

تلخيص مبسط عن شبكة الإطفاء الآلي
تبعال (NFPA 13)

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**** درجات تصنيف أنظمة الرش الآلى CLASSIFICATION OF OCCUPANCIES :**

1- الرش الخفيف الكثافة (LIGHT HAZARD)

المستشفيات , المعاهد , المعامل , المتاحف , المكاتب , المساكن .

2- الرش العادى الكثافة المجموعة الأولى (ORDINARY HAZARD GROUP 1)

المخابز , المشاريع الإلكترونية , مصانع الزجاج , المغاسل , المطاعم , مواقف السيارات , معامل الألبان .

3- الرش العادى الكثافة المجموعة الثانية (ORDINARY HAZARD GROUP 2)

المشاريع الكيميائية , مصانع الجلود , مخازن الحبوب , المكتبات , الورش , مكاتب البريد , المطابع , المناجر ,

4- الرش العالى الكثافة المجموعة الأولى (EXTRA HAZARD GROUP 1)

المطابع التى تستخدم أحبار سريعة التطاير , مصانع الإسفنج الصناعى و المطاط , حظائر الطائرات

5- الرش العالى الكثافة المجموعة الثانية (EXTRA HAZARD GROUP 2)

مصانع المنتجات البلاستيكية , مخازن السوائل الطيارة , مخازن محاليل التنظيف و المطهرات

**A-1-4.7.1 Light Hazard Occupancies include occupancies having conditions
:similar to**

Churches

Clubs

Eaves and overhangs, if combustible construction with
no combustibles beneath

Educational

Hospitals

Institutional

Libraries, except large stack rooms

Museums

Nursing or convalescent homes

Office, including data processing

Residential

Restaurant seating areas

Theaters and Auditoriums excluding stages and
prosceniums

.Unused attics

**A-1-4.7.2.1 Ordinary Hazard Occupancies (Group 1) include occupancies having
:conditions similar to**

Automobile parking and showrooms

Bakeries

Beverage manufacturing
Canneries
Dairy products manufacturing and processing
Electronic plants
Glass and glass products manufacturing
Laundries
.Restaurant service areas

A-1-4.7.2.2 Ordinary Hazard Occupancies (Group 2) include occupancies having conditions similar to

Cereal mills
Chemical plants — ordinary
Confectionery products
Distilleries
Dry cleaners
Feed mills
Horse stables
Leather goods manufacturing
Libraries — large stack room areas
Machine shops
Metal working
Mercantile
Paper and pulp mills
Paper process plants
Piers and wharves
Post offices

Printing and publishing

Repair garages

Stages

Textile manufacturing

Tire manufacturing

Tobacco products manufacturing

Wood machining

.Wood product assembly

A-1-4.7.3.1 Extra Hazard Occupancies (Group 1) include occupancies having conditions similar to

(Aircraft hangars (except as governed by NFPA 409

Combustible hydraulic fluid use areas

Die casting

Metal extruding

Plywood and particle board manufacturing

[(Printing [using inks having flash points below 100°F (37.9°C

Rubber reclaiming, compounding, drying, milling, vulcanizing

Saw mills

Textile picking, opening, blending, ginning, carding, combining of cotton, synthetics, wool shoddy, or burlap

.Upholstering with plastic foams

Extra Hazard Occupancies (Group 2) include occupancies having conditions similar to

Asphalt saturating

Flammable liquids spraying

Flow coating

Manufactured home or modular building assemblies (where finished enclosure is present and has combustible interiors)

Open oil quenching

Plastics processing

Solvent cleaning

.Varnish and paint dipping

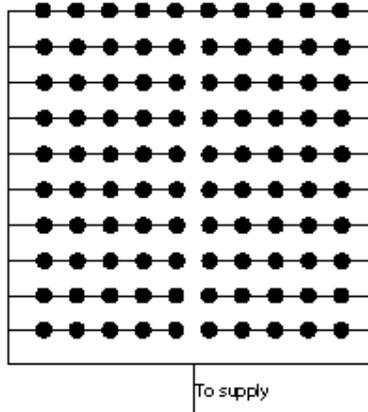
**** أنواع شبكات الإطفاء الآلى (1-4.3: SPRINKLER DEFINITION) :**

1- مبلل (WET PIPE SYSTEM) - جميع مواسير النظام تكون مملوءة بالماء تحت ضغط معين وبصفة مستمرة.

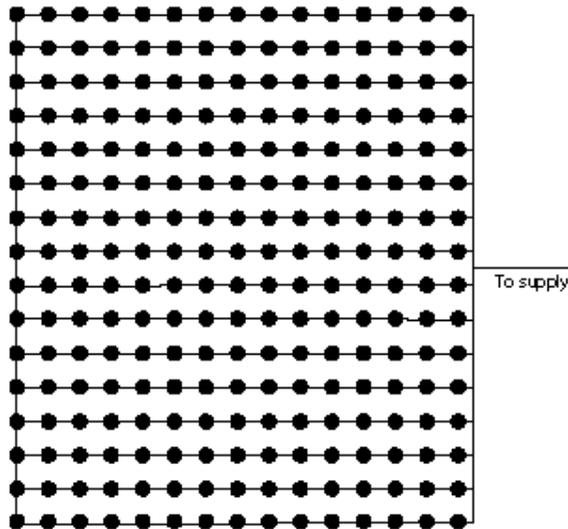
2- جاف (DRY PIPE SYSTEM) - مواسير الشبكة تكون بها هواء أو غاز النيتروجين تحت ضغط معين وبصفة مستمرة.

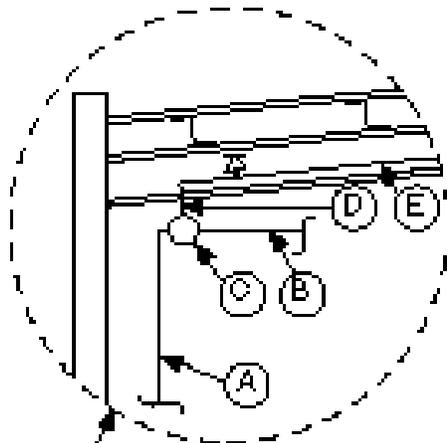
3- أنظمة أخرى مثل (PREACTION , DELUGE , ANTIFREEZE)

LOOPED SYSTEM

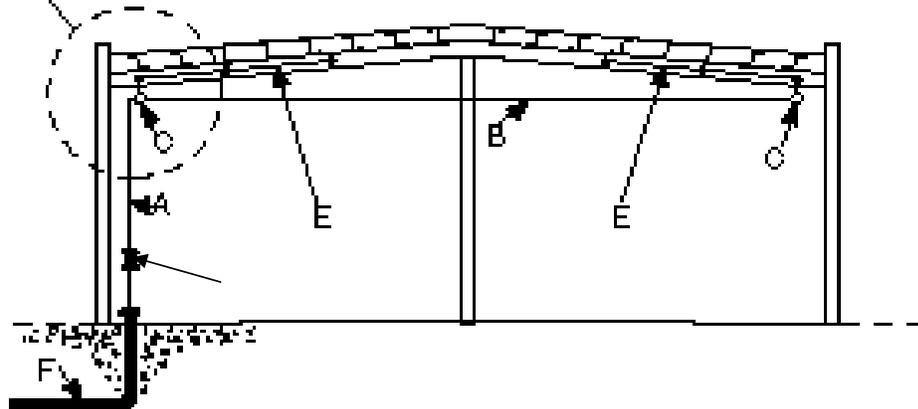


GRIDDED SYSTEM





- A. System riser
 - B. Feed main
 - C. Riser nipple
 - D. Riser ripple
 - E. Branch lines
 - F. Underground supply
- R. RISER & GATE VALVE**



- الريزر : -يؤمن عدم رجوع الماء المضغوط بالشبكة بأكملها الى مجموعة المضخات و
خزان الماء , كما يقوم بتنظيم تعويض اى فقدان لكمية من الماء بالشبكة.
- به محبس يمكننا تفريغ الماء من النظام بأكمله .
- من خلاله يتم تشغيل جرس الإنذار الذى يعمل بضغط الماء
وذلك في حالة عمل المضخة .
- به ساعة لبيان ضغط الماء قبل وبعد الريزر .

الرشاشات : ولها ثلاث أنواع رئيسية

- 1- رأسى (UPRIGHT) 2- معلق (PENDENT) 3- جانبى (SIDE WALL)

5-4* Application of Sprinkler Types.

Sprinklers shall be selected for use as indicated in this section. Sprinklers shall be positioned and spaced .

.Storage 4.1.2-5

For general storage, rack storage, rubber tire storage, roll paper storage, and baled cotton storage being protected with spray sprinklers with required densities of 0.34 gpm/ft² (13.9 mm/min) or less, standard response sprinklers with a nominal K-factor of 8.0 or larger shall be used. For required densities greater than 0.34 gpm/ft² (13.9 mm/min), standard response spray sprinklers with a K-factor of 11.2 or larger that are listed for storage applications shall be used

Upright Sprinkler.

Sprinklers designed to be installed in such a way that the water spray is directed upwards against the deflector

Only upright sprinklers shall be installed on dry pipe systems.

*Exception No. 1: *Listed dry sprinklers shall be permitted.*

Exception No. 2: Pendant sprinklers installed on return bends shall be permitted where both the sprinklers and the return bends are located in a heated area.

Exception No. 3: Horizontal sidewall sprinklers, installed so that water is not trapped, shall be permitted.

Only upright sprinklers shall be installed on reaction systems.

*Exception No. 1: *Listed dry sprinklers shall be permitted.*

Exception No. 2: Pendant sprinklers installed on return bends shall be permitted where both the sprinklers and the return bends are located in a heated area.

Exception No. 3: Horizontal sidewall sprinklers, installed so that water is not trapped, shall be permitted.

Only upright sprinklers shall be installed on combined dry pipe and reaction systems.

