

## PORTABLE FIRE EXTINGUISHERS

The basic types of fires are Classes A, B, C and D as defined in the following paragraphs.

Class A fires are fires in ordinary combustible materials, such as wood, cloth, paper, rubber, and many plastics.

Class B fires are fires in flammable liquids, gases, and greases.

Class C fires are fires which involve energized electrical equipment where the electrical nonconductivity of the extinguishing media is of importance. (When electrical equipment is de-energized, extinguishers for Class A or B fires may be used safely.)

Class D fires are fires in combustible metals, such as magnesium, titanium, zirconium, sodium, and potassium.

### HYDROSTATIC TEST INTERVAL FOR EXTINGUISHERS extinguisher type

Test interval. Year

Soda-Acid .....	5
Cartridge-Operated Water and/or Antifreeze.....	5
Storage-Pressure Water and/or Antifreeze .....	5
Wetting Agent.....	5
Foam .....	5
Loaded Stream .....	5
Dry Chemical Extinguishers with Stainless Steel Shells or Soldered Brass Shells..	5
Carbon Dioxide Extinguishers .....	5
Dry Chemical Extinguishers with Brazed-Brass Shells, Mild-Steel Shells, or Aluminum Shells.....	12
Bromotrifluoromethane - Halon 1301 .....	12
Bromochlorodifluoromethane - Halon 1211.....	12
Dry Powder Extinguishers for Metal Fires .....	12

FIRE EXTINGUISHERS TAG COLORS (91-50, 91-51)

	<u>TAG</u>	<u>Lettering</u>
1990	Green	Black
1991	Light Blue	Black
1992	White	Black
1993	Yellow	Black
1994	Green	Black

FLAMMABLE LIQUID TAGS FOR TANK TRUCKS (129.1-104)

06/30/90 - 6/30/91	Green
06/30/91 - 6/30/92	White
06/30/92 - 6/30/93	Yellow
6/30/93 - 6/30/94	Orange
6/30/94 - 6/30/95	Green

## NON-ACCEPTABLE AND OBSOLETE TYPES

### A. Non-Acceptable Types

- (1) *Stored Pressure Water and/or Antifreeze*—Brass or Fiberglass shells;
- (2) *Dry chemical* (over 2 ½ lb. capacity)—Brass shells;
- (3) *Soda-acid*—Brass or Copper shells;
- (4) *Foam*—Brass or Copper shells;
- (5) *Cartridge-Operated Water*—Brass or Copper shells;
- (6) *Cartridge-Operated Loaded Stream*—Brass or Copper shells;

**"THE RELIABILITY AND SAFETY OF THE ABOVE TYPES  
CANNOT BE DETERMINED BY STANDARD HYDROSTATIC TEST METHODS"  
NFPA Committee on Portable Fire Extinguishers**

### B. Obsolete Models

Soda-acid, foam, and cartridge-operated water types (including antifreeze and Loaded Stream) with stainless steel shells are recommended to be replaced because:

- (1) Parts are no longer available; substitute parts should NEVER be used as they may create a serious danger.
- (2) Method of operation is very difficult; does not have control valve for on-and-off operation.
- (3) *Listing Approval has been withdrawn* by Underwriters laboratories, Inc. (UL) and by Factory Mutual (FM).



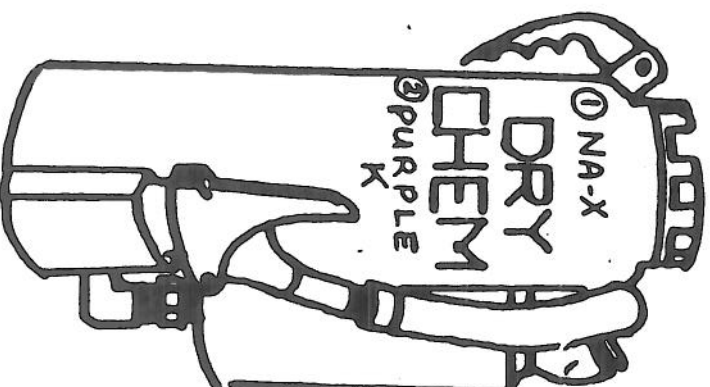
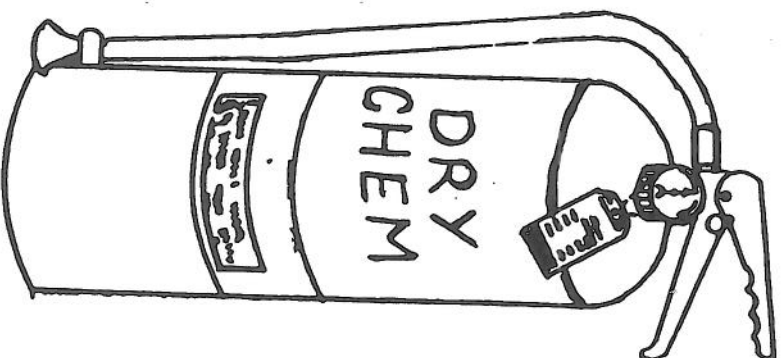
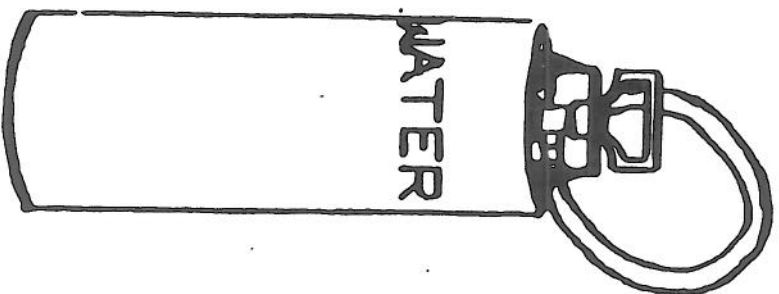
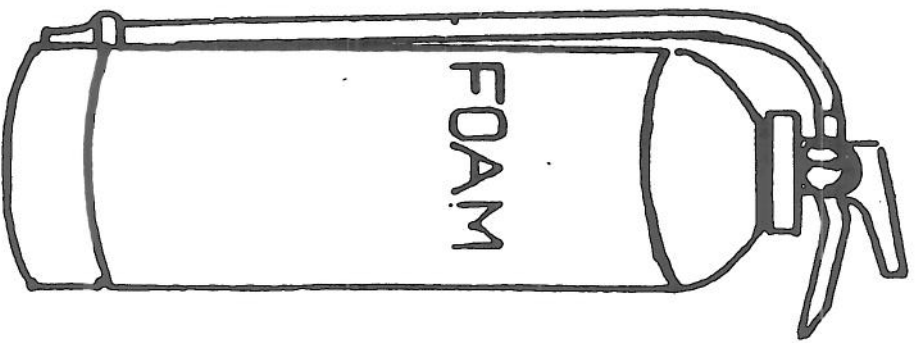
THE ABC+D's OF  
FIRE EXTINGUISHER CLASSIFICATION

A.C.T.

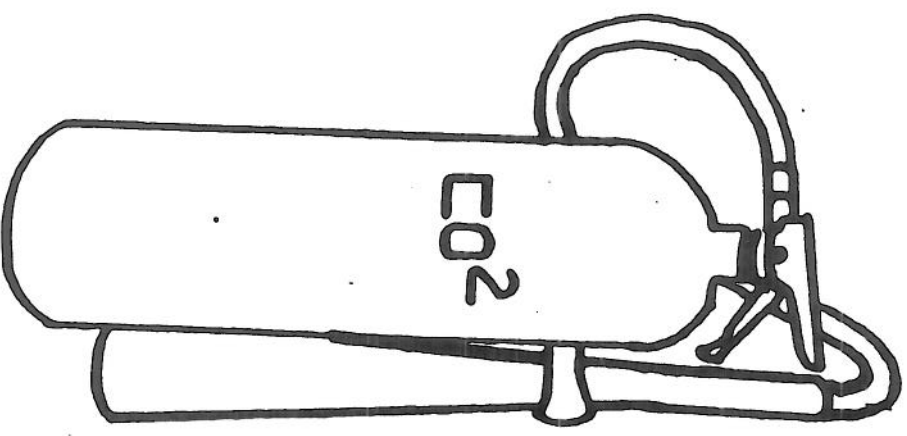
THE ABC+D'S OF  
FIRE EXTINGUISHER CLASSIFICATION

WHAT TYPE OF FIRE CAN I EXTINGUISH?

LIST LETTER(S) BELOW EACH EXTINGUISHER



LIST BOTH ① and ②



①

②

Name \_\_\_\_\_

Date \_\_\_\_\_

## FIRE EXTINGUISHER TEST

Short answer – enter the correct answer in the space provided.

1. Ordinary combustible fires are Class \_\_\_\_\_ fires.
2. Combustible metal fires are Class \_\_\_\_\_ fires.
3. Flammable liquid fires are Class \_\_\_\_\_ fires.

Multiple Choice – draw a circle around the letter preceding the correct answer.

4. What is the symbol for a Class C fire extinguisher?  
star  
circle  
square  
triangle
5. What is the symbol for a Class D fire extinguisher?  
circle  
star  
triangle  
square
6. What is the symbol for a Class A fire extinguisher?  
square  
circle  
triangle  
star

True or False – if the statement is true, draw a circle around the "T"; if false, draw a circle around the "F".

