Houston Fire Department
Hazardous Materials Inspection Team

High-Piled Storage Plan Submittal Guideline

This handout is meant as a guide to define the minimum information needed in the high-piled storage submittal package for review by the Hazardous Materials Inspection Team. The Building Department also has information that must be shown on plans for their portion of the review process which is different from the information we require. Each project is unique, and the specific requirements needed for your particular project may vary from the information provided below.

A total of four (4) identical plan sets must be submitted to the Building Department at 3300 Main.

All plans will be reviewed under present code requirements unless prior approval for a previous code of record has been approved by our office, and a copy of that approval is attached to the front of all plan sets.

Attach to the front of all plan sets a correctly filled-out and signed "Owner's Statement of Intended Use." This form is available at 3300 Main, or can be found online at: http://documents.publicworks.houstontx.gov/documents/divisions/planning/enforcement/owners_statement_intended_use.pdf

If your project involves the storage of any hazardous materials (see Ch. 27 and Appendix E), attach to the front of all plan sets a correctly filled-out and signed Hazardous Materials Inventory Statement. Forms and instructions can be found online at: http://www.houstontx.gov/fire/business/permits.html#hazmat

Required information within plan set:

- Show surrounding streets, property lines, buildings, and all applicable dimensions. Print on plans height of project building from ground to highest peak.
- Clearly mark on plans fire apparatus access roadway(s). Mark all applicable dimensions. Ensure that an aerial access roadway is provided if applicable. Our minimum acceptable turning radius is 28 ft.
- If a public street is used as part of your fire apparatus access roadway, print statement on plans that the area between road and building is free of obstructions from fences, large drainage ditches, brush, etc., if applicable.
- Print on plans roadway will support a load of 90,000 lbs. and is all-weather concrete or asphalt. Engineering stamp required. (Not required for public roads.)
- Clearly mark on plans a concrete or asphalt walkway to all HFD access doors, if applicable. Minimum acceptable width is 5 feet.
- Mark location of fire hydrant(s) on plans. Hydrant(s) must be located a code compliant distance from project. Also, Hydrant(s) must be no further than 15 feet in distance from the edge of a fire apparatus access roadway, and be no closer to the building than 40 feet.

- Print on plans adjacent to hydrant(s) the G.P.M. flow at 20 P.S.I. residual pressure. Flow test results (showing date of test and complete flow test results) must be attached to front of each plan set, or scanned into and incorporated into the plans.
- Show on plans any fences, gates, or other possible outdoor obstructions to the fire apparatus access roadway(s) or HFD access doors. Must have 911 keybox at gate(s), or state on plans that gate(s) are never locked.
- If plans show a fence between apparatus access roadway and building, that fence must have man gate(s) with 911 keyboxes, and walkways, that line-up with each and every HFD access door on that side between the fence and the road.
- Show complete rack / commodity storage array layout and all details. Include aisle widths. Ensure no dead-end aisles greater than 20 ft.
- Print on plans square-footage of high-piled area.
- For separated high-piled areas provide square footage for each area and show separation wall(s). Print on plans rating of wall(s).
- Print on plans “No High-Piled Storage” for those areas where there will be no high-piled storage.
- Show HFD access doors, if required, in compliance with Ch. 23. Clearly designate which doors shown on plans are HFD access doors. Include dimensions between doors.
- Note on plans that HFD access doors to be marked on site with “HFD” on the exterior in the top left hand corner, no less than four (4) inches in height on a contrasting background.
- Clearly note or show hardware type for HFD access doors. Must allow entrance from exterior (using a key from the 911 keybox) as well as exit from interior (one motion without the use of a key or special knowledge or effort). Drop bars, magnetic locks and manually operated flush bolts or surface bolts are never allowed. Electronic card reader locks are only allowed if they cannot interfere with the operation of the HFD access door under any circumstance.
- Show on plans a sidewalk (5 ft. min.) from apparatus access roadway to HFD access doors, if applicable.
- Show location of fire department connection (FDC).
- Print on plans sprinkler design criteria per NFPA 13 (2002). Include all tables, figures, and references used to calculate density. Include all calculations. If your storage array includes flammable/combustible liquids or aerosols, show sprinkler design criteria for those items as well, per NFPA 30/30B and/or Ch. 34.
- Show on plans a minimum of one 911 keybox with Falcon lock. (Not required for shell buildings.)
- If interior of your project has any fencing:
  - Cannot obstruct access doors, aisles, or exits in any manner.
  - The maximum size of a fenced enclosure or multiple fenced enclosures shall not exceed 10,000 sq. ft. in an entire building.
  - The maximum dimension of a fenced area shall not exceed 100 ft. for storage of Class I – IV commodities and shall not exceed 50 ft. for storage of high hazard commodities.

- Access gates into fenced areas shall be provided every 100 lineal feet or fraction thereof, on the exterior perimeter of the fenced area.
- Access gates shall not be locked, and shall be provided with either approved passage hardware or no hardware of any kind.
- Required segregated storage, such as aerosol storage, to be reviewed on a case-by-case basis.

If smoke / heat (s/h) vents are required:

- Show on plans location of s/h vents. Include pertinent dimensions.
- Print on plans s/h vent calculations.
- Provide spec. sheet for s/h vent.
- Show on plans location of any interior walls in relation to s/h vents and provide dimension between the wall and vent.
- For automatic pop-up vents print on plans activation temperature of fusible link.
  - If non-ESFR sprinkler, vent link must be at least 70°F above the activation temperature of the sprinkler heads.
  - If ESFR sprinkler, any automatic vent provided must be rated at least 360°F.
- Pop-up vents require note on plans that manual release provided at roof, as well as manual release cord 10 – 12 ft. A.F.F.
- For melt-out / drop-out s/h vents, note on plans “No obstructions under smoke/heat vents.”