*Exception No. 1: *Listed dry sprinklers shall be permitted.*

Exception No. 2: Pendent sprinklers installed on return bends shall be permitted where both sprinklers and return bends are located in a heated area.

Exception No. 3: Horizontal sidewall sprinklers, installed so that water is not trapped, shall be permitted.

Pendent Sprinkler

Sprinklers designed to be installed in such a way that the water stream is directed downward against the deflector

Sidewall Sprinkler.

Sprinklers having special deflectors that are designed to discharge most of the water away from the nearby wall in a pattern resembling one quarter of a sphere, with a small portion of the discharge directed at the wall behind the sprinkler

Early Suppression Fast-Response (ESFR) Sprinkler.*

ESFR sprinklers shall be used only in wet pipe systems.

Exception: ESFR sprinklers shall be permitted for use in dry systems if specifically listed for such service.

ESFR sprinklers shall be installed only in buildings where roof or ceiling slope above the sprinklers does not exceed a pitch of one in six (a rise of two units in a run of 12 units, a roof slope of 16.7 percent).

Extended Coverage Sprinkler.

Extended coverage sprinklers shall be limited to a type of unobstructed construction consisting of flat, smooth ceilings with a slope not exceeding a pitch of one in six (a rise of two units in a run of 12 units, a roof slope of 16.7 percent).

Large-Drop Sprinkler.

Large drop sprinklers shall be permitted to be used in wet, dry, or preaction systems .

Nozzles.

Devices for use in applications requiring special water discharge patterns, directional spray, or other unusual discharge characteristics

Open Sprinklers.

Open sprinklers shall be permitted to be used in deluge systems to protect special hazards or exposures, or in other special locations

Sprinkler that do not have actuators or heat-responsive elements.

Quick-Response (QR) Sprinkler.

A type of spray sprinkler that meets the criteria of 1-4.5.1(a)1 and is listed as a quick-response sprinkler for its intended use

Quick-Response Early Suppression (QRES) Sprinkler.

* A type of quick-response sprinkler that meets the criteria of 1-4.5.1(a)1 and is listed for its capability to provide fire suppression of specific fire hazards.

Residential Sprinkler.

A type of fast-response sprinkler that meets the criteria of 1-4.5.1(a)1 that has been specifically investigated for its ability to enhance survivability in the room of fire origin and is listed for use in the protection of dwelling units

.Special Sprinkler. Sprinklers that have been tested and listed as prescribed in 4-4.9

Spray Sprinkler.

A type of sprinkler listed for its capability to provide fire control for a wide range of fire hazards.

4.5.3-1 Sprinklers defined according to orientation :

Concealed Sprinkler. Recessed sprinklers with cover plates .

Flush Sprinkler.

Sprinklers in which all or part of the body, including the shank thread, is mounted above the lower plan of the ceiling .

Corrosion-Resistant Sprinkler

Sprinklers fabricated with corrosion-resistant material or with special coatings or platings to be used in an atmosphere that would normally corrode sprinklers.

Dry Sprinkler.

* Sprinklers secured in an extension nipple that has a seal at the inlet end to prevent water from entering the nipple until the sprinkler operates. Dry sprinklers are intended to extend into an unheated area from a wet pipe system or (for dry-pendent sprinklers) .to be used on a dry pipe system in the pendent position

Intermediate Level Sprinkler/Rack Storage Sprinkler.

Sprinklers equipped with integral shields to protect their operating elements from the discharge of sprinklers installed at higher elevations .

Sprinkler Temperature Rating.

Ordinary Temperature Rated Sprinklers. Includes temperature ratings of 57°C to 77°C.

Intermediate Temperature Rated Sprinklers. Includes temperature ratings of 77°C to 121°C

High Temperature Rated Sprinklers. Includes temperature ratings of (121°C to 149°C).

**** بعض المواصفات المهمة :**
المساحة التي يغطيها الرشاش الواحد

في حالة الرش الخفيف	225 قدم = 15 x 15
	20 م = 4.5 x 4.5
في حالة الرش العادي	130 قدم = 11.4 x 11.4
	12 م = 3.5 x 3.5
في حالة الرش العالي	100 قدم = 10 x 10
	9 م = 3 x 3

Table 4-6.2 Protection Areas and Maximum Spacing (SSU/SSP)

Light Hazard Protection Area Spacing	Ordinary Hazard Protection Area Spacing	Extra Hazard Protection Area Spacing	High Pile Storage Protection Area Spacing
225	130	100	100

أقل ضغط لعمل الرشاش
0.5 بار = 7.3 رطل/البوصة المربعة (psi)

عند اختيار الرشاش
يؤخذ في الاعتبار درجة الحرارة التي يجب أن يعمل عندها.
المسافة بين الرشاش و السقف
= 25 إلى 30 سم

4-6.4.1.1 Under unobstructed construction, the distance between the sprinkler deflector and the ceiling shall be a minimum of 1 in. (25.4 mm) and a maximum of 12 in. (305 mm).

الاختبار الهيدروليكي
يتم ضغط النظام حتى (200psi-13.8 bar) ولمدة ساعتين , يجب ألا ينخفض الضغط خلال هذه المدة .

10-2.2 Hydrostatic Tests.

10-2.2.1 All interior piping and attached appurtenances subjected to system working pressure shall be hydrostatically tested at 200 psi (13.8 bars) and shall maintain that pressure without loss for 2 hours. Loss shall be determined by a drop in gauge pressure or visual leakage.

3-2.3 Sprinkler Discharge Characteristics.

Table 3-2.3.1 Sprinkler Discharge Characteristics Identification

Nominal K-factor gpm/(psi) ^{1/2}	K-factor Range gpm/(psi) ^{1/2}	Thread Type
1.4	1.5-1.3	1/2 in. NPT
1.9	2.0-1.8	1/2 in. NPT
2.8	2.9-2.6	1/2 in. NPT
4.2	4.4-4.0	1/2 in. NPT
5.6	5.8-5.3	1/2 in. NPT
8.0	8.2-7.4	3/4 in. NPT or 1/2 in. NPT
11.2	11.5-11.0	3/4 in. NPT or 1/2 in. NPT

3-2.5.2 The liquid in bulb-type sprinklers shall be color coded in accordance with Table 3-2.5.1.

Maximum Ceiling Temperature	Temperature Rating	Temperature Classification	Glass Bulb Colors
38	77-57	Ordinary	Uncolored or black
66	107-79	Intermediate	White
107	149-121	High	Blue
149	191-163	Extra high	Red
191	246-204	Very extra high	Green
246	302-260	Ultra high	Orange
329	343	Ultra high	Orange

3-2.9 Stock of Spare Sprinklers.

كمية الرشاشات الاحتياطية التي يجب تخزينها لكل نظام

كمية الرشاشات الواجب تخزينها بالموقع	عدد الرشاشات بالنظام
6	300>
12	1000>
24	1000<

2.8.3-2 The stock of spare sprinklers shall include all types and ratings installed and shall be as follows:

- a) For systems having less than 300 sprinklers, not fewer than 6 sprinklers.
- b) For systems with 300 to 1000 sprinklers, not fewer than 12 sprinklers.
- c) For systems with over 1000 sprinklers, not fewer than 24 sprinklers.

Table 3-3.5 Specially Listed Pipe or Tube Materials and Dimensions

Materials and Dimensions	Standard
Nonmetallic Piping Specification for Special Listed Chlorinated Polyvinyl Chloride (CPVC) Pipe	ASTM F 442
Specification for Special Listed Polybutylene (PB) Pipe	ASTM D 3309

3-5.4* Couplings and Unions.

Screwed unions shall not be used on pipe larger than 2 in. (51 mm). Couplings and unions of other than screwed-type shall be of types listed specifically for use in sprinkler systems.

3-6 Joining of Pipe and Fittings.

3-6.1.2*

Steel pipe with wall thicknesses less than Schedule 30 [in sizes 8 in. (203 mm) and larger] or Schedule 40 [in sizes less than 8 in. (203 mm)] shall not be joined by threaded fittings.

Exception: A threaded assembly investigated for suitability in automatic sprinkler installations and listed for this service shall be permitted.

3-6.2* Welded Pipe and Fittings.

Sprinkler piping shall be shop welded.

Exception No. 1: Welding of tabs for longitudinal earthquake bracing to in-place piping shall be permitted where the welding process is performed in accordance with NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hot Work.

Exception No. 2: Where the design specifications call for all or part of the piping to be welded in place, welding of sprinkler piping in place shall be permitted where the welding process is performed in accordance with NFPA 51B and the mechanical fittings required by 5-13.17 and 5-13.22 are provided.

5-13.17 Provision for Flushing Systems. (see also 4-13.15)

يجب تزويد نهاية الخطوط الرئيسية بطبقة مقاس 1/4" أو اكبر

4-13.15 Provision for Flushing Systems.

All sprinkler systems shall be arranged for flushing. Readily removable fittings shall be provided at the end of all cross mains. All cross mains shall terminate in 1 1/4-in. (33-mm) or larger pipe. All branch lines on girded systems shall be arranged to facilitate flushing.

5-13.22* *System Subdivision.*

Where individual floor/zone control valves are not provided, a flanged joint or mechanical coupling shall be used at the riser at each floor for connections to piping serving floor areas in excess of 5000 ft² (465 m²).

3-6.2.5

When welding is performed, the following procedures shall be completed.

- (1) *Holes in piping for outlets shall be cut to the full inside diameter of fittings prior to welding in place of the fittings.
- (2) Discs shall be retrieved.
- (3) Openings cut into piping shall be smooth bore, and all internal slag and welding residue shall be removed.
- (4) Fittings shall not penetrate the internal diameter of the piping.
- (5) Steel plates shall not be welded to the ends of piping or fittings.
- (6) Fittings shall not be modified.
- (7) Nuts, clips, eye rods, angle brackets, or other fasteners shall not be welded to pipe or fittings.

Exception: Only tabs welded to pipe for longitudinal earthquake braces shall be permitted. (See 6-4.5.8.)