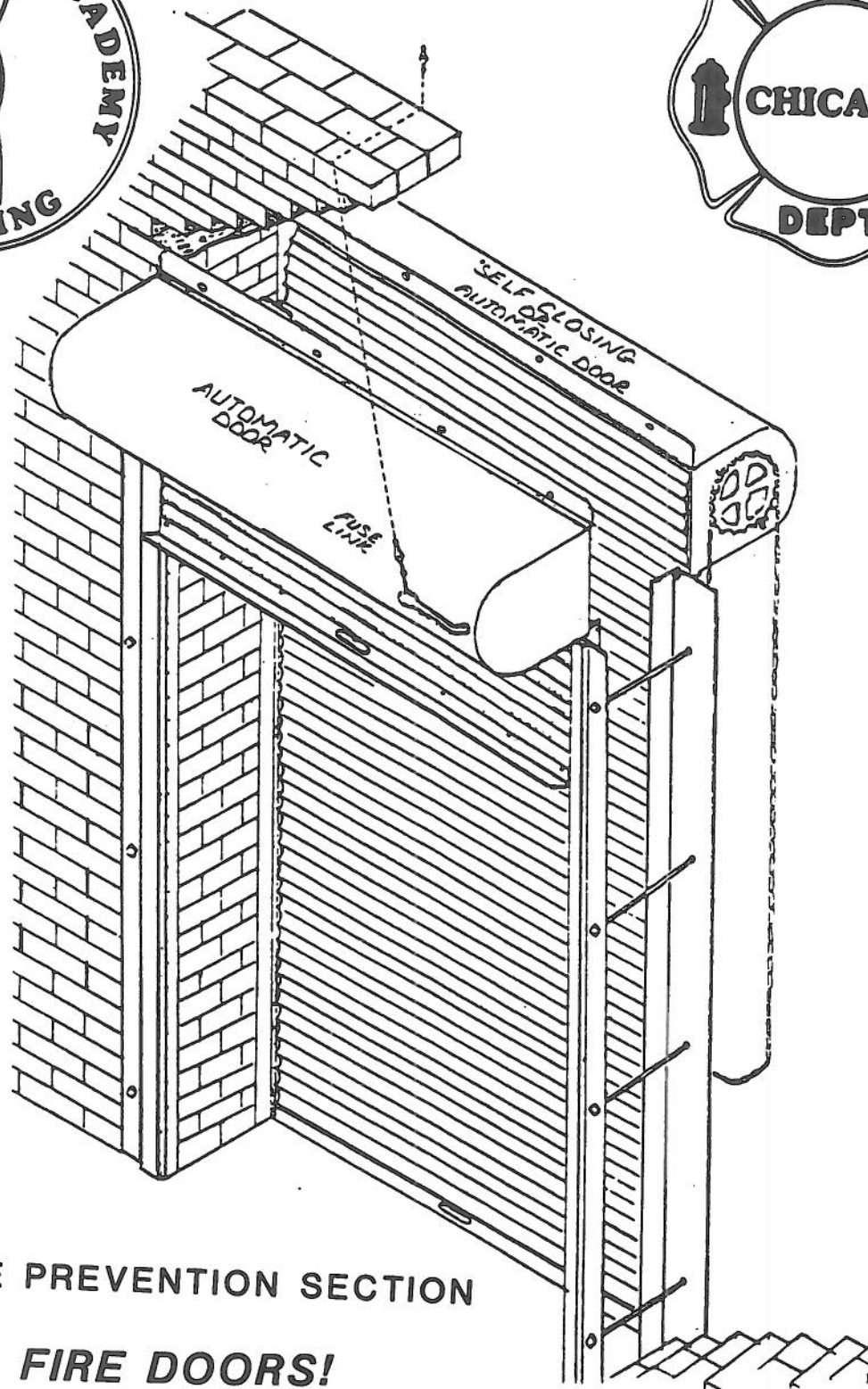
7. T F The color associated with the Class A extinguisher is red.
8. T F The color associated with the Class C extinguisher is blue.
9. T F The color associated with the Class B extinguisher is yellow.

Matching – match the symbol in column 1 with the correct color in column 2. Place the corresponding letter after the corresponding number.

- |                          |           |
|--------------------------|-----------|
| 10. <u>    </u> Triangle | A. Green  |
| 11. <u>    </u> Circle   | B. Yellow |
| 12. <u>    </u> Star     | C. Blue   |

## **MAJOR FIRE DOOR VIOLATIONS**

1. Violation # 1248    Discontinue propping, wedging, tying doors.  
    ( especially in boiler rooms and stairway doors )
2. Violation # 1246    Repair self closing device  
    ( door does not close or closes but does not latch )
3. Violation # 1250    Remove fusible links  
    ( on old boiler room or stairway doors not allowed must be self closing )
4. Violation # 1394    Provide wire glass for B and C door  
    ( usually broken glass has been replaced but not with wire glass )
5. Violation # 1244 or 1524    Provide self closing device
6. Violation # 1380    Replace fusible links  
    ( sometimes you will find them painted over )
7. Violation # 1378    Repair fire door
8. Violation # 1248    Can also be used if fire door is blocked by obstruction such as  
    stock, etc.



**FIRE PREVENTION SECTION**

***FIRE DOORS!***



FIRE DOORS  
( REVISED MAY, 20th 1986 )

GENERAL: 15-12-110

CLASS A DOORS ( 3 HOURS ) USED FOR THE PROTECTION OF OPENINGS IN FIREWALLS..( NO GLASS OBSERVATION PANEL PERMITTED ).

CLASS B DOORS (1/1/2 HOURS) USED FOR THE PROTECTION OF OPENINGS IN VERTICAL SHAFTS AND OTHER OPENINGS. (100 SQUARE INCHES OF WIRE GLASS ALLOWED FOR OBSERVATION PANEL.)

CLASS C DOORS ( 3/4 HOURS ) USED FOR THE PROTECTION OF OPENINGS BETWEEN ROOMS AND CORRIDORS. ( 1296 SQUARE INCHES OF WIRE GLASS ALLOWED FOR OBSERVATION PANEL ).

CLASS D DOORS ( 1 1/2 HOURS ) USED FOR THE PROTECTION OF OPENINGS IN EXTERIOR WALLS. ( NO OBSERVATION PANEL PERMITTED ).

CLASS E DOORS ( 3/4 HOURS ) USED FOR THE PROTECTION OF OPENINGS IN EXTERIOR WALLS. ( 720 SQUARE INCHES OF WIRE GLASS ALLOWED FOR OBSERVATION PANEL.

15-28-280 ASPHALT, TAR, PITCH OR RESIN HEATING ROOMS.  
CLASS B DOOR (1 1/2 HOURS)

15-28-730 BALING ROOM.  
A) WITHIN TYPE 1A, 1B, 1C, OR II BUILDINGS, CLASS B DOOR (1 1/2 HOURS)  
B) WITHIN TYPE IIIA, IIIB, OR IIIC BUILDINGS, CLASS C DOOR (3/4 HOUR)

13-84-130(A) BOWLING PIN REFINISHING ROOM.  
CLASS C DOOR (3/4 HOUR)

15-24-930 DRY CLEANING ROOM.  
CLASS C DOOR (3/4 HOUR)

15-8-180(B) DUMBWAITER SHAFT.  
CLASS B DOOR (1/2 HOUR)

15-8-180(B) ELEVATOR SHAFT.  
CLASS B DOOR (1/2 HOUR)

13-84-210(A) EXIT COURT.  
CLASS D OR E DOORS

15-8-110(B) EXTERIOR WALLS.  
CLASS D OR E DOORS

15-8-060(C)	FIRE WALLS. CLASS A DOORS (3 HOURS)
15-24-370	FLAMMABLE LIQUID VAULT CLASS A DOOR (3 HOUR)
15-24-270	FUEL OIL STORAGE ROOM. CLASS A DOOR (3 HOUR)
15-8-140(D)	GROUP HOMES. 1 3/4" INCH SOLID CORE WOOD DOOR.
15-28-130	HAZARDOUS CHEMICAL ROOM. CLASS A DOOR (3 HOUR)
15-8-230	HEATING PLANT OR BOILER ROOM ENCLOSURE. CLASS B DOOR (1 1/2 HOURS)
15-28-630	HIGHLY FLAMMABLE MATERIAL STORAGE. A) 4 HOUR SEPARATION, CLASS A DOOR (3 HOURS) B) 1 AND 2 HOUR SEPARATION, CLASS B DOOR (1 1/2 HOUR)
13-80-030(A)	INSTITUTIONAL UNIT, EXIT CORRIDOR SEPARATION. TWENTY (20) MINUTE LABELED DOOR.
13-80-030(C)	INSTITUTIONAL UNIT, SMOKE STOP PARTITIONS. CLASS C DOORS (3/4 HOURS)
13-80-030(B)	INSTITUTIONAL UNIT, 3 HOUR FIRE RESISTIVE SEPARATION. CLASS A DOOR (3 HOUR)
15-8-170(A)	LAUNDRY AND RUBBISH CHUTES. CLASS B DOORS (1 1/2 HOURS)
13-64-020(B)	MULTIPLE DWELLING, PUBLIC CORRIDORS. 1 3/4" INCH SOLID WOOD FLUSH DOORS.
13-64-020(C)	MULTIPLE DWELLING, TWO HOUR VERTICAL SEPARATION. CLASS C DOORS (3/4 HOUR)
13-200-240(D)	RESIDENTIAL CORRIDOR DOORS. 1 3/4" INCH SOLID WOOD DOORS.
13-96-290(C)	RESIDENTIAL PRIVATE GARAGE. 1 3/4" INCH SOLID WOOD FLUSH DOOR.
13-200-240(B)	RESIDENTIAL STAIRWAY ENCLOSURE. 1 3/4" INCH SOLID WOOD FLUSH DOOR.
13-200-210	RESIDENTIAL TWO HOUR VERTICAL SEPARATION. CLASS B DOORS (1 1/2 HOUR)
15-8-180(A)	RESIDENTIAL STAIRWAY ENCLOSURE, NOT EXCEEDING 3 STORIES. 1 3/4" SOLID WOOD FLUSH DOORS.

- 15-6-180 STAIRWAY AND SHAFT ENCLOSURES.  
CLASS B DOORS (1 1/2 HOUR)
- 13-196-290(B) STAIRWAY ENCLOSURE, PRE-ORDINANCE HOTELS.  
CLASS C DOORS (3/4 HOURS)
- 13-56-290(B) SUBWAY OR PUBLIC SPACE SEPARATION.  
CLASS A DOOR (3 HOURS)
- 13-84-080(D) THEATER, DRESSING ROOM, STORAGE ROOMS, ETC.  
CLASS C DOORS (3/4 HOURS)
- 13-84-120(D) THEATER PROJECTION ROOM.  
CLASS B DOORS (1 1/2 HOURS)
- 13-84-080(B&3) THEATER TYPE I STAGE, EXTERIOR OPENINGS.  
CLASS D DOORS (1 1/2 HOURS)
- 13-84-080(B&1) THEATER TYPE I STAGE, INTERIOR OPENINGS.  
CLASS A DOORS (3 HOURS)

## FIRE DOORS - INSPECTION CONSIDERATIONS

When conducting an inspection some important points should be remembered;

Class "A" Doors All are 3 hour doors.

