HIGH PILED COMBUSTIBLE STORAGE
FIRE INSTALLATION PERMIT – SUBMITTAL CHECKLIST

Building Permit #_____ Fire Permit #_____

Project Name/Tenant: _____

Site Address: _____ Bldg/Unit/Suite: _____

Applicant: _____ Phone: _____

An IFC Fire Installation Permit is required to use a building or space for the following:

1. Storage of combustible materials in closely packed piles.

2. Combustible materials on pallets, in racks, or on shelves where the top of the storage is greater than 12 feet in height.

3. 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 six feet.

The following information is required at time of application for the Fire Installation Permit to ensure a comprehensive review of your proposal:

Permitting Requirements:

- ❑ Completed Fire Installation Permit Application & Submittal Checklist
- ❑ Submit (2) sets of plans for review by the Redmond Fire Prevention Division.

Plans:
The following is a list of information required on all plan submittals for review of a high piled storage installation. The plan shall be drawn to scale on 11”x17” minimum paper. The applicant is required to submit all of this information so an accurate and timely review may be done

1. Floor plan of the building showing locations and dimensions of high-piled storage areas.
2. Useable storage height for each storage area.
3. Number of tiers within each rack, if applicable.
4. Commodity clearance between top of storage and the sprinkler deflector for each storage arrangement.
5. Aisle dimensions between each storage array.
6. Maximum pile volume for each storage array.
7. Location and classification of commodities in accordance with Section 2303.
8. Location of commodities which are banded or encapsulated.
9. Location of required fire department access doors.
10. Type of fire-suppression and fire-detection systems.
11. Location of valves controlling the water supply of ceiling and in-rack sprinklers.
12. Type, location and specifications of smoke-removal and curtain board systems.
13. Dimension and location of transverse and longitudinal flue spaces.
14. Additional information regarding required design features, commodities, storage arrangement and fire-protection features within the high-piled storage area shall be provided at the time of permit

HIGH PILED STORAGE QUESTIONNAIRE

Building Permit #_____ **Fire Permit #**_____

1) DESCRIPTION OF STORAGE: _____

_____

2) COMMODITY CLASSIFICATION: _____

3) FLOOR AREA OF PROPOSED STORAGE (including aisles): _____

4) METHOD OF STORAGE: (check all that apply) ☐ Solid piles ☐ Racks w/solid shelves

☐ Racks ☐ Bin box ☐ Wood pallets ☐ Plastic pallets ☐ Encapsulated ☐ Other

5) PILE STORAGE: Storage height: _____ Pile dimensions: _____ Aisles: _____

6) RACK STORAGE: ☐ Single-row ☐ Double-row ☐ Multiple-row racks

Rack height: _____ Rack depth: _____ Rack width: _____ Aisles: _____

7) BUILDING COMPONENTS: Emergency vehicle access provided to within 150' of all portions of the first floor of the exterior wall, (Y/N) _____ Distance between exterior access doors: _____ Smoke & heat vents (Y/N) _____ Draft curtains (Y/N) _____

Ceiling height: _____

8) SPRINKLER SYSTEM: Ceiling discharge density: _____ In-rack sprinklers (Y/N) _____

Deflector height: _____ Head type, temperature rating & K-factor: _____

ADDITIONAL INFORMATION: _____

_____

_____

Fire Department use: Proposal approved (Y/N) _____ Modifications required: _____

_____

_____

Reviewer signature: _____ Date: _____

INSTRUCTIONS FOR COMPLETION OF THE
HIGH PILED STORAGE QUESTIONNAIRE

1) **DESCRIPTION OF STORAGE -** Provide an accurate and detailed description of all storage which will be kept within the warehouse. If possible, classify these items into the commodity classifications the items would fall into, and also provide us with adequate documentation to substantiate your determination.

2) **COMMODITY CLASS -** By utilizing the attached listings of the commodity classifications, please provide us with the correct determination that best describes the commodity classifications of the high piled items. Adequate information must accompany the submitted plans to insure the Fire Department will be able to verifying the commodity classification(s) are accurate. The attached list was copied from the International Fire Code. The National Fire Protection Association also has a commodity listing which is somewhat different than the IFC. Please indicate which code you have obtained the information from.

3) **FLOOR AREA OF THE HIGH-PILED STORAGE AREAS ONLY –** Provide the square footage of the high-pile storage area. This must include aisles between and around the storage area.