4-1.2 Relief Valves.

A girded wet pipe system shall be provided with a relief valve not less than 1/4 in. (6.4 mm) in size set to operate at pressures not greater than 175 psi (12.1 bar).

العلاقة بين قطر الماسورة وكمية الماء التي يمكن أن تتدفق منه لكي تعطي سرعة سريان الماء بالماسورة = 3 متر/ ثانية

Table 10-2.1(2) Flow Required to Produce a Velocity of 10 ft/sec (3 m/sec) in Pipes

كمية الماء بالجالون أمريكي/د	قطر الماسورة بالبوصة
390	4
880	6
1560	8

4-6.1.3 Water Temperature.

4-6.1.3.1 Maximum.

In no case shall maximum water temperature flowing through the sprinkler portion of the system exceed 120°F (49°C). Protective control devices listed for this purpose shall be installed to shut down heating or cooling systems when the temperature of water flowing through the sprinkler portion of the system exceeds 120°F (49°C). When the water temperature exceeds 100°F (37.8°C), intermediate or higher temperature rated sprinklers shall be used.

4-6.1.3.2 Minimum.

Precautions shall be taken to ensure that temperatures below 40°F (4°C) are not permitted.

4-7 Outside Sprinklers for Protection Against Exposure Fires.

4-7.2.1*

Sprinklers installed for protection against exposure fires shall be supplied from a standard water supply as outlined in Chapter 9.

Exception: Where approved, other supplies, such as manual valves or pumps or fire department connections, shall be acceptable.

4-7.2.2

Where fire department connections are used for water supply, they shall be so located that they will not be affected by the exposing fire.

أقصى مساحة متكاملة يمكن لريزر واحد أن يغطيها

الرش الخفيف والعادي = 4831 م²
" العالي = 2323 م²

5-2 System Protection Area Limitations .

The maximum floor area on any one floor to be protected by sprinklers supplied by any one sprinkler system riser or combined system riser shall be as follows:

Light Hazard	52000 sq in - 4831 m ²
Ordinary Hazard	52000 sq in - 4831 m ²
Extra Hazard	
Pipe Schedule	25000 sq in - 2323 m ²
Hydraulically Calculated	40000 sq in - 3716 m ²
Storage — High-piled storage (as defined in 1-4.2) and storage covered by other NFPA standards	40000 sq in - 3716 m ²

Exception No. 1: The floor area occupied by mezzanines shall not be included in the above area.

Exception No. 2: Where single systems protect extra hazard, high-piled storage, or storage covered by other NFPA standards, and ordinary or light hazard areas, the extra hazard or storage area coverage shall not exceed the floor area specified for that hazard and the total area coverage shall not exceed 52,000 sq ft (4831 m²)

5-3.1.4 Temperature Ratings.

5-3.1.4.1*

Ordinary-temperature-rated sprinklers shall be used throughout buildings.

Exception No. 1: Where maximum ceiling temperatures exceed 100°F (38°C), sprinklers with temperature ratings in accordance with the maximum ceiling temperatures of Table 3-2.5.1 shall be used.

Exception No. 2: Intermediate- and high-temperature sprinklers shall be permitted to be used throughout ordinary and extra hazard occupancies.

Exception No. 3: Sprinklers of intermediate- and high-temperature classifications shall be installed in specific locations as required by 5-3.1.4.2

Table 5-3.1.4.2(a) Temperature Ratings of Sprinklers Based on Distance from Heat Sources

<i>Type of Heat Condition</i>	<i>Ordinary Degree Rating</i>	<i>Intermediate Degree Rating</i>
<i>(a) Heating ducts</i>		
<i>1. Above</i>	<i>More than 2 ft 6 in.</i>	<i>2 ft 6 in. or less</i>
<i>2. Side and below</i>	<i>More than 1 ft 0 in.</i>	<i>1 ft 0 in. or less</i>
<i>3. Diffuser</i>	<i>Any distance except as shown under Intermediate Degree Rating column</i>	<i>Downward discharge: Cylinder with 1 ft 0 in. radius from edge extending 1 ft 0 in. below and 2 ft 6 in. above Horizontal discharge: Semi-cylinder with 2 ft 6 in. radius in direction of flow extending 1 ft 0 in. below and 2 ft 6 in. above</i>
<i>(b) Unit heater</i>		
<i>1. Horizontal discharge</i>		<i>Discharge side: 7 ft 0 in. to 20 ft 0 in. radius pie-shaped cylinder [see Figure 5-3.1.4.2] extending 7 ft 0 in. above and 2 ft 0 in. below heater; also 7 ft 0 in. radius cylinder more than 7 ft 0 in. above unit heater</i>
<i>2. Vertical downward discharge (For sprinklers below unit heater, see Figure 5-3.1.4.2)</i>		<i>7 ft 0 in. radius cylinder extending upward from an elevation 7 ft 0 in. above unit heater</i>
<i>(c) Steam mains (uncovered)</i>		
<i>1. Above</i>	<i>More than 2 ft 6 in.</i>	<i>2ft 6 in. or less</i>
<i>2. Side and below</i>	<i>More than 1 ft 0 in.</i>	<i>1ft 0 in. or less</i>
<i>3. Blowoff valve</i>	<i>More than 7 ft 0 in.</i>	

5-4.1.2 Storage

For general storage, rack storage, rubber tire storage, roll paper storage, and baled cotton storage being protected with spray sprinklers with required densities of 0.34 gpm/ft² (13.9 mm/min) or less, standard response sprinklers with a nominal K-factor of 8.0 or larger shall be used. For required densities greater than 0.34 gpm/ft² (13.9 mm/min), standard response spray sprinklers with a K-factor of 11.2 or larger that are listed for storage applications shall be used.

Exception No. 1: For densities of 0.20 gpm/ft² (8.2 mm/min) or less, standard response sprinklers with a K-factor of 5.6 shall be permitted.

Exception No. 2: For modifications to existing systems, sprinklers with K-factors of 8.0 or less shall be permitted.

Exception No. 3: The use of quick-response spray sprinklers shall be permitted when listed for such use.

5-4.2 Sidewall Spray Sprinklers.

Sidewall sprinklers shall be installed only in light hazard occupancies with smooth, flat ceilings

Exception No. 1: Sidewall sprinklers shall be permitted to be used in ordinary hazard occupancies with smooth, flat ceilings where specifically listed for such use

Exception No. 2: Sidewall sprinklers shall be permitted to be used to protect areas below overhead doors

5-4.4 Open Sprinklers.

Open sprinklers shall be permitted to be used in deluge systems to protect special hazards or exposures, or in other special locations. Open sprinklers shall be installed in accordance with all applicable requirements of this standard for their automatic counterpart

5-4.6 Early Suppression Fast-Response (ESFR) Sprinklers.

5-4.6.1

ESFR sprinklers shall be used only in wet pipe systems.

Exception: ESFR sprinklers shall be permitted for use in dry systems if specifically listed for such service.

5-4.6.2

ESFR sprinklers shall be installed only in buildings where roof or ceiling slope above the sprinklers does not exceed a pitch of one in six (a rise of two units in a run of 12 units, a roof slope of 16.7 percent).

Extended Coverage Sprinkler.

A type of spray sprinkler that complies with the extended protection areas defined in Chapter 4

5-4.7 Large Drop Sprinklers.

A type of sprinkler that is capable of producing characteristic large water droplets and that is listed for its capability to provide fire control of specific high challenge fire hazards

Quick-Response (QR) Sprinkler.

A type of spray sprinkler that meets the criteria of 1-4.5.1(a)1 and is listed as a quick-response sprinkler for its intended use

Quick-Response Early Suppression (QRES) Sprinkler.

* A type of quick-response sprinkler that meets the criteria of 1-4.5.1(a)1 and is listed for its capability to provide fire suppression of specific fire hazards

Quick-Response Extended Coverage Sprinkler.

A type of quick-response sprinkler that meets the criteria of 1-4.5.1(a)1 and complies with the extended protection areas defined in Chapter 4

Residential Sprinkler.

A type of fast-response sprinkler that meets the criteria of 1-4.5.1(a)1 that has been specifically investigated for its ability to enhance survivability in the room of fire origin and is listed for use in the protection of dwelling units

Special Sprinkler. Sprinklers that have been tested and listed as prescribed in 4-4.9

Spray Sprinkler.

A type of sprinkler listed for its capability to provide fire control for a wide range of fire hazards

Sprinklers defined according to orientation 4.5.3-1

Concealed Sprinkler. Recessed sprinklers with cover plates

Flush Sprinkler.

Sprinklers in which all or part of the body, including the shank thread, is mounted above the lower plane of the ceiling

Pendent Sprinkler

Sprinklers designed to be installed in such a way that the water stream is directed downward against the deflector

Recessed Sprinkler.

Sprinklers in which all or part of the body, other than the shank thread, is mounted within a recessed housing

Sidewall Sprinkler.

Sprinklers having special deflectors that are designed to discharge most of the water away from the nearby wall in a pattern resembling one quarter of a sphere, with a small portion of the discharge directed at the wall behind the sprinkler

Upright Sprinkler.

Sprinklers designed to be installed in such a way that the water spray is directed upwards against the deflector

Sprinklers defined according to special application or environment 4.5.4-1

Corrosion-Resistant Sprinkler

. Sprinklers fabricated with corrosion-resistant material or with special coatings or .platings to be used in an atmosphere that would normally corrode sprinklers

Dry Sprinkler.

* Sprinklers secured in an extension nipple that has a seal at the inlet end to prevent water from entering the nipple until the sprinkler operates. Dry sprinklers are intended to extend into an unheated area from a wet pipe system or (for dry-pendent sprinklers) .to be used on a dry pipe system in the pendent position

Intermediate Level Sprinkler/Rack Storage Sprinkler.

Sprinklers equipped with integral shields to protect their operating elements from the .discharge of sprinklers installed at higher elevations

Ornamental/Decorative Sprinkler.