- o Are the doors and their frames in good condition. If the door does not fit securely it has to be repaired.
- o On sliding gravity type doors, are the overhead rails clean and straight.
- o Are the rollers clean and lubricated.
- o Is the door blocked or wedged by rubbish in front or behind the door that will slow or prevent closing.
- o Is there stock pressing against the door or blocking the door.
- o Are the roller guides operating properly, or missing.
- o Are the bumpers bent so that the door will not close securely.
- o Are the counter weights in good condition.
- o On overhead roll type doors are the vertical guide rails bent from being hit by skids or lift trucks.
- o Are the weight arms in the proper position ie; horizontal.
- o On both types of door, are the fusible links clean, and have tension on the connecting chains or rope. (A common violation with fusible links is being painted.

Class "B" Doors May be 1 or 1½ hour doors. They are used to protect walls and/or openings with up to a 2 hour fire rating.

- o A class "B" door may have an observation window with a maximum of 100 sq inches. ( No side may be over 12 inches)
- o Only wired glass may be used in "B" & "C" fire door windows.

Self Closing Devices are required on all stairwell doors, boiler room doors, chutes and similar openings. Where a self closing device is required there can be no fusible links, wedges, or other devices to hold the door open.

REMEMBER..... FIRE DOORS PROTECT THE INTEGRITY OF A FIRE WALL. IF THE FRAME AND DOOR ARE NOT MAINTAINED IT CAN BE THE SAME AS HAVING A BREACHED WALL.

13-160-640

LIGHTING 13-160-660

FIRE WINDOWS  
OR SHUTTERS

15-12-110

CLASS D-OR-E  
DOORS

15-8-110, 15-12-110

NOT LESS THAN  
30" WIDE

13-160-640

13-160-640  
OPENINGS  
TO BE  
PROTECTED  
WITHIN 10'DOOR SHALL  
BE FLUSH WITH  
FLOOR 13-160-640LIVE LOAD OF 100  
POUNDS PER SQUARE FOOT

CAC 86

# TYPICAL STAIRS

(5)

WIDTH OF STAIRS-MORE THAN  
40 PERSONS PER FLOOR-44 INCHES  
40 PERSONS OR LESS PER FLOOR  
36 INCHES 13-160-210

SELF CLOSING CLASS B  
DOOR 15-8-180

HEADROOM 13-160-350

RAILS SHALL NOT PROJECT  
MORE THAN 4 INCHES INTO  
STAIRS 13-160-200

WALL RAILS-STAIRS LESS  
THAN 44 INCHES WIDE,  
1 WALL RAIL. MORE  
THAN 44 INCHES WIDE,  
2 WALL RAILS.

13-160-320

WHEN THE DOOR  
OPENS ONTO A  
PLATFORM IT SHALL  
LEAVE 75% OF THE WIDTH  
OPEN 13-160-200

MAXIMUM RISER HEIGHT  
8 INCHES  
MINIMUM WIDTH OF A TREAD  
9 INCHES 13-160-300

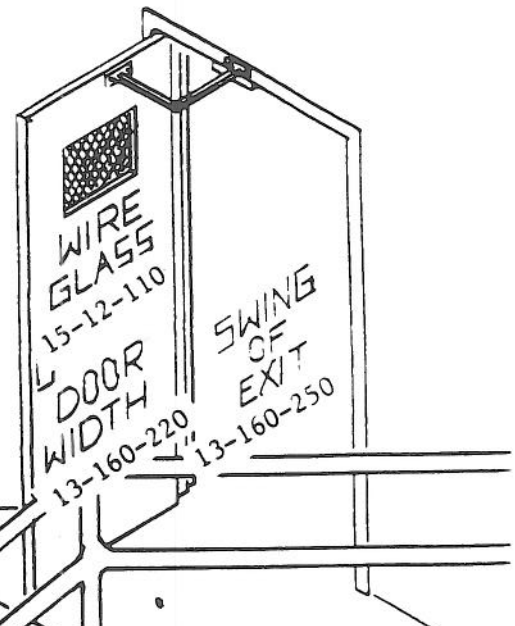
SOLID RISERS AND TREADS EXCEPT  
IN BOILER ROOMS AND MECHANICAL  
ROOMS 13-160-330