4) **METHOD OF STORAGE –** Provide us with the method(s) in which you plan on storing, and indicate all that may apply. A lot of customers also include the actual specification sheet(s), pictures, and information from the manufacture supplying the racks, which is very helpful to us.

5) **PILE STRAGE –** High-piled combustible storage includes materials that are stacked in piles on the floor in addition to storage on racks. Provide specific responses to each field if storage is not on racks or shelves.

6) **RACK STORAGE –** ***This information must be detailed and specific.***

TYPE OF RACKS – We need to know if the racks will be made of steel or wood, solid shelves or slatted, portable or fixed racks, etc. It is also important for us to know the proposed rack configuration (single- or double- or multiple-row racks). Your rack supplier will be able to assist you in this, and will be the contact for the detailed specification sheets you will need to provide us in your submittal packet along with your plans.
HEIGHT OF RACKS – How high will the racks be? Are the racks going to be 15 feet high in one area and 35 feet in another? Provide good details, and specification sheets (if available) from your supplier, with your submittals.
DEPTH OF RACKS - How deep will your racks be from the front aisle to the rear of the rack?
WIDTH OF RACKS – How wide are the racks going to be from side to side?
AISLE WIDTH BETWEEN RACKS – We need the aisle width you will be providing. If some areas will be 4 ft wide, while other areas will be 8 ft wide, this type of information is critical for us to know.
At no time shall any aisle be less than 44 inches wide throughout the warehouse.

7) **BUILDING COMPONENTS –** ***Provide as much detail as possible for these items.***

EMERGENCY VEHICLE ACCESS – The International Fire Code requires emergency vehicle access to within 150 feet of all exterior portions of the first floor of the building. Some older buildings may not meet this requirement.
SMOKE AND HEAT VENTS – These roof mounted assemblies are designed and installed to aid in the removal of heat and smoke in the event of a fire.
DRAFT CURTAINS – Draft curtains are structures arranged to limit the spread of smoke and heat along the underside of the ceiling or roof. Draft curtains are typically constructed of gypsum board attached to framing members, extend 4 feet or 6 feet down from the ceiling and divide the area into segments.
CLEAR CEILING HEIGHT – Provide the height of the warehouse as measured from the finished floor level (FFL) to the bottom of the roof decking.

8) FIRE SPRINKLER SYSTEM – A fire sprinkler system is critical for the control of potential fires in storage facilities. Provide as much information as possible for the system in the building. The fire sprinkler system maintenance contractor should be able to assist you with obtaining the required information.

CEILING DISCHARGE DENSITY – Fire sprinkler systems are hydraulically engineered to provide a specified minimum discharge of water in case of a fire. The discharge density is expressed in gallons per minute per square foot of floor area, i.e. 3/2,000.
IN RACK SPRINKLERS – Storage of some materials can require the installation of sprinkler heads in the storage racks. If in rack sprinklers are present or proposed, then answer affirmatively.
HEAD TYPE, TEMPERATURE RATING AND K-FACTOR – This is specific information that is essential for an accurate review of the proposal. Please include information for each of the three items.

ADDITIONAL INFORMATION – Provide any additional information that you have related to this proposal that is not requested on the questionnaire.

The bottom of the form is for fire department use only. Submit the completed form for a review by the Fire Department Fire Prevention Division (425) 556-2246, FAX (425) 556-2250.

COMMODITY CLASSIFICATIONS

Classification of Commodities:
Commodities shall be classified as Class I, II, III, IV, or high-hazard. The materials listed within each of these commodity classifications are assumed to be unmodified for improved combustibility characteristics. The use of flame-retarding modifiers, or the physical form of the material could change the classifications.

Class I Commodities:
Class I commodities are essentially noncombustible products on wooden or nonexpendable polyethylene solid deck pallets, in ordinary corrugated cartons with or without single-thickness dividers, or in ordinary paper wrappings with or without pallets. Class I commodities are allowed to contain a limited amount of Group A plastics in accordance with the Fire Code. Examples of Class I commodities include, but are not limited to, the following.