Sprinklers that have been painted or plated by the manufacturer.

5-6.3.3 Minimum Distance from Walls.

Sprinklers shall be located a minimum of 4 in. (102 mm) from a wall.

5-6.3.4 Minimum Distance Between Sprinklers.

Sprinklers shall be spaced not less than 6 ft (1.8 m) on center.

5-6.4.1 Distance Below Ceilings.

Under unobstructed construction, the distance between the sprinkler deflector and the ceiling shall be a minimum of 1 in. (25.4 mm) and a maximum of 12 in. (305 mm).

Figure 5-6.4.1.3(a) Sprinklers under pitched roofs with sprinkler directly under peak; branch lines run up the slope.

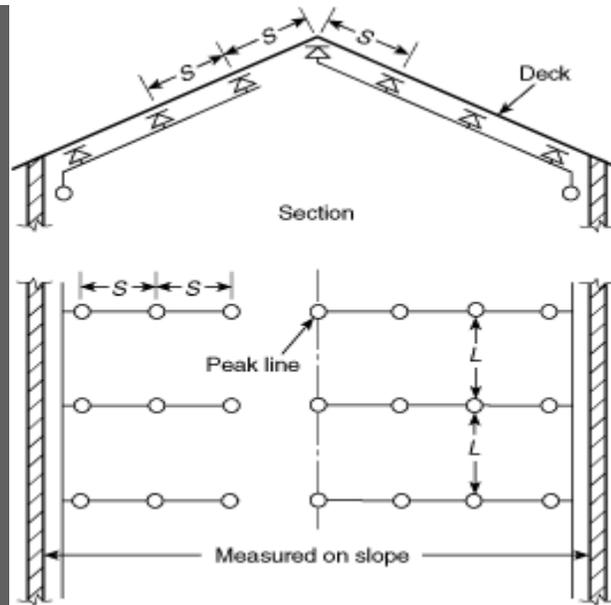
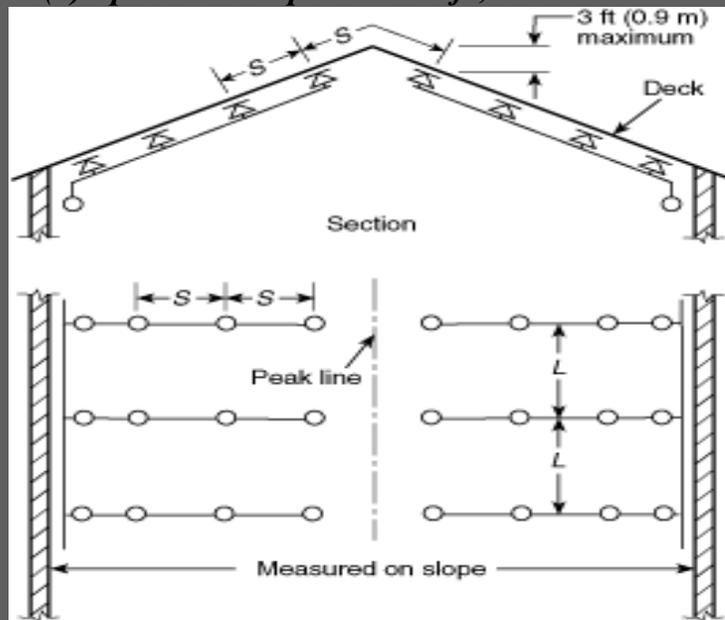


Figure 5-6.4.1.3(b) Sprinklers at pitched roofs; branch lines run up the slope.

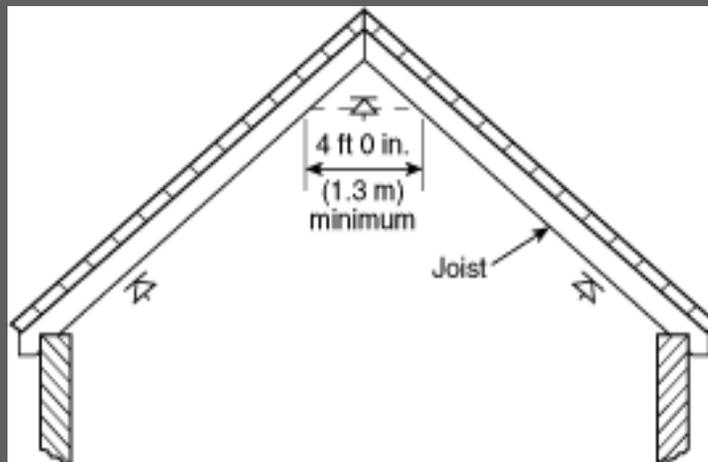


المسافة الرأسية بين الرشاش الأخير و أعلى نقطة على السقف

لا تزيد عن 90 سم

Sprinklers under or near the peak of a roof or ceiling shall have deflectors located not more than 3 ft (0.9 m) vertically down from the peak. [See Figures 5-6.4.1.3(a) and

Figure 5-6.4.1.3(c) Horizontal clearance for sprinklers at peak of pitched roof



5-6.6* Clearance to Storage (Standard Pendent and Upright Spray Sprinklers).

The clearance between the deflector and the top of storage shall be 18 in. (457 mm) or greater.

Exception No. 1: Where other standards specify greater minimums, they shall be followed.

Exception No. 2: A minimum clearance of 36 in. (0.91 m) shall be permitted for special sprinklers.

Exception No. 3: A minimum clearance of less than 18 in. (457 mm) between the top of storage and ceiling sprinkler deflectors shall be permitted where proven by successful large-scale fire tests for the particular hazard.

Exception No. 4:* The clearance from the top of storage to sprinkler deflectors shall be not less than 3 ft (0.9 m) where rubber tires are stored.

5-6.5 Obstructions to Sprinkler Discharge (Standard Pendent and Upright Spray Sprinklers).

5-8.3 Sprinkler Spacing (Extended Coverage Upright and Pendent Spray Sprinklers).

5-8.3.1 Maximum Distance Between Sprinklers.

The maximum distance permitted between sprinklers shall be based on the centerline distance between sprinklers on the branch line or on adjacent branch lines. The maximum distance shall be measured along the slope of the ceiling. The maximum distance permitted between sprinklers shall comply with Table 5-8.2.1

5-8.3.2 Maximum Distance from Walls.

the maximum horizontal distance between a sprinkler and any point of floor area protected by that sprinkler shall not exceed 0.75 times the allowable distance permitted between sprinklers.

5-8.3.3 Minimum Distance from Walls.

Sprinklers shall be located a minimum of 4 in. (102 mm) from a wall.

5-13.10 Library

طريقة توزيع الرشاشات بالمكتبات او بالمخازن ذات الأرفف

Sprinklers shall be installed in every aisle and at every tier of stacks with distance between sprinklers along aisles not to exceed 12 ft (3.7 m). [See Figure 5-13.10(a).]

Figure 5-13.10(a) Sprinklers in multitier library bookstacks with complete vertical dividers.

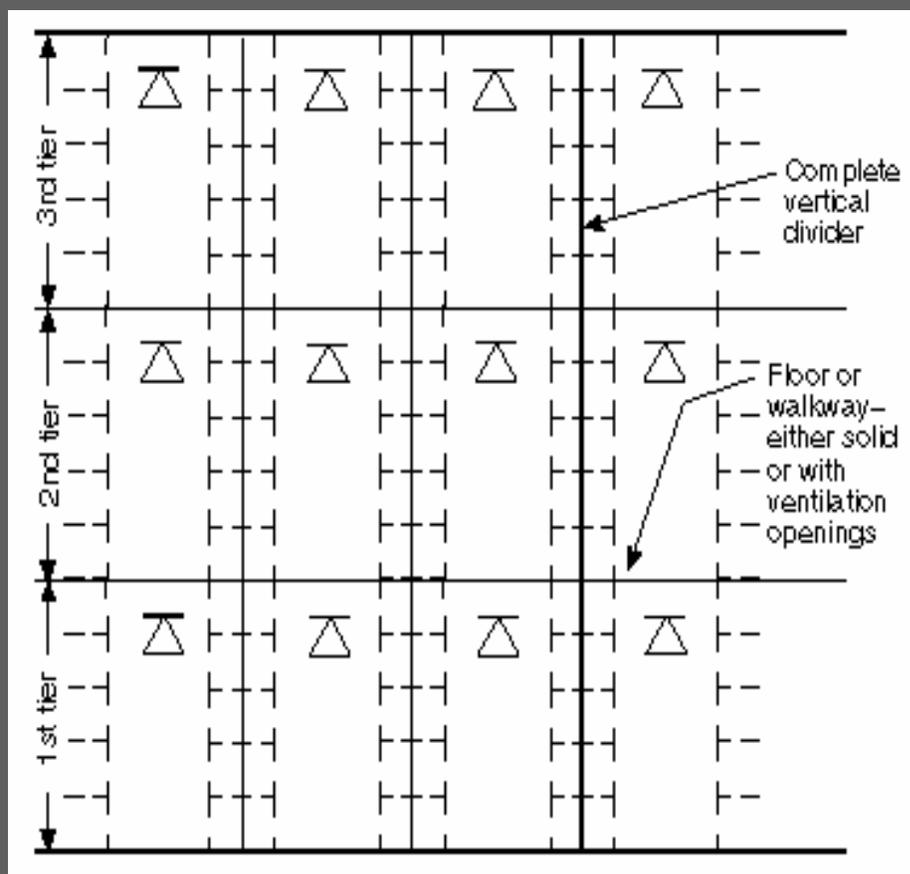
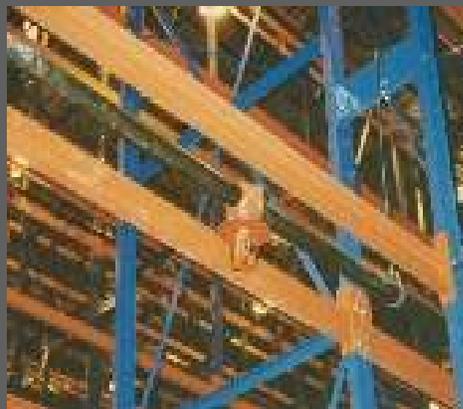
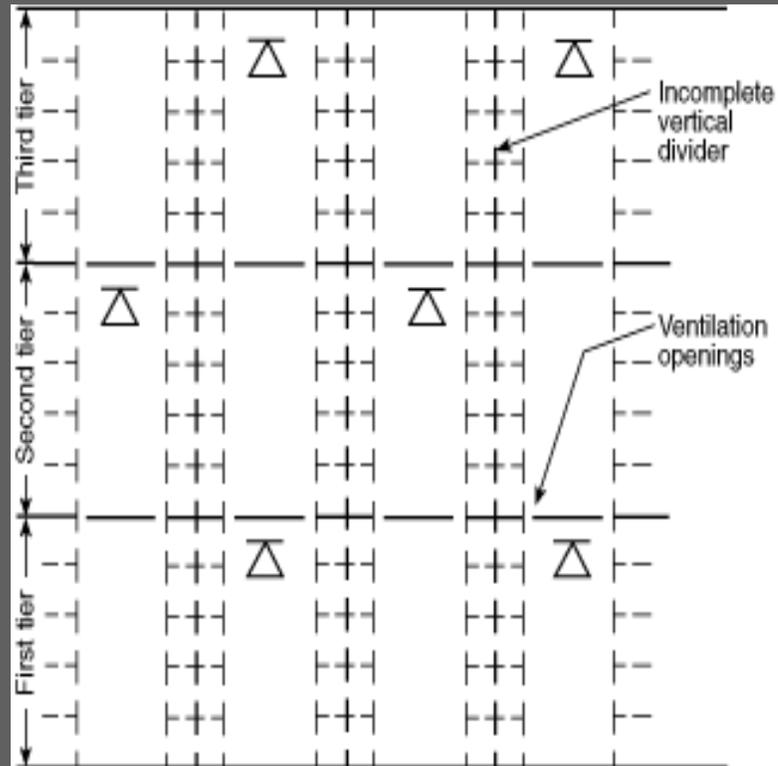


