**Laced Tire Storage.** Tires stored where the sides of the tires overlap, creating a woven or laced appearance.

**Miscellaneous Tire Storage.** The storage of rubber tires that is incidental to the main use of the building; storage areas do not exceed 2000 ft<sup>2</sup> (186 m<sup>2</sup>), and on-tread storage piles, regardless of storage method, do not exceed 25 ft (7.6 m) in the direction of the wheel holes. Acceptable storage arrangements include (a) on-floor, on-side storage up to 12 ft (3.7 m) high; (b) on-floor, on-tread storage up to 5 ft (1.5 m) high; (c) double-row or multi-row fixed or portable rack storage on-side or on-tread up to 5 ft (1.5 m) high; (d) single-row fixed or portable rack storage on-side or on-tread up to 12 ft (3.7 m) high; and (e) laced tires in racks up to 5 ft (1.5 m) in height.

**On-Side Tire Storage.** Tires stored horizontally or flat.

**On-Tread Tire Storage.** Tires stored vertically or on their treads.

**Palletized Tire Storage.** Storage on portable racks of various types utilizing a conventional pallet as a base.

**Pyramid Tire Storage.** On-floor storage in which tires are formed into a pyramid to provide pile stability.