- Alcoholic beverages not exceeding 20% alcohol
- Appliances-noncombustible, electrical
- Cement in bags
- Ceramics
- Dairy products in nonwax-coated containers (excluding bottles)
- Dry insecticides
- Foods in noncombustible containers
- Fresh fruits and vegetables in non-plastic trays or containers
- Frozen foods
- Glass
- Glycol in metal cans
- Gypsum board
- Inert materials, bagged
- Insulation, noncombustible
- Non-combustible liquids in plastic containers having less than a 5-gallon capacity
- Non-combustible metal products

Class II Commodities:
Class II commodities are Class I products in slatted wooden crates, solid wooden boxes, multiple-thickness paperboard cartons or equivalent combustible packaging material with or without pallets. Class II commodities are allowed to contain a limited amount of Group A plastics in accordance with the Fire Code. Examples of Class II commodities include, but are not limited too the following:

- Alcoholic beverages not exceeding 20% alcohol, in combustible containers
- Foods I combustible containers
- Incandescent or fluorescent light bulbs in cartons
- Thinly coated fine fire on reels or in cartons

Class III Commodities:
Class III Commodities are commodities of wood, paper, natural fiber cloth, or Group C plastics or products thereof, with or without pallets. Products are allowed to contain limited amounts of Group A or B plastics, such as metal bicycles with plastic handles, pedals, seats, and tires. Group A plastics shall be limited in accordance with the Fire Code. Examples of Class III commodities include, but are not limited to, the following:

- Aerosol Level 1 (See Chapter 28 of Fire Code)
- Combustible fiberboard
- Cork, baled
- Feed, bagged
- Food in plastic containers
- Furniture: wood, natural fiber, upholstered, non-plastic, wood or metal with plastic-padded and covered arm rests
- Glycol in combustible containers not exceeding 25%
- Lubricated or hydraulic fluid in metal cans
- Lumber
- Mattresses, excluding foam rubber and foamed plastics
- Non-combustible liquids in plastic containers having a capacity of more than 5 gallons
- Paints, oil base, in metal cans
- Paper and pulp, horizontal storage
- Paper, waster, baled
- Paper and pulp, horizontal storage, or vertical storage that is banded or protected with approved wrap
- Paper in cardboard boxes
- Pillows, excluding foamed rubber and foamed plastics
- Plastic-coated paper food containers
- Plywood
- Rags, baled
- Rugs, without foamed backing
- Sugar, bagged
- Wood, baled
- Wood doors, frames and cabinets
- Yarns of natural fiber and viscose

Class IV Commodities:
Class IV commodities are Class I, II, III products containing Group A plastics in ordinary corrugated cartons and Classes I, II, III products, with Group A plastic packaging, with or without pallets. Group B plastics and free-flowing Group A plastics are also included in this class. The total amount of non-freeflowing Group A plastics shall be in accordance with the Fire Code. Examples of Class IV commodities include, but are not limited to, the following:

- Aerosol, Level 2 (see Chapter 28 of the Fire Code)
- Alcoholic beverages, exceeding 20% but less than 80% alcohol, in cans or bottles in cartons
- Clothing, synthetic or non-viscous
- Combustible metal products (solid)
- Furniture, plastic upholstered
- Furniture, wood or metal with plastic covering and padding
- Glycol in combustible containers (greater that 25% and less than 50%)
- Linoleum products

- Paints, oil base in combustible containers
- Pharmaceuticals, alcoholic elixirs, tonics, etc.
- Rugs, foamed back
- Shingles, asphalt
- Thread or yarn, synthetic or non-viscous

High-hazard – Commodities:
High-hazard commodities are high-hazard products presenting special fire hazards beyond those of Class I, II, III, or IV. Group A plastics not otherwise classified are included in this class. Examples of high-hazard commodities include, but are not limited to, the following:

- Aerosol, Level 3 (see Chapter 28 of the Fire Code)
- Alcoholic beverages, exceeding 80% alcohol, in bottles in cartons
- Commodities of any class in plastic containers in carousel storage
- Flammable solids (except solid combustible metals)
- Glycol in combustible containers (50% or greater)
- Mattresses, foamed rubber or foamed plastic
- Pallets and flats which are idle combustible
- Paper, asphalt, rolled, horizontal storage
- Paper, asphalt, rolled, vertical storage
- Paper and pulp, rolled, in vertical storage which is unbanded or not protected with approved wrap
- Pillows, foamed rubber and foamed plastics
- Pyroxylin
- Rubber tires
- Vegetable oil and butter in plastic containers