PLATFORM SHALL BE NOT  
LESS THAN THE WIDTH OF  
THE STAIR BUT DOES  
NOT HAVE TO EXCEED  
4 FEET 13-160-260

NO STORAGE UNDER  
STAIRS 13-160-330

STAIR CONSTRUCTION  
SHALL BE NON-  
COMBUSTIBLE IN  
BUILDINGS OF TYPE  
I A B I C OR II  
CONSTRUCTION  
13-160-330

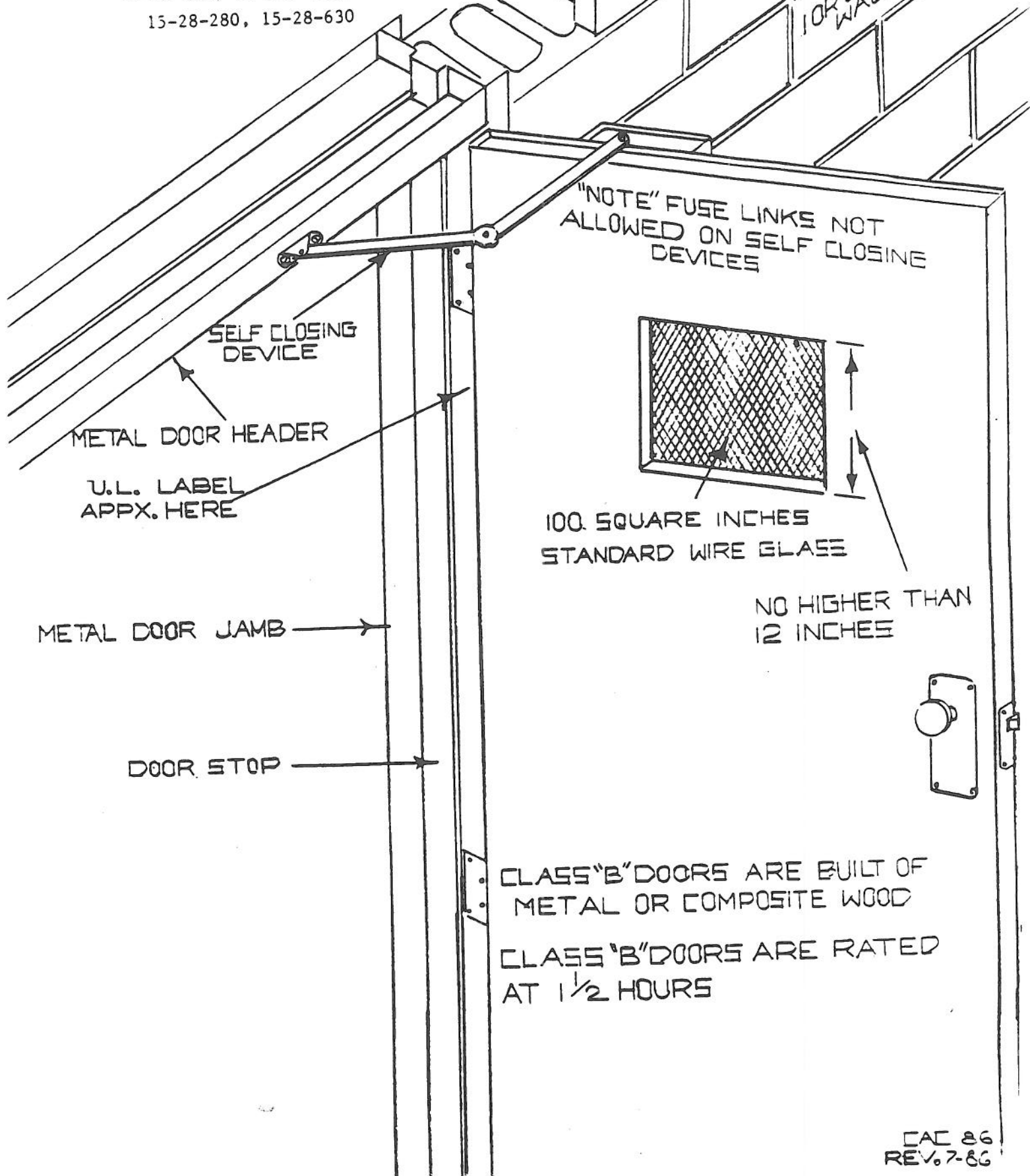
ENCLOSURE-3 FLOORS  
OR LESS, 1 HOUR  
EXCEEDING 3 FLOORS  
2 HOURS 15-8-140



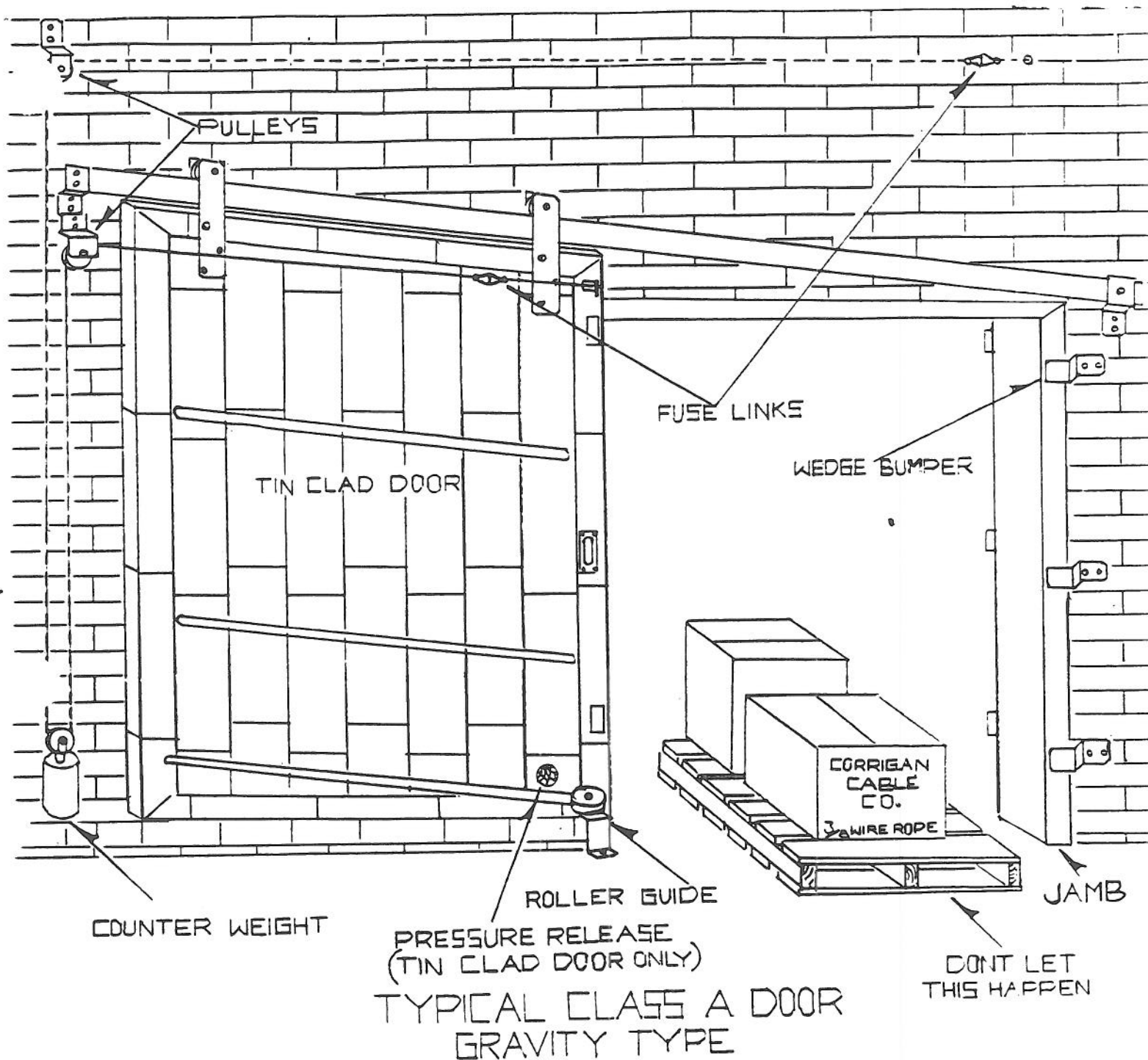


# THE CLASS "B" DOOR

13-84-110, 15-8-180, 15-8-230,  
15-12-110, 13-160-400, 13-160-500,  
15-28-280, 15-28-630



(5.)



15-8-060

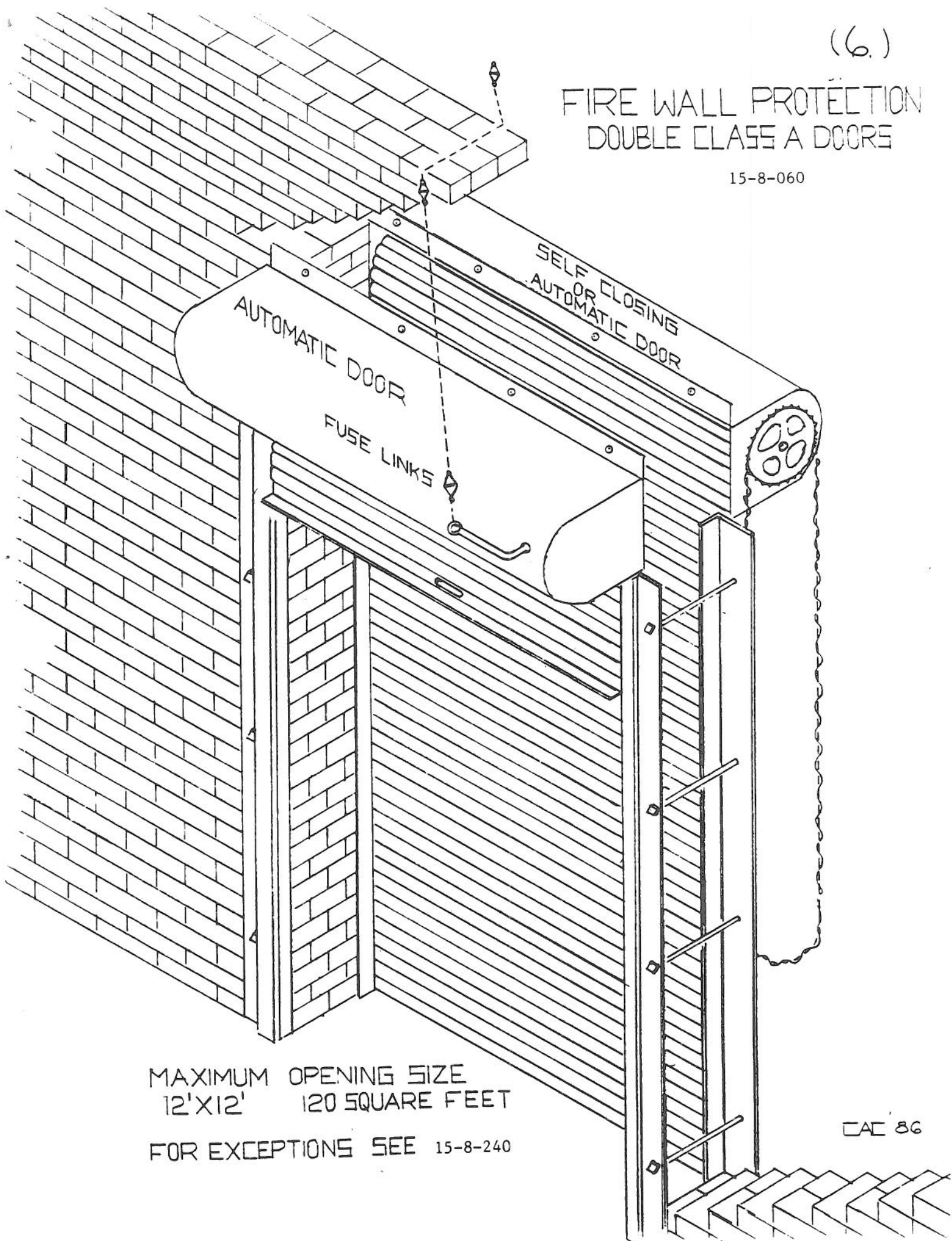
CAC 86  
REV. 7-86



(6.)

# FIRE WALL PROTECTION DOUBLE CLASS A DOORS

15-8-060



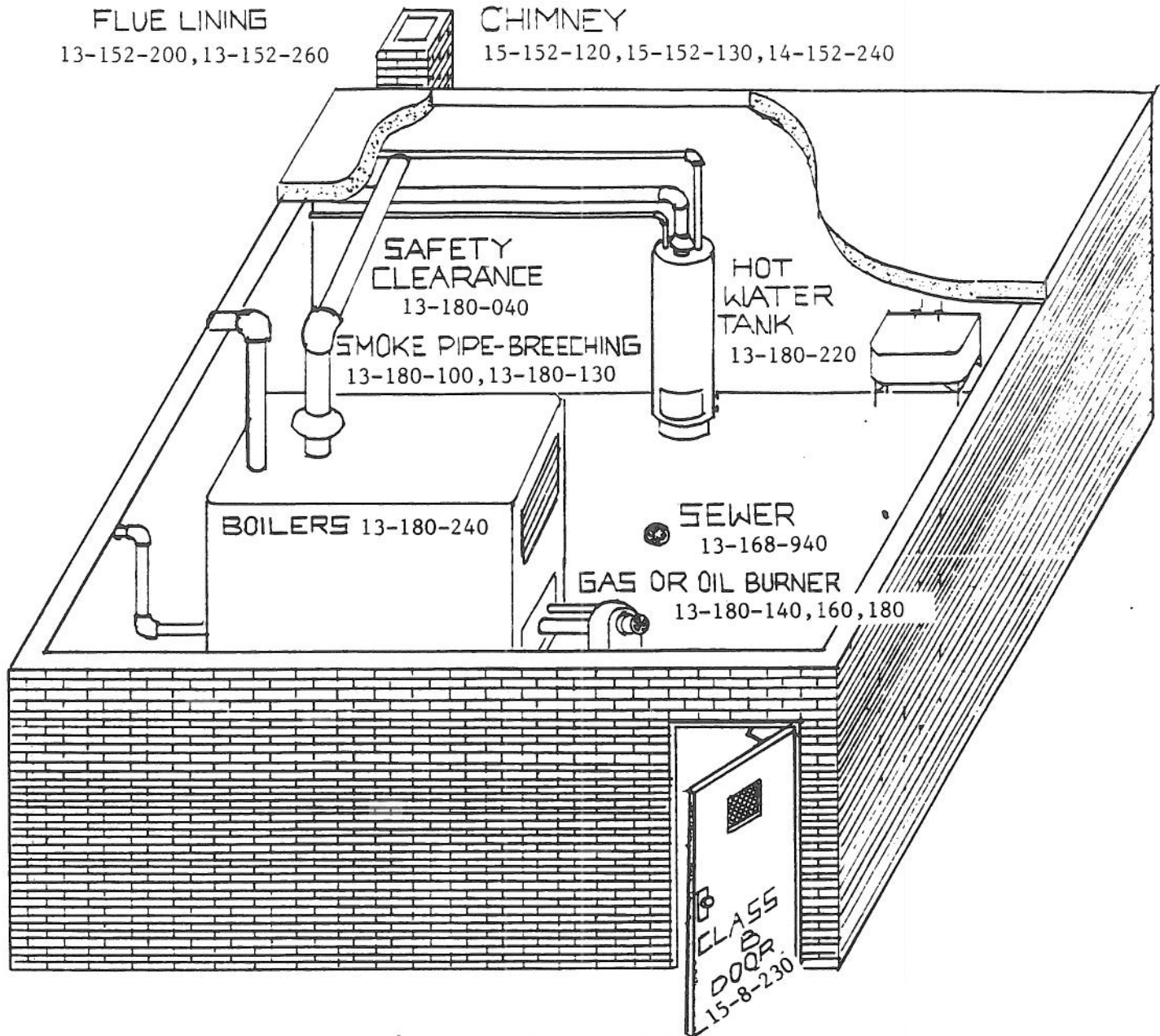
MAXIMUM OPENING SIZE  
12'X12' 120 SQUARE FEET