Figure 5-13.10(b) Sprinklers in multitier library bookstacks with incomplete vertical dividers.



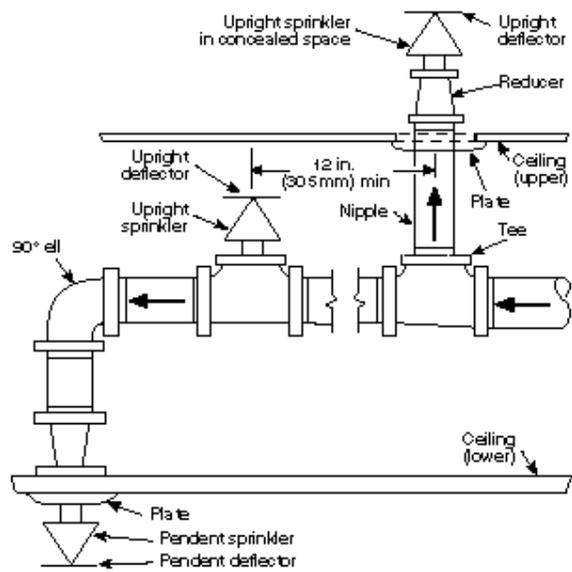
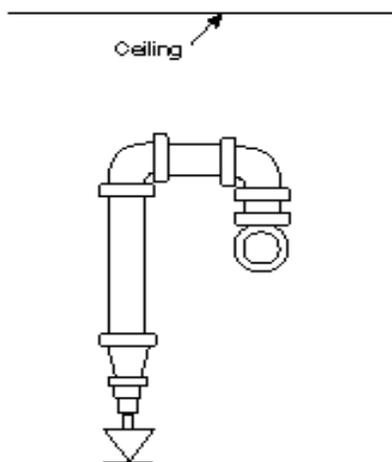


Figure 5-13.19 Return bend arrangement.



فقط في حالة إذا كان خزان الماء الذي يمد شبكة الإطفاء ليس له سقف أو أن الماء المستعمل من ماء البحيرات الغير مصفى يجب مراعاة أن تكون الماسورة التي تغذي الرشاش على شكل U مقلوبة (Return Bend 4-13.17)

5-13.19 Return Bends.

Return bends shall be used where pendent sprinklers are supplied from a raw water source, mill pond, or from open-top reservoirs. Return bends shall be connected to the top of branch lines in order to avoid accumulation of sediment in the drop nipples. (See Figure 4-13.17).

Exception No. 1: Return bends are not required for deluge systems.

Exception No. 2: Return bends are not required where dry-pendent sprinklers are used.

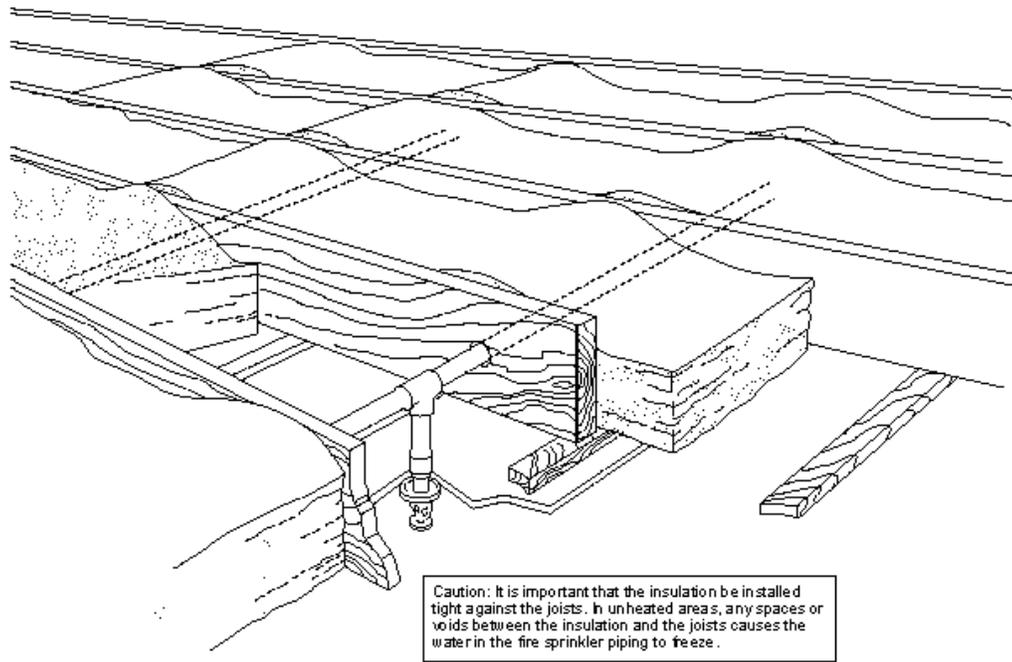
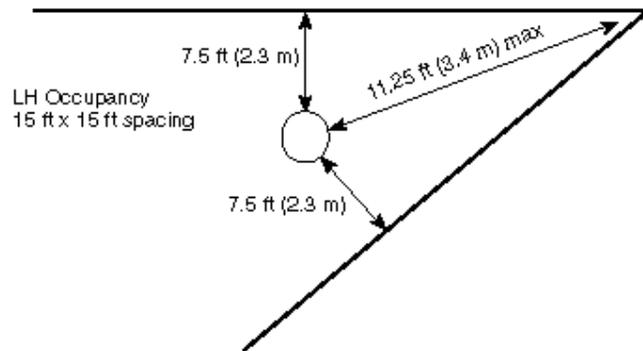


Figure A-4-3.1(a) Insulation recommendations.



A-4-6.3.2 See Figure A-4-6.3.2



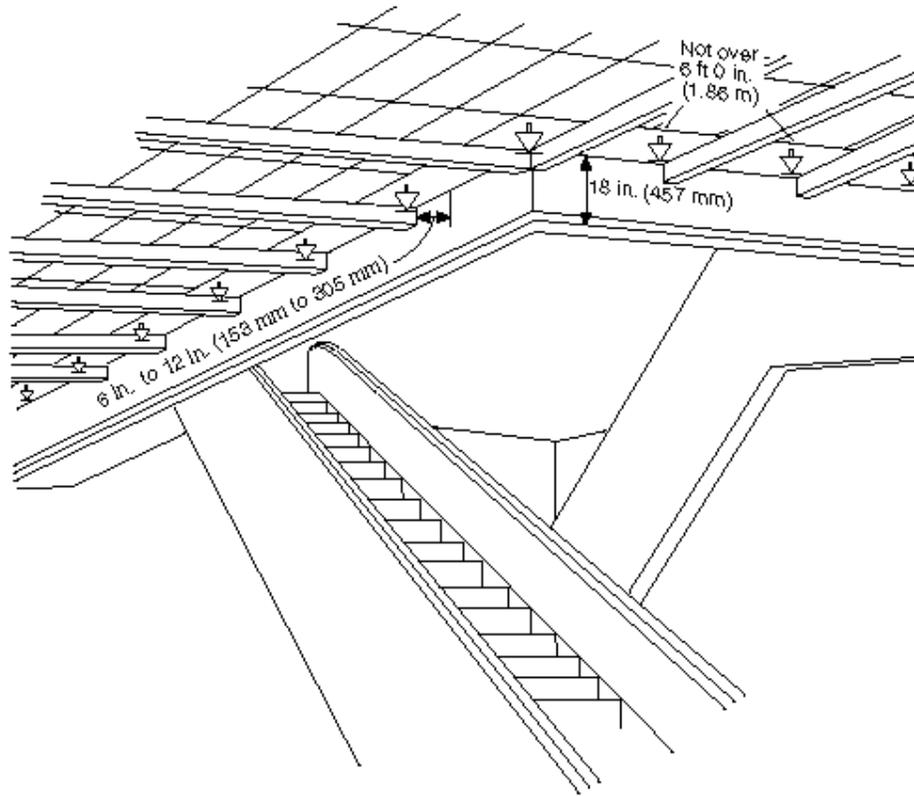
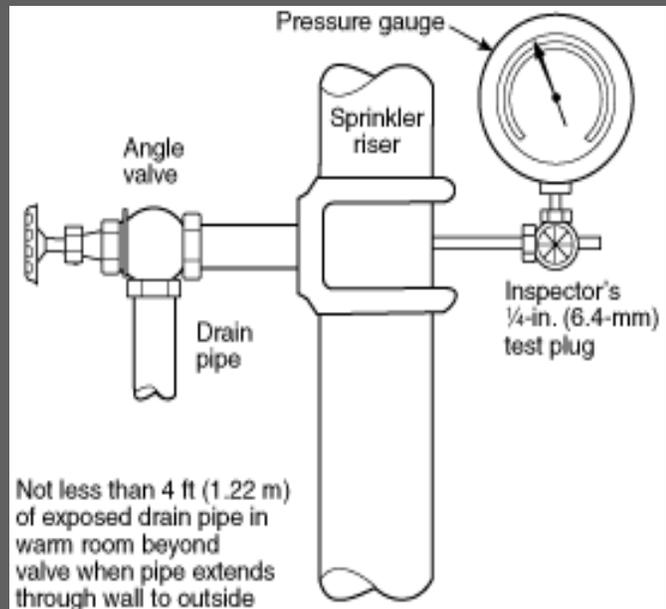


