

# Information Bulletin

NUMBER 40

## Gravity Waste Chutes

Many multiple story apartment complexes along with some mercantile occupancies have arrangements for central trash collection that utilize an internal gravity waste chute. By definition, this is an enclosed vertical passageway (riser) in a building, used for transferring trash by gravity to a room at the bottom or to an interface to a compactor. It is a vital and convenient facility in any high-rise building. Potential problems that may be associated with these chutes include odor, fire and smoke.

Recognizing these problems, the National Fire Protection Association (NFPA) has developed NFPA 82 that addresses potential fire and smoke that may originate in the chute system.

### Construction Requirements - *Metal Waste Chutes*

Standard metal gravity waste chutes need to be a minimum of 24 inches in diameter and made of stainless steel, galvanized steel, or aluminum-coated steel not lighter than 16 U.S. gauge. Screws, rivets, or other projections on the interior surface of the chute are prohibited. Laps or joints need to be designed so that liquid will drain to the interior of the chute. The chute will also need to be vented at the top with the opening being the same cross-sectional area as the chute.

Vertical waste chutes in all stories above the storage or compacting room shall be enclosed within a continuous fire-rated enclosure consistent with the construction type. The walls of the enclosure shall have a fire resistance rating of not less than 2 hours if the building is four or more stories in height and not less than 1 hour if the building is less than four stories in height.

Openings in the fire-rated enclosure shall be as follows:

- 1 ½ hour fire resistance rating for a 2 hour rated enclosure.

- 1 hour fire resistance rating for a 1 hour rated enclosure.

### Chute Loading Doors

All chute loading doors into a waste chute shall be provided with a self-closing, positive latching frame and gasketed fire door assembly having a fire protection rating of not less than 1 hour. The design and installation shall be such that no part of the frame or door projects into the chute.

Chute loading doors shall open only to a room that is designed and used exclusively for accessing the chute opening. The room used for accessing the chute opening shall be separated from other spaces and protected by one of the following methods:

- Enclosing the area with a fire barrier without windows that has a 1-hour fire resistance rating
- Protecting the area with an automatic fire extinguishing system

### Chute Discharge Door

The bottom of a waste chute shall be protected by an approved automatic closing or self-closing door with a fire resistance rating of 1 ½ hours. Chute discharge doors shall be permitted to be held open by a fusible link.

### Chute Discharge Room

Waste chutes shall terminate or discharge directly into a room having a minimum fire resistance rating not less than that specified for the chute. Openings to such rooms shall be protected by approved automatic closing or self-closing 1 ½ hour fire doors. Trash gravity chutes shall not discharge directly into an incinerator.

Waste storage rooms in a building or structure used for storage or handling of waste with a combined total exceeding 1 cubic yard of uncompacted waste shall be separated from other parts of the building by walls and floor-ceiling assemblies having a fire resistance rating of not less than 2 hours.

### Automatic Sprinkler Protection

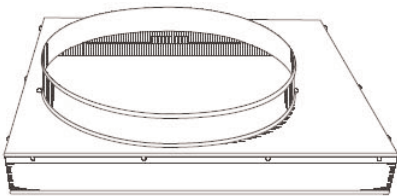
Metal gravity chutes are required to be protected internally by automatic sprinklers. This protection requires that a sprinkler be installed at or above the top service opening of the chute. In addition, a sprinkler shall be installed within the chute at alternate floor levels in buildings over two stories in height, with a mandatory sprinkler located at the lowest service level.

Automatic sprinklers installed in gravity chute service openings shall be recessed out of the chute area through which the material travels. Automatic sprinklers shall also be installed in chute terminal (discharge) rooms

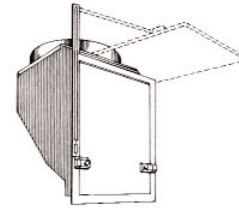
Some jurisdictions may allow the automatic sprinkler system to run off of the domestic water supply line. Check with a licensed fire protection company or local building officials to determine local code requirements.

### Trash Chute Discharge Door

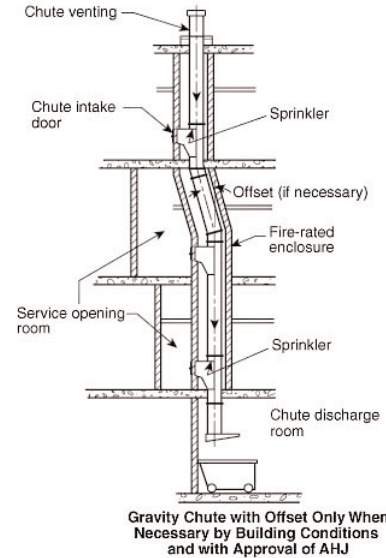
For open-end discharge requirements, a UL listed 1 ½ hour rolling incline, self-closing "AC" discharge door, with fusible link, may be used. When the 165° fusible link is released by excessive heat, gravity causes the door to roll shut. Spring-loaded type discharge doors are also available for this purpose.



The sliding discharge is used for trash chutes when the material drops directly into a container.



A "hopper" type discharge door is used where building conditions dictate a change of direction for material to pass through a wall. This door is also UL 1 1/2 hour "B" labeled.



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### Summary

Proper construction and maintenance of gravity trash chutes and discharge rooms will offer improved protection to building tenants from the effects of fire and smoke should a fire occur within the chute. It will help to contain the spread of fire, smoke and odors to other portions of the building structure. Regular cleaning and inspection by a qualified contractor will keep your waste chute in peak operating condition.

Discharge door illustrations courtesy of Western Chutes®

*This bulletin is intended only as a reminder and is offered solely as a guide to assist management in its responsibility of providing a safer working environment. This bulletin is not intended to cover all possible hazardous conditions or unsafe acts that may exist. Other unsafe acts or hazardous conditions should also be noted and corrective action taken.*