FOR EXCEPTIONS SEE 15-8-240

CAC 86

# TYPICAL BOILER ROOM ENCLOSURE

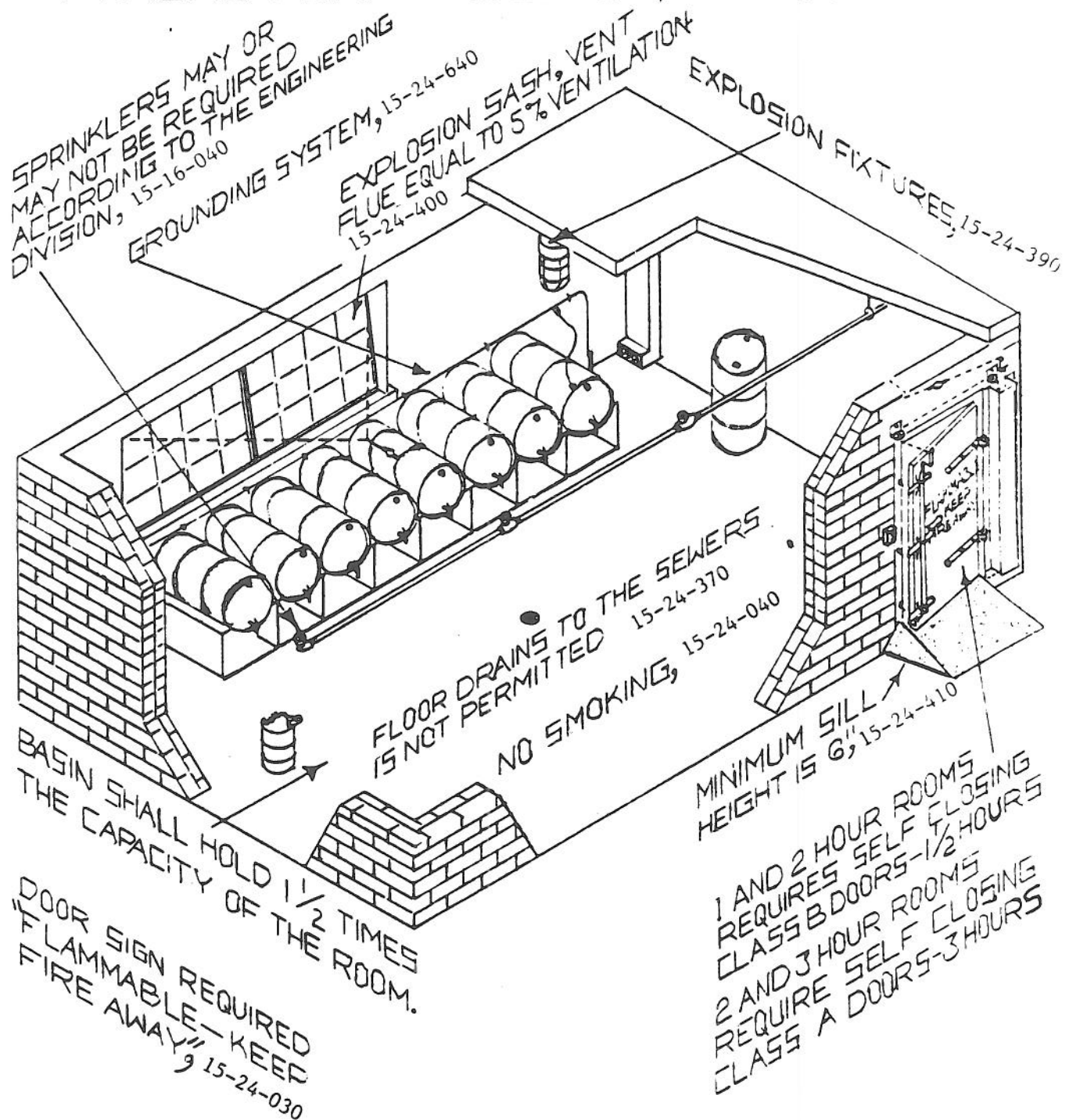
(7)



## REQUIRED BOILER ROOM ENCLOSURE

- (A) STEAM BOILER IN EXCESS OF 15 POUNDS PRESSURE  
2 HOUR ROOM
- (B) BUILDINGS WITH A CAPACITY OF MORE THAN 200 PERSONS  
2 HOUR ROOM
- (C) OTHER HEATING PLANT ENCLOSURES  
1 HOUR
- (D) FOR EXCEPTIONS SEE 15-8-200

# TYPICAL FLAMMABLE LIQUID ROOM (8.)



## CONSTRUCTION

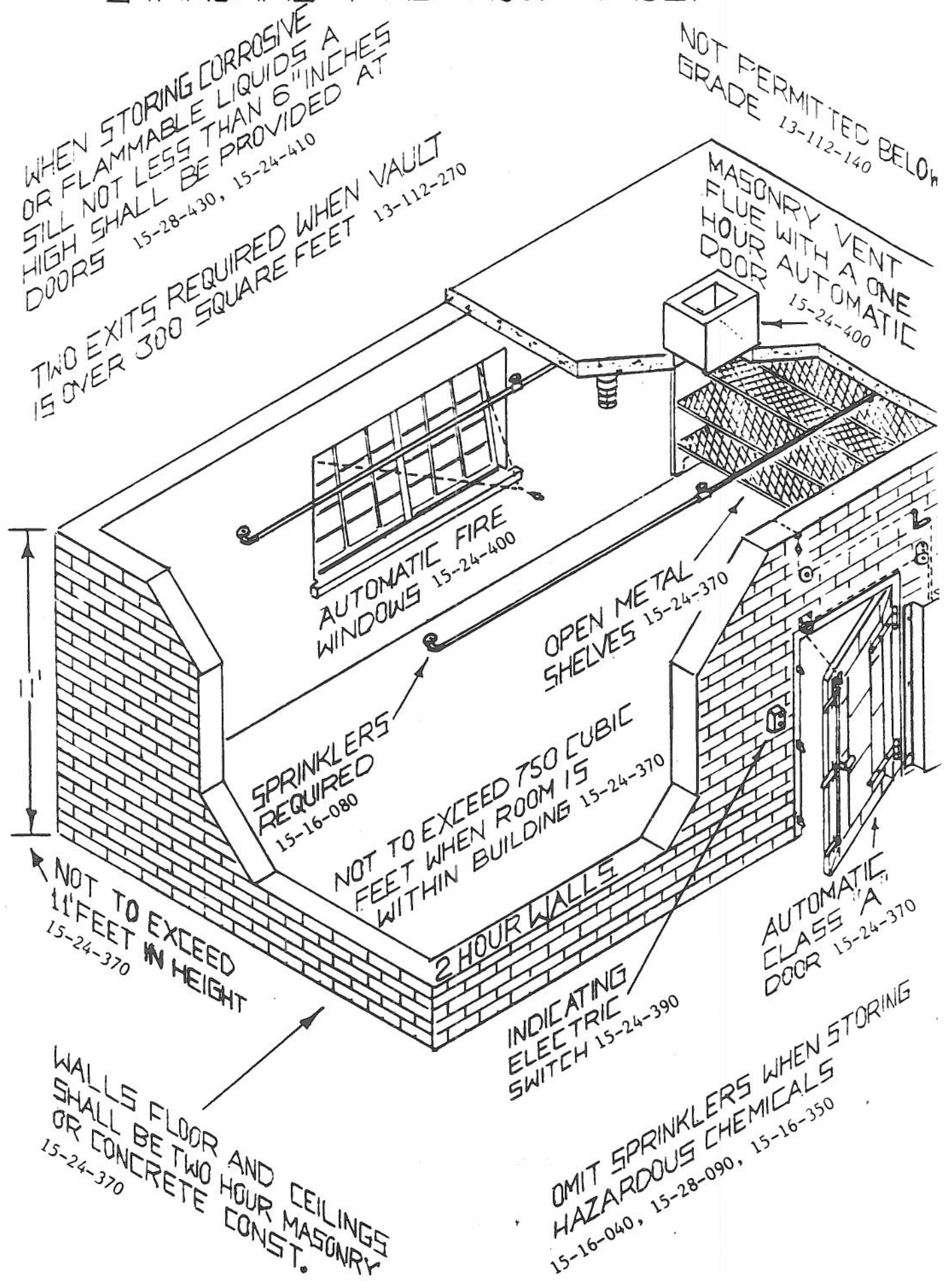
NOT EXCEEDING 200 GALLONS REQUIRES A 1 HOUR ROOM