Figure A-4-13.3.4 Sprinklers around escalators.

5-14.2.4 System, Main Drain, or Sectional Drain Connections.
[See Figures 5-14.2.4 and A-5-15.4.2(b).]

Figure 5-14.2.4 Drain connection for system riser.



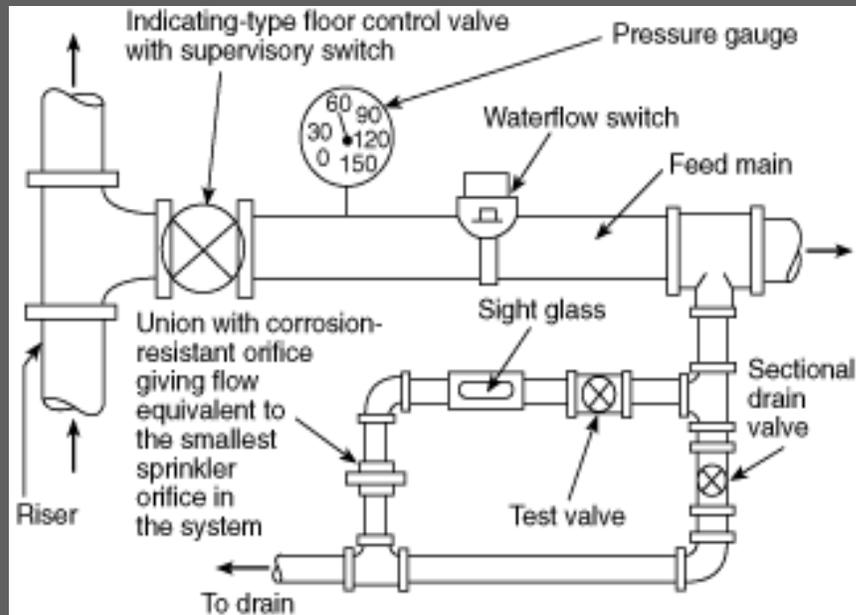
5-14.2.4.2

Drain connections for systems' supply risers and mains shall be sized as shown in Table

Riser or Main Size	Size of Drain Connection
Up to 2 in	$\frac{3}{4}$ in or larger
2 ½ in , 3in , 3 ½in	1 ½in or larger
4in and larger	2in only

Table 4-14.3.4.2 Drain Size

Figure A-5-15.4.2(b) Floor control valve.



5-14.3.2 Protection of Piping Against Corrosion.

Where corrosive conditions are known to exist due to moisture or fumes from corrosive chemicals or both, special types of fittings, pipes, and hangers that resist corrosion shall be used or a protective coating shall be applied to all unprotected (exposed surfaces of the sprinkler system. (See 3-2.6

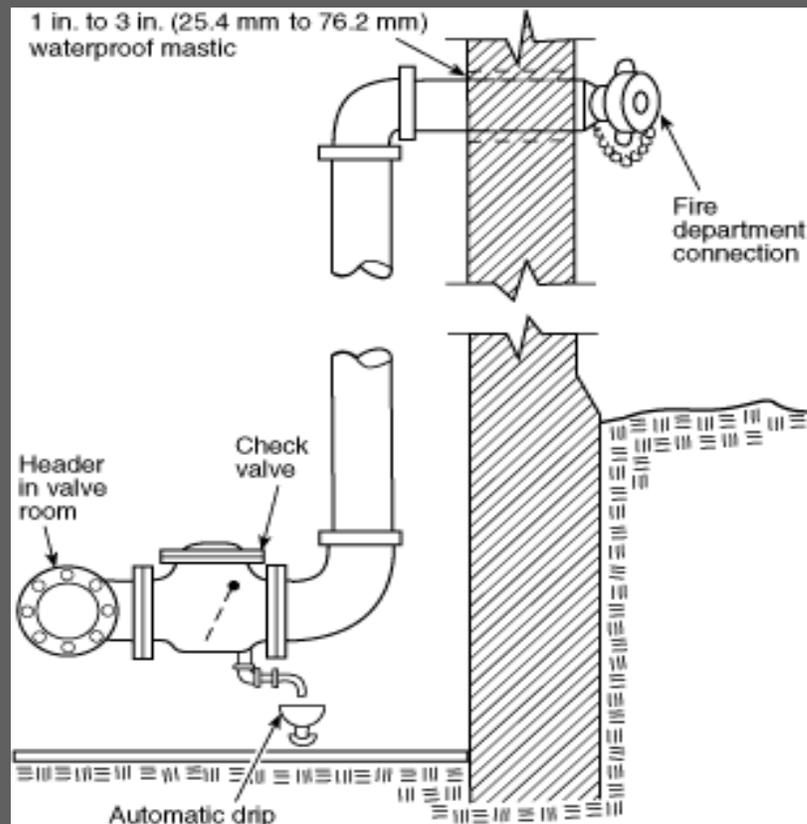
5-14.4* Underground Private Fire Service Mains.

5-14.4.1 Depth of Cover.

The depth of cover over water pipes shall be determined by the maximum depth of frost penetration in the locality where the pipe is laid. The top of the pipe shall be buried not less than 1 ft (0.3 m) below the frost line for the locality. In those locations where frost is not a factor, the depth of cover shall be not less than 2 1/2 ft (0.8 m) to prevent mechanical damage. Pipe under driveways shall be buried a (minimum of 3 ft (0.9 m) and under railroad tracks a minimum of 4 ft (1.2 m

5-15.2* Fire Department Connections.

.Figure 5-15.2.1 Fire department connections



5-15.2.2 size

Pipe size shall be 4 in. (102 mm) for fire engine connections and 6 in. (152 mm) for fire boat connections

5-15.2.3.1

The fire department connection shall be on the system side of the water supply check valve

يجب ألا تثبت شبكة المواسير تشبيثا كاملا

(Clearance 4-14.4.3.4)

4-14-4.3.4 Clearance. Clearance shall be provided around all piping extending through walls, floors, platforms, and foundations, including drains, fire department connections, and other auxiliary piping

4-14.4.3.4.1 Where pipe passes through holes in platforms, foundations, walls or floors, the holes shall be sized such that the diameter of the holes is 2 in. (50 mm) larger than the pipe for 1 in. (25 mm) nominal to 3 1/2 in. (89 mm) nominal and 4 in. (100 mm) larger than the pipe for pipe 4 in. (100 mm) nominal and larger. Clearance from structural members not penetrated or used, collectively or independently, to support the piping shall be at least 2 in. (51 mm.)