201 TO 400 GALLONS REQUIRES A 2 HOUR ROOM

401 TO 600 GALLONS REQUIRES A 3 HOUR ROOM

EXCEEDING 600 GALLONS REQUIRES A 4 HOUR ROOM, 15-24-410

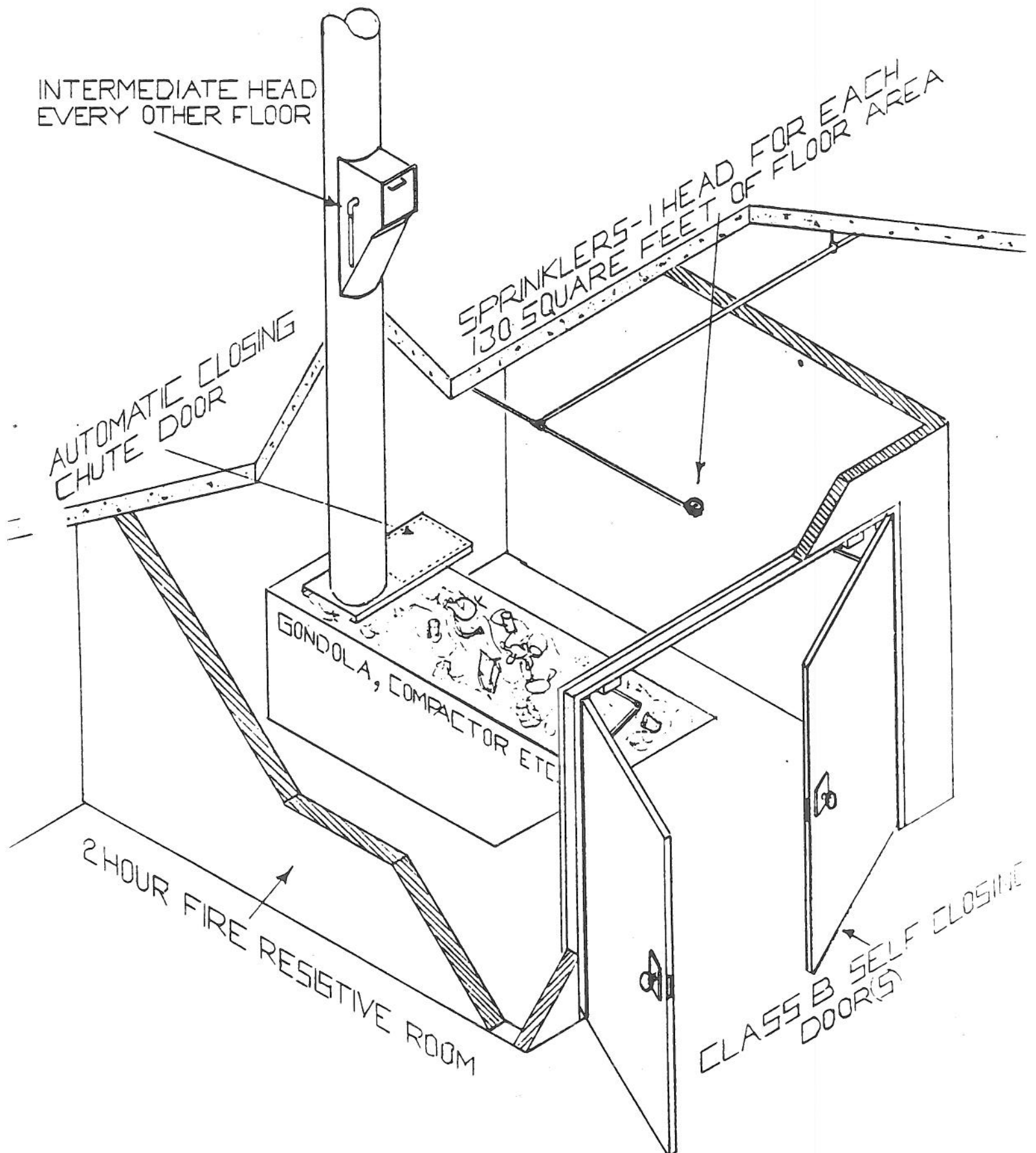
# STANDARD FIREPROOF VAULT





REFUSE CHUTE  
DISCHARGE ROOM

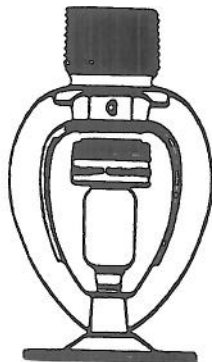
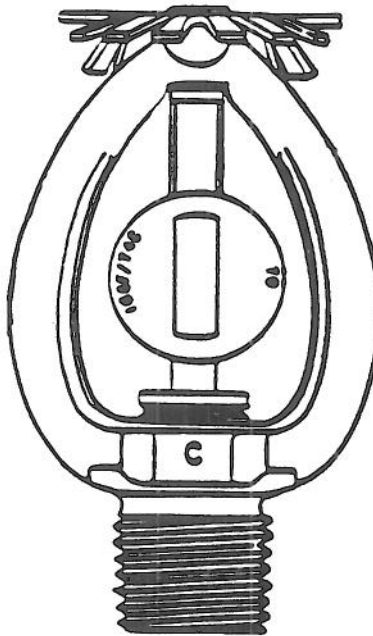
15-8-170



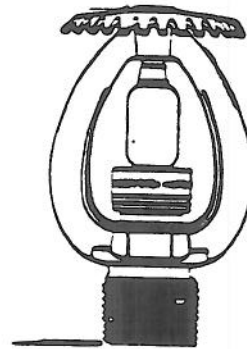


# FIRE PREVENTION SECTION

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PENDANT SPRINKLER



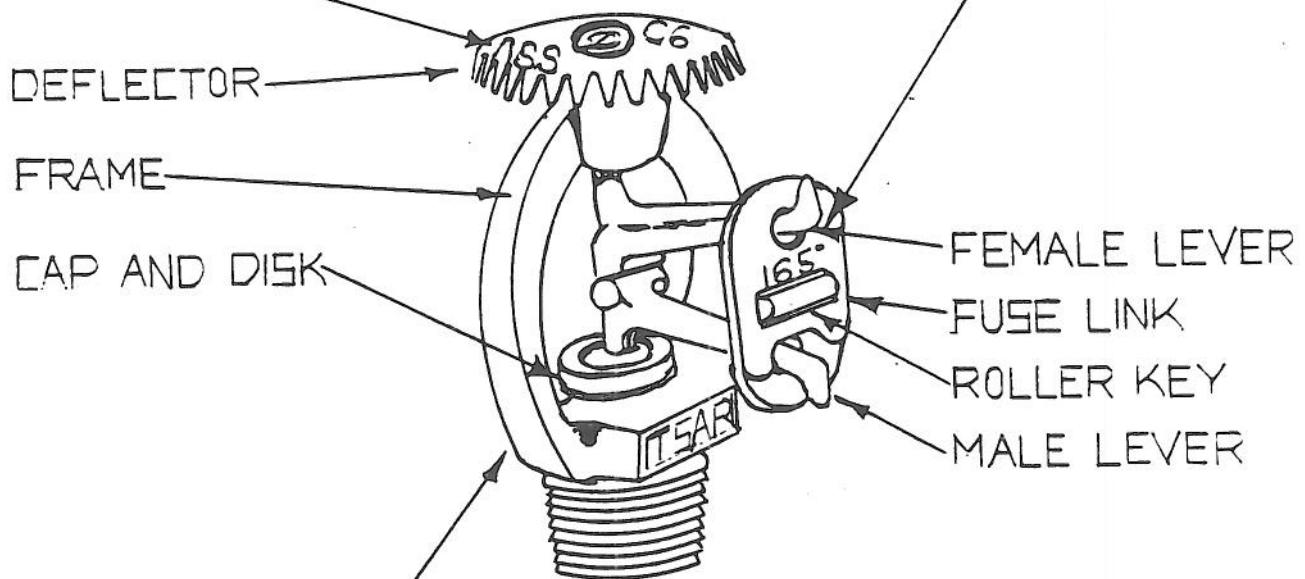
UPRIGHT SPRINKLER

# TYPICAL SPRINKLER HEAD (GOLDER LINK)

A38

TYPE OF HEAD STAMPED ON DEFLECTOR SUCH AS SSU-STANDARD SPRINKLER UPRIGHT.

TEMPERATURE STAMPED ON FUSE LINK



TEMPERATURE COLOR CODE ON FRAME

ORDINARY	135°-150°-160°-165°	UNCOLORED
INTERMEDIATE	175°-212°	WHITE
HIGH	250°-280°-286°	BLUE
EXTRA HIGH	325°-340°-350°-360°	RED
VERY EXTRA HIGH	400°-415°	GREEN
VERY EXTRA HIGH	450°	ORANGE
VERY EXTRA HIGH	500°	ORANGE

RECOMMENDED EMERGENCY HEAD STORAGE FOR SYSTEMS WITH NOT OVER:

300 SPRINKLER HEADS  
300 TO 1000 SPRINKLER HEADS  
OVER 1000 SPRINKLER HEADS

6 HEADS  
12 HEADS  
24 HEADS

SOURCE NFPA

Wood gravity tanks need closer attention. After a few years wood staves tend to shrink slightly. This condition causes the steel banding hoops to slip downward and not providing any binding support to keep the staves together. Banding hoops shall be a minimum of 3/4 inch steel round bar with malleable iron adjusting lugs. The roof of wood gravity tanks shall be constructed of galvanized metal or equivalent fire resistive material. Be sure a referral is sent to the Department of Inspectional Service (Structural Iron Division) if the tank or supports appear to be in poor condition. Don't be a hero, if it appears in poor condition, stay off of it. See A-26, A-27, A-28 and A-29.

15-4-900

How high is the stock piled in relation to the sprinkler heads?

15-16-350

A minimum clearance of 18 inches shall be maintained between the top of the stock and the sprinkler pipes. Check the shelving used for

15-16-520

the storage of stock. If the shelving exceeds a width of 48 inches, the sprinkler system will be required to be extended to protect this area.

15-28-610

This may appear to be a harsh section of the code, but visualize what would happen if a fire started below the shelving and traveled in a horizontal direction. This type of fire could cause considerable damage before triggering the sprinkler system at the ceiling line. This also holds true for office areas where ceilings have been lowered to provide a more modern look. In office areas an approved louver (egg crate) type ceiling can be installed instead of lowering the sprinkler heads below the present ceiling. This type of ceiling allows the sprinkler discharge to penetrate and protect the area below. Make sure that sprinkler heads are not painted or heavily encrusted with dirt in order to insure their sensitivity to heat. If the sprinkler extension requires more than four heads, plans and permits shall be required.

15-16-360

Are the sprinkler heads of correct temperature rating for the occupancy involved? Sprinkler heads are installed according to the expected ceiling temperature. No one expects you to climb all over the building checking the temperature rating of each sprinkler head. An easy way to determine temperature rating is by recognition of the color coding on the frame arms. See A-38.

Rating	Operating Temperature	Color	Maximum Ceiling Temp.
(1) Ordinary	135°-150°-160°-165°	Uncolored	100°
(2) Intermediate	175°-212°	White	150°
(3) High	150°-280°-286°	Blue	225°
(4) Extra High	325°-340°-350°-360°	Red	300°
(5) Very Extra High	400°-415°	Green	375°
(6) Very Extra High	450°	Orange	425°
(7) Very Extra High	500°	Orange	475°

15-16-170

Sprinkler and standpipe control valves and alarm equipment are usually located in the basement. This is the life line of the fire protection system and will require a very thorough inspection. A sprinkler or standpipe that is out of service can give a false sense of security to anyone working in the building. Either system may never be called upon to extinguish a fire, but should be ready and in operation at all times. Building management is required to give prior notice to the fire department in the event of any sprinkler or standpipe repairs.



15-16-040  
15-16-350  
15-28-040  
5-28-090  
-16-640

Automatic sprinklers are considered to be the best form of fire protection within a building, but under certain conditions and in certain areas they can be a hazard. Automatic sprinklers are not permitted in any room or building that is used for the storage of hazardous chemicals. Chemicals such as calcium carbide, calcium, lithium, potassium and sodium to name a few, are highly reactive to water and could be explosive when in contact with moisture. As an example: calcium carbide when wet generates acetylene gas which has an ignition temperature of 581° and an explosive range of 2.5 to 80 percent. All doors opening into any hazardous chemical room or building shall have signs that read "hazardous chemicals-- use no water". Not knowing, or not being

familiar with a condition of this nature, places employees and firefighters in a very hazardous situation. Watch for the blue D.O.T. shipping placard which designates water reactive chemicals. Be alert "know your chemicals".

Automatic sprinklers are also a hazard in electrical generating and transformer rooms. Water coming in contact with high voltage equipment can and have caused explosions in these rooms. There are numerous case histories of firefighters being injured when playing a stream on high voltage equipment. If you find sprinkler protection in these rooms or vaults, consult with your supervisors and the Engineering Division about removal of such protection. Only Class C fire extinguishers shall be located in these areas.

15-16-090  
15-16-710  
15-16-090  
15-16-940  
15-16-950

The modern industrial buildings are built on one and two floor levels because of productivity. These one and two floor plan buildings do not require standpipe systems. Standpipes are still worth talking about because there are still many old industrial buildings that have a standpipe system within them. Any firefighter who has had to carry hose and a nozzle up the stairs for any great height will greatly appreciate a standpipe system that is in good working order. A fifty foot length of 2 1/2 inch hose and harness weighs about 70 pounds. Do a good job of inspection in this area because tomorrow that harness and hose could be on your shoulder.

Industrial buildings exceeding 80 feet in height require an approved standpipe system. Hose and valve connections are required on each floor, except on the first floor. The 2 1/2 inch hose valve shall be located no less than 3 feet, nor more than 6 feet above the floor. A lugged cap shall be used to protect the hose threads. A 1 1/2 inch hose connection shall be provided with each 2 1/2 inch hose valve. Each 1 1/2 inch hose valve shall have attached no more than 100 feet of approved 1 1/2 inch hose with nozzle provided it is in the stairwell and 75 feet of hose with nozzle, if not. The hose rack shall release the hose without kinking. The rack shall swing freely and shall be operated by one person. A suitable cabinet or cover shall be provided to protect against injury, moisture or dust.

Standpipe systems shall be inspected at least once every six months. The fire pump shall be tested at least once per year. See A-55, A-56 and A-57.

- 15-16-370 Make sure all control valves are readily accessible and protected against mechanical injury. If there are any obstructions, material or rubbish upon, before, or around these valves, they shall be removed.
- 15-16-400 All gate valves are required to be secured in an open position.

Take a close look at the check valve that is installed on the city source to the fire protection system. There have been on occasion check valves that have been installed backwards. A small arrow is cast on the side of the check valve housing that will show the direction of the water flow. If no arrow is visible, then look for pivot bolts on the upper part of the housing. This will also provide information as to the direction of water flow. The four inch check valves installed in the siamese inlet are notorious for being installed in reverse.

- 15-16-500 Look for the pressure gauges. Gauges are required above and below the alarm valve. These gauges will show how much water pressure is being provided from the city main. The average water pressure in Chicago is thirty pounds, but may tend to fluctuate during periods of peak demand. On dry valve systems check the air pressure gauge to see if there is an adequate air supply to hold back the water pressure. Normally the air pressure should be on a differential of about 6 to 1 (water to air pressure). This would average out to 5 or 6 pounds air pressure or higher for 30 pounds of water pressure. See A-61, A-62 and A-63.

- 15-16-270 Does the fire protection system require a fire pump? If the source of water cannot adequately supply the required pressure and gallonage of the highest head in the system, then a fire pump shall be required. Problems of this nature should be referred to our sprinkler division for their follow-up.

If a fire pump is connected to the system, check it thoroughly. Fire pumps are required to be installed according to Standard 20 of the National Fire Codes (N.F.P.A.). Also required with the fire pump is a pressure maintenance pump (jockey pump) that will prevent frequent starting and stopping operations of the main pump. The minimum fire pump size for industrial applications is 500 gallons per minute. Fire pumps for sprinkler systems are required to be automatic in operation. Don't get alarmed if small amounts of water are leaking from around the pump shaft, this leaking water keeps the gland packing from drying out. Leakage should be no greater than one quart per hour. If leakage is excessive, it should be reported to maintenance personnel for proper service and also to our sprinkler division.

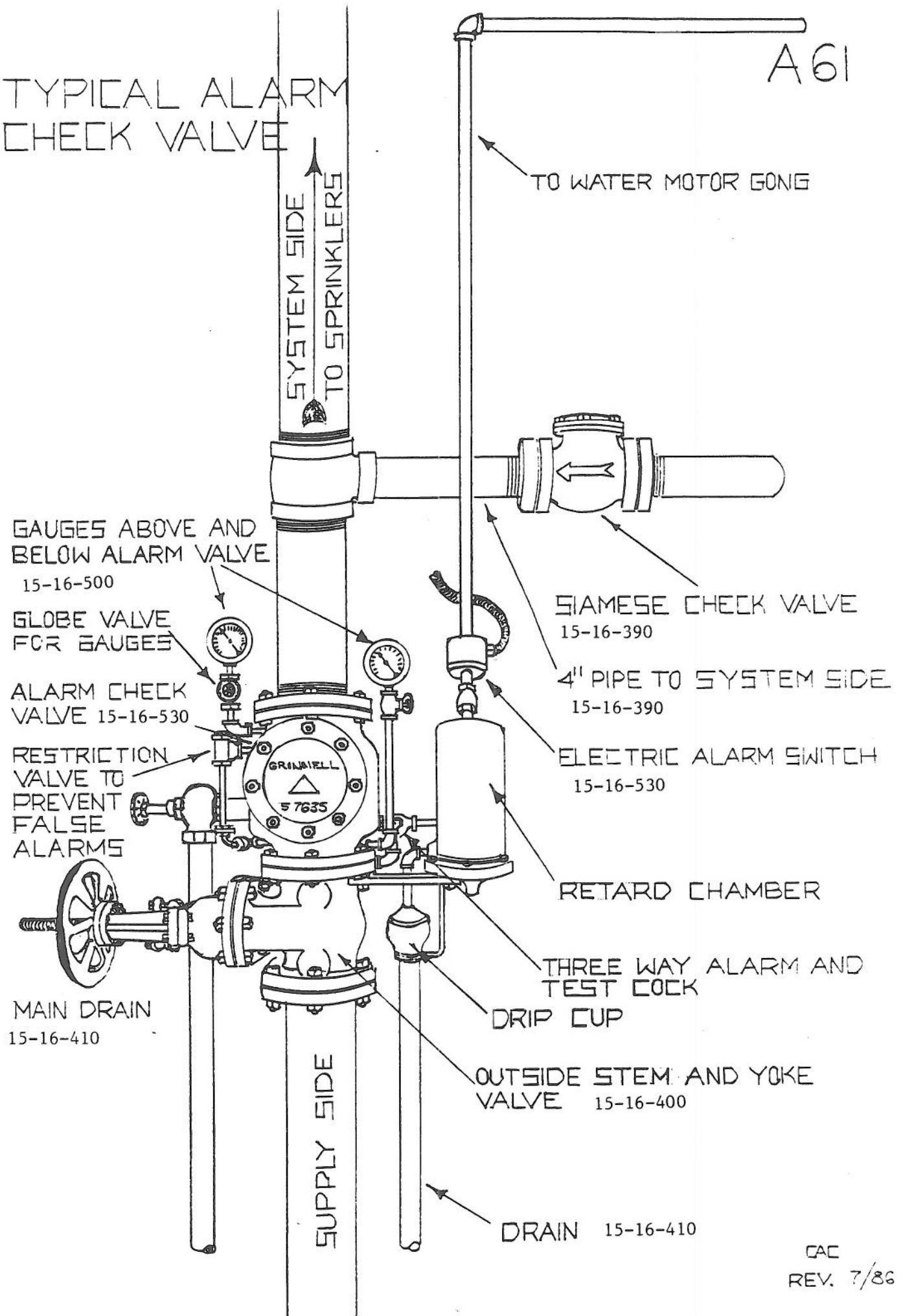
- 15-16-400 Study the sprinkler supply piping especially the valve system. All valves controlling the water supply are required to be of the outside stem and yoke (O.S.Y.) or indicating type. Make sure that the screw stem is all the way out on the O.S.Y. valves or the word "open" appears in the target window of the post indicator valves (P.I.V.). This will show whether or not water is flowing into the system. Metal identification tags are required to indicate the specific area controlled by each valve. If you see any of the valves chained in an open position, do nothing - it is permitted.