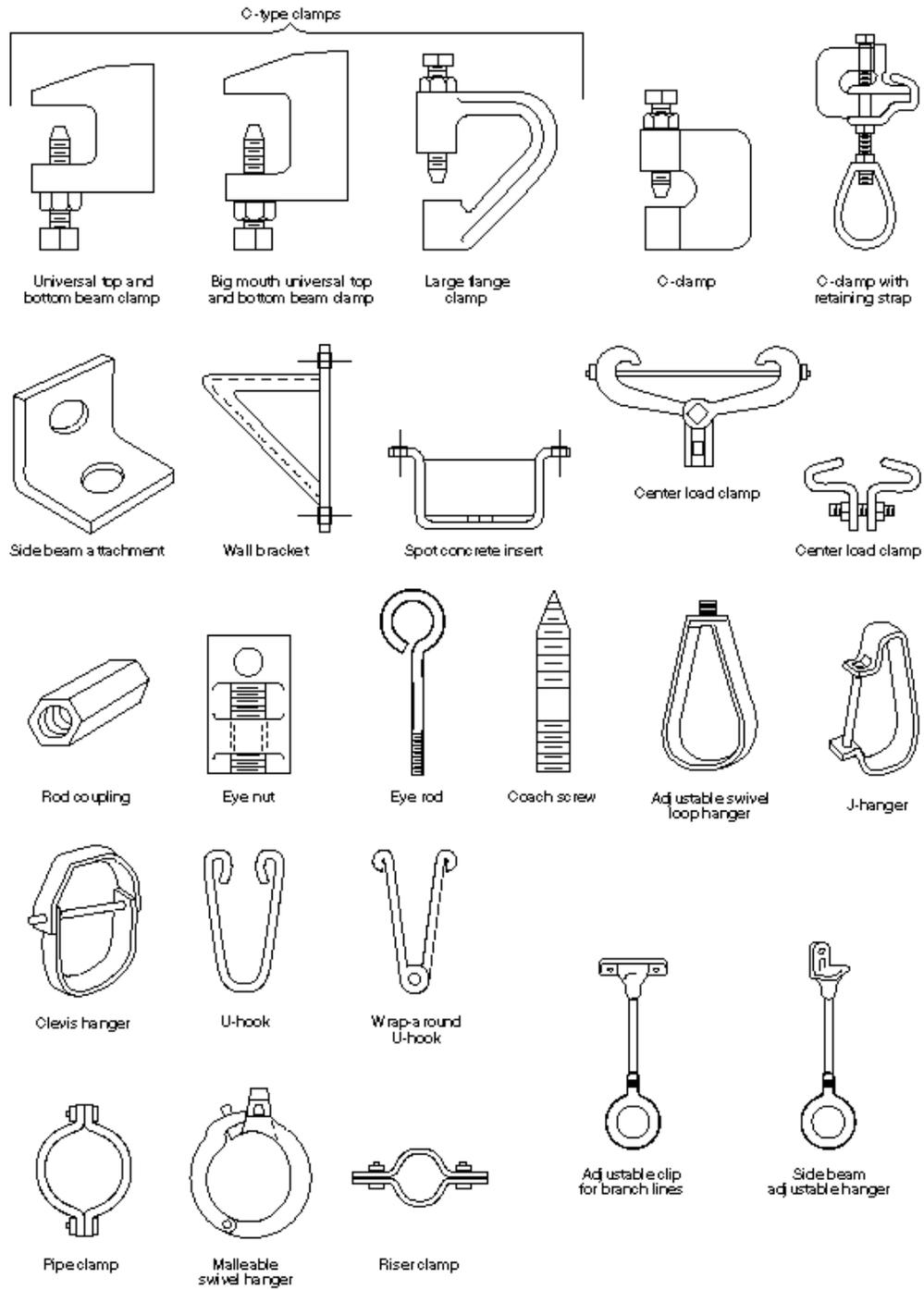
Exception No. 1: Where clearance is provided by a pipe sleeve, a nominal diameter 2 in. (51 mm) larger than the nominal diameter of the pipe is acceptable for pipe sizes 1 in. (25.4 mm) through 3 1/2 in. (89 mm), and the clearance provided by a pipe sleeve of nominal diameter 4 in. (102 mm) larger than the nominal diameter of the pipe is acceptable for pipe sizes 4 in. (102 mm) and larger.

Exception No. 2: No clearance is necessary for piping passing through gypsum board or equally frangible construction that is not required to have a fire resistance rating.

Exception No. 3: No clearance is necessary if flexible couplings are located within 1 ft (0.31 m) of each side of a wall, floor, platform, or foundation.

4-14.4.3.4.2 Where required, the clearance shall be filled with a flexible material such as mastic.

انظر أيضا طرق التعليق



القاعدة التي تحكم المسافة التي بين كل مركزي تعليق الماسورة وكذلك قطر مسمار التعليق تأخذ في الاعتبار وزن الماء بالماسورة بالإضافة الى قيمة ثابتة كمعامل امان

A-2-6.1.7 The rules covering the hanging of sprinkler piping take into consideration the weight of water-filled pipe plus a safety factor. No allowance has been made for the hanging of nonsystem components from sprinkler piping.

جدول لكمية الماء للقدم الطولي لمواسير SCH40

الكمية/جالون	قطر الماسورة/بوصة	الكمية/جالون	قطر الماسورة/بوصة
0.383	3	0.045	1
0.66	4	0.078	1/4
1.5	6	0.106	1/2
2.66	8	0.175	2
		0.285	1/2

Table A-3-2.3 Capacity of One Foot of Pipe (Based on Actual Internal Pipe Diameter)

العلاقة بين المسافة بين كل من مركزي تعليق ماسورة و قطرها

Table 4-14.2.2.1 Maximum Distance between Hangers (ft – in)

Size (in)	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Steel pipe except threaded lightwall	0-12			0-15						

قطر مسمار التعليق

Table 2-6.4.1 Hanger Rod Sizes

	Diam. of Rod - mm	Diam. of Rod - in

Pipe Size Up to and including 4 in.	9.5	3/8
5 , 6 and 8 in	12.7	1/2
10 and 12 in	15.9	5/8

For SI Units: 1 in. = 25.4 mm.

6-1 Hangers.

- a) Hangers shall be designed to support five times the weight of the water-filled pipe plus 250 lb (114 kg) at each point of piping support.
- b) These points of support shall be adequate to support the system.
- c) The spacing between hangers shall not exceed the value given for the type of pipe as indicated in

مواصفات المواسير بالشبكة

المواسير من الحديد الاسود الملحوم او المسحوب يجب ان تتبع المواصفات

Table 2-3.1 Pipe or Tube Materials and Dimensions

Spec. for Welded and Seamless Steel Pipe ANSI/ASTM A 53
Spec. for Elec.-Resistance Welded Steel Pipe ASTM A 135

5-14.4.1 Depth of Cover.

5-14.4.1.1*

The depth of cover over water pipes shall be determined by the maximum depth of frost penetration in the locality where the pipe is laid. The top of the pipe shall be buried not less than 1 ft (0.3 m) below the frost line for the locality. In those locations where frost is not a factor, the depth of cover shall be not less than 21/2 ft (0.8 m) to prevent mechanical damage. Pipe under driveways shall be buried a minimum of 3 ft (0.9 m) and under railroad tracks a minimum of 4 ft (1.2 m).

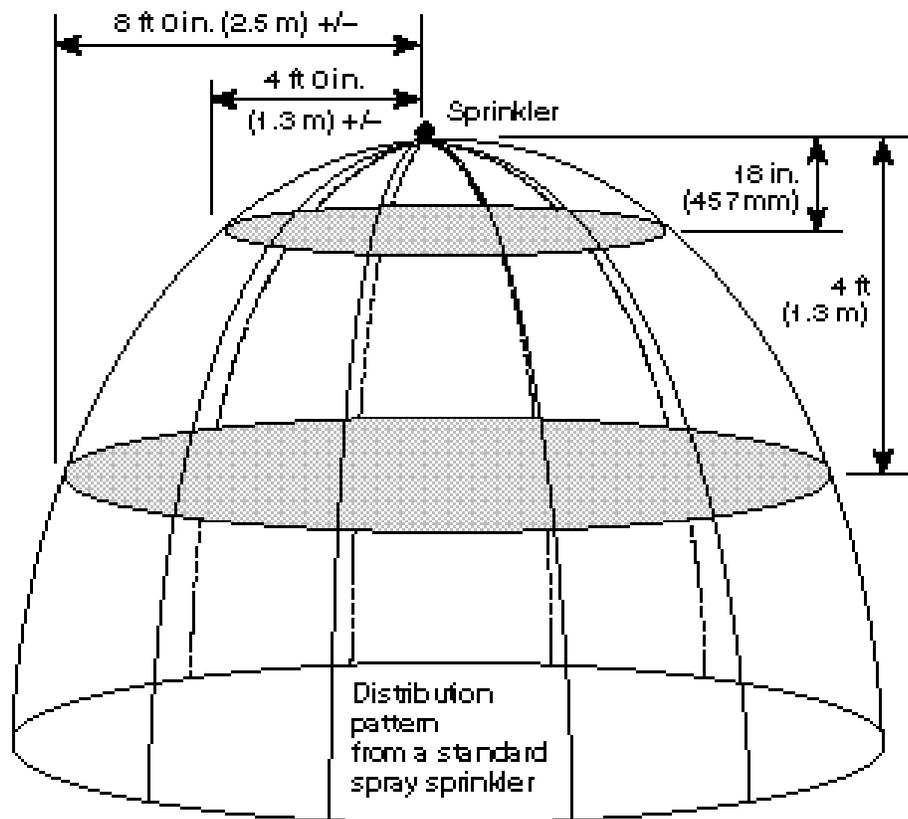
7*6.1.2-3

Steel pipe with wall thicknesses less than Schedule 30 [in sizes 8 in. (203 mm) and larger] or Schedule 40 [in sizes less than 8 in. (203 mm)] shall not be joined by threaded fittings

.Exception: A threaded assembly investigated for suitability in automatic sprinkler installations and listed for this service shall be permitted.

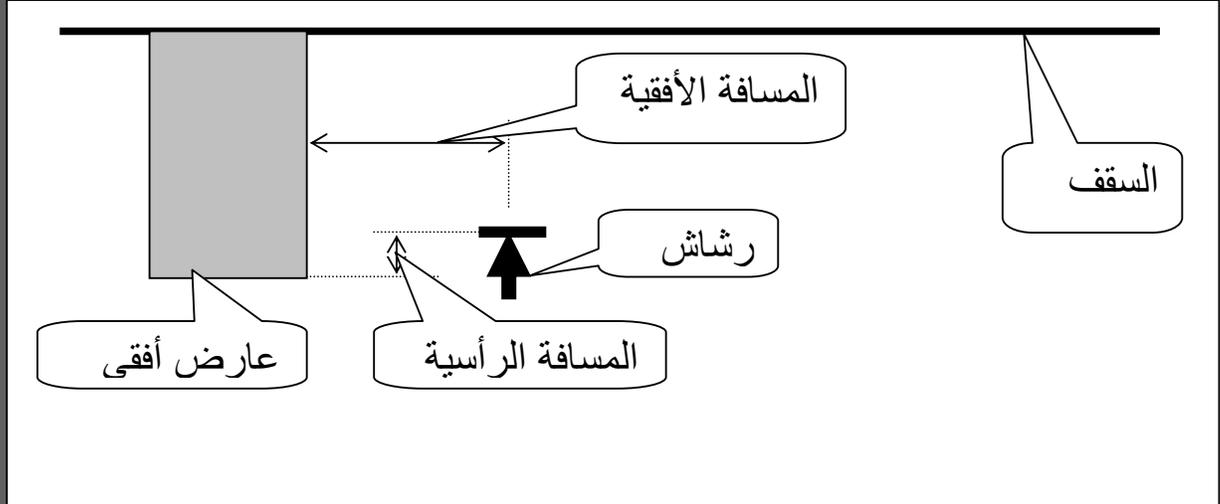
الشكل العام للماء الخارج من الرشاش

4-5.5.1.1 Sprinklers shall be located so as to minimize obstructions to discharge as defined in 4-5.5.2 and 4-5.5.3 or additional sprinklers shall be provided to ensure adequate coverage of the hazard. (See Figure 4-5.5.1.1).