- 15-16-390 Trace the system to the fire department siamese hose connection. A check valve (clapper) is required inside the building wall behind the siamese fitting to prevent backflow of water to the outside. Make sure this valve opens in the direction of the water flow. A drain should be provided between the check valve and the siamese fitting. This drain is installed to prevent possible freeze-ups due to our severe winters.
- 15-16-530 Have you noticed any sprinkler alarms? Every sprinkler system is required to have an alarm that will indicate a small flow of water. Usually a flow of approximately twenty gallons per minute will activate the alarm system. Another part of the alarm system consists of a water motor gong located on the exterior of the building. The water motor gong is required to be located in the immediate area of the siamese hose connection. Usually the water motor gong is located directly above the siamese fitting. The water motor gong is required to be provided with a drain to prevent freeze-ups. Private water flow alarms or watch services, such as A.D.T., Wells Fargo, and others, do not come under the jurisdiction of the fire prevention code.
- 15-16-460 Unheated buildings are usually protected with a dry type sprinkler system (air under pressure). This type of system is not subject to freezing due to Chicago's severe winter conditions. When you are inspecting this type of system, give special attention to the room or enclosure that houses the dry valve. This room or enclosure should have adequate heat to prevent the temperature from falling below 40°F. The air compressor supplying the system shall be capable of restoring the entire system within thirty minutes. See A-62.
- 15-16-420 House lines used for fire protection shall not be connected to a dry type sprinkler system.

- 001360 SEC. 15-16-030, 15-16-040, 15-16-070, 15-16-190, 15-28-340, 15-16-080, 15-28-200, 13-196-180, 15-28-250, 13-32-010, 13-32-040, 15-12-350, 15-8-170 PROVIDE AN APPROVED AUTOMATIC SPRINKLER SYSTEM. SUBMIT THREE (3) SETS OF PLANS TO THE BUREAU OF FIRE PREVENTION AND OBTAIN APPROVAL BEFORE STARTING WORK.
- 001364 SEC. 15-16-070 PROVIDE AN APPROVED AUTOMATIC SPRINKLER SYSTEM IN SPRAY BOOTH(S).
- 001886 SEC. 15-4-900, 15-28-310, 15-28-610 LOWER ALL STOCK AND/OR MATERIAL SO AS TO PROVIDE A MINIMUM CLEARANCE OF EIGHTEEN (18) INCHES BETWEEN IT AND CEILING OR SPRINKLER SYSTEM.
- 001930 SEC. 15-16-220, 15-16-1120 DISCONTINUE BLOCKING ACCESS TO FIRE DEPARTMENT SIAMESE FITTING.
- 001984 SEC. 15-16-220 REPAIR OR REPLACE DAMAGED OR DEFECTIVE SIAMESE FITTING.
- 001986 SEC. 15-16-220 DISCONTINUE USING SPRINKLER PIPE OR VALVES FOR HANGING STOCK OR STORING STOCK UPON PIPING.
- 002000 SEC. 15-16-290, 15-16-210 REPAIR AND MAINTAIN GRAVITY TANK AND PLACE IN A SAFE AND SOUND CONDITION.
- 002006 SEC. 15-16-350, 15-16-190 EXTEND THE PRESENT SPRINKLER SYSTEM SO AS TO ENCOMPASS THE PRESENTLY UNPROTECTED AREA(S). SUBMIT THREE (3) SETS OF PLANS TO THE FIRE PREVENTION BUREAU AND OBTAIN APPROVAL BEFORE STARTING WORK.
- 002007 SEC. 15-16-350, 15-28-040, 15-28-090, 15-28-140, 15-16-040 INACTIVATE SPRINKLER SYSTEM IN ROOMS WHERE CONTENTS PROHIBIT THE USE OF WATER.
- 002008 SEC. 15-16-350, 15-16-040, 15-16-050, 15-16-060, 15-16-070, 15-16-190, 15-28-340, 15-16-030 REMOVE THE OBSTRUCTIONS THAT HAMPER THE OPERATION OF THE SPRINKLER SYSTEM OR EXTEND THE SYSTEM TO INCLUDE THE AREA(S) BELOW THE OBSTRUCTION(S). SUBMIT THREE SETS OF PLANS TO THE FIRE PREVENTION BUREAU AND OBTAIN APPROVAL BEFORE STARTING WORK.
- 002016 SEC. 15-16-390, 15-16-590, 15-16-940 REPLACE CAPS AND GASKETS WHERE SAME ARE MISSING AND OIL AND FREE UP THE SWIVELS OF THE FIRE DEPARTMENT SIAMESE CONNECTION.
- 002018 SEC. 15-16-390, 15-16-190, 15-16-590, 15-16-860, 15-16-1020, 15-16-1120 PROVIDE AN ADDITIONAL FIRE DEPARTMENT SIAMESE CONNECTION. SUBMIT THREE (3) SETS OF PLANS TO THE BUREAU OF FIRE PREVENTION AND OBTAIN APPROVAL BEFORE STARTING WORK.
- 002020 SEC. 15-16-390 CLEAN, OIL AND FREE UP FIRE DEPARTMENT SIAMESE CONNECTION.
- 002022 SEC. 15-16-390 PROVIDE A NAME PLATE AT THE FIRE DEPARTMENT CONNECTION TO THE SPRINKLER SYSTEM. PLATE IS TO BE LETTERED "SPRINKLERS" IN RAISED LETTERS NOT LESS THAN ONE (1) INCH HIGH.
- 002028 SEC. 15-16-400, 15-16-1050 SECURE ALL SUPPLY GATE VALVES IN AN OPEN POSITION.
- 002048 SEC. 15-16-520 REPLACE ALL SPRINKLER HEADS WHERE THEY ARE PAINTED OR COATED.
- 001076 SEC. 13-48-070, 13-48-080, 15-16-020, 13-32-040, 13-32-010, 15-16-190 LIMIT THE BASIC MAXIMUM AREA OF THE BUILDING TO THAT ESTABLISHED IN CHAPTER 13-48-010 OR INSTALL AN APPROVED AUTOMATIC SPRINKLER SYSTEM THROUGHOUT THE PREMISES. SUBMIT THREE (3) SETS OF PLANS FOR APPROVAL TO THE BUREAU OF FIRE PREVENTION BEFORE STARTING WORK.

# TYPICAL ALARM CHECK VALVE

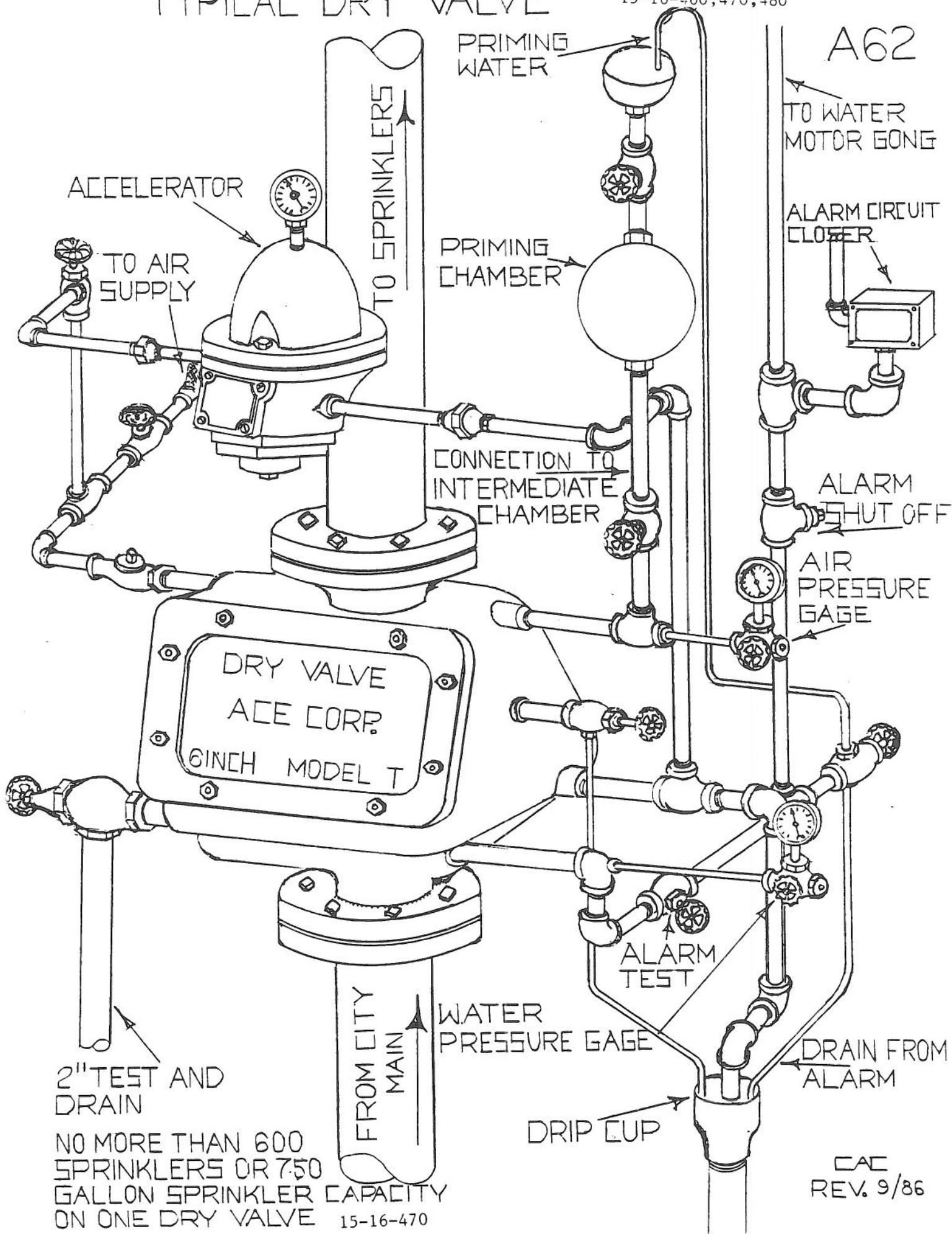
A61





# TYPICAL DRY VALVE

15-16-460, 470, 480



CAC  
REV. 9/86

# TYPICAL PRESSURE TANK

A63