عندما يكون الرشاش أعلى من السطح السفلي للعارض الأفقي

Table 4-6.5.1.2 Positioning of Sprinklers to Avoid Obstructions to Discharge (SSU/SSP)



المسافة الرأسية (سم)	المسافة الأفقية (سم)
صفر	أقل من 30
2.5	من 30 إلى 45
5	من 45 إلى 60
7.5	من 60 إلى 75
10	من 75 إلى 90
15	من 90 إلى 105
17.5	من 105 إلى 120
20	من 120 إلى 135

الرشاشات الجانبية (SIDEWALL SPRAY SPRINKLERS)

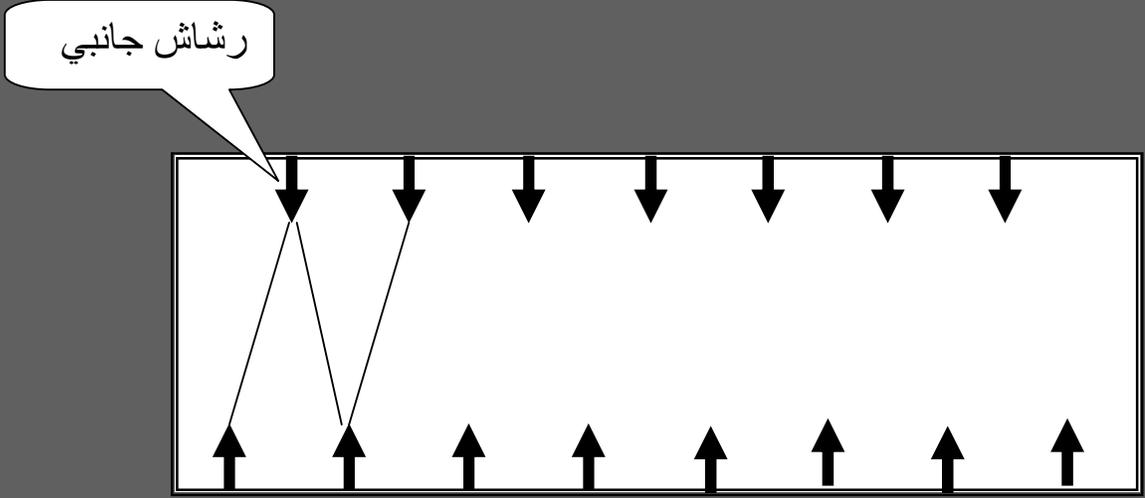


FIGURE 4-4.2.1

في حالة إذا كان بالغرفة فرع واحد من الرشاشات

الرشاش العادي	الرشاش الخفيف	
10	14	أقصى مسافة بين رشاشين (قدم)
10	12	أقصى عرض للغرفة (قدم)
100	168	أقصى مساحة مغطاة للرشاش (قدم ²)

TABLE 4-4.2.1

العلاقة بين قطر الماسورة و عدد الرشاشات التي تتغذى منها وذلك في حالة المواسير الحديدية على أن يكون الرشاش متوسط

6-5.3.2(a) Ordinary Hazard Pipe Schedule

عدد الرشاشات التي يمكن أن تتغذى منها	قطر الماسورة بالبوصة
2	1
3	1 1/4
5	1 1/2
10	2
20	2 1/2
40	3
65	3 1/2
100	4
160	5
275	6

ملحوظة: عدد الرشاشات في أي فرع لا يزيد عن 8 رشاش (6-5.2.3)

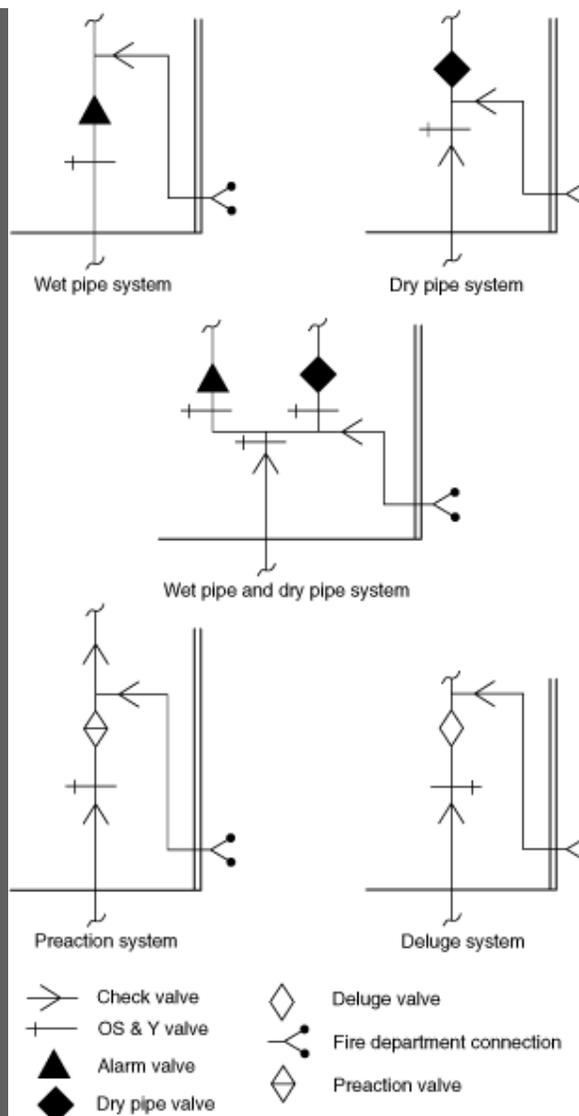
5.3.3-6 Where sprinklers are installed above and below ceilings and such sprinklers are supplied from a common set of branch lines or separate branch lines supplied by a common cross main, such branch lines shall not exceed 8 sprinklers above and 8 sprinklers below any ceiling on either side of the cross main. Pipe sizing up to and including 3 in. (76 mm) shall be as shown in Table 6-5.3.3 [see Figures 6-5.2.3(a), (b), and (c)] utilizing the greatest number of sprinklers to be found on any two adjacent levels.

Exception: Branch lines and cross mains supplying sprinklers installed entirely above, (or entirely below, ceilings shall be sized in accordance with Tables 6-5.3.2(a) or (b

Table A-6-5.4 Extra Hazard Pipe Schedule

<i>Steel</i>		<i>Copper</i>	
<i>1in.</i>	<i>1sprinkler</i>	<i>1in.</i>	<i>1sprinkler</i>
<i>4/11in.</i>	<i>2sprinklers</i>	<i>4/11in.</i>	<i>2sprinklers</i>
<i>2/11in.</i>	<i>5sprinklers</i>	<i>2/11in.</i>	<i>5sprinklers</i>
<i>2in.</i>	<i>8sprinklers</i>	<i>2in.</i>	<i>8sprinklers</i>
<i>2/21in.</i>	<i>15sprinklers</i>	<i>2/21in.</i>	<i>20sprinklers</i>
<i>3in.</i>	<i>27sprinklers</i>	<i>3in.</i>	<i>30sprinklers</i>
<i>2/31in.</i>	<i>40sprinklers</i>	<i>2/31in.</i>	<i>45sprinklers</i>
<i>4in.</i>	<i>55sprinklers</i>	<i>4in.</i>	<i>65sprinklers</i>
<i>5in.</i>	<i>90sprinklers</i>	<i>5in.</i>	<i>100sprinklers</i>
<i>6in.</i>	<i>150sprinklers</i>	<i>6in.</i>	<i>170sprinklers</i>

For SI Units: 1 in. = 25.4 mm.



.Figure A-5-14.1.1 Examples of acceptable valve arrangements

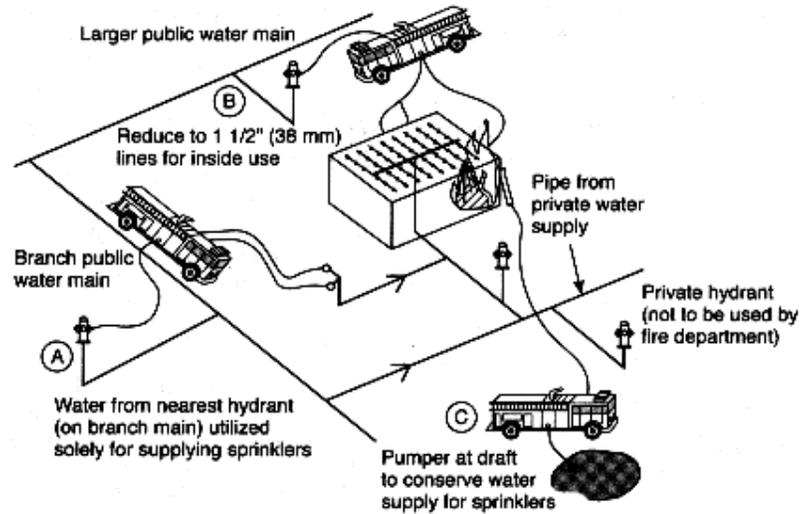


Figure 2-3.4(c) Where hose streams will be used, water should be taken from sources that do not reduce the sprinklered protection. Pumpers should be supplied :by either connecting to large mains that flow tests have indicated should be adequate to (1) ;supply both sprinklers and the required hose streams connecting to water mains not needed for sprinkler supply; or (3) drafting (2) from static sources.

العلاقة بين نوع الرش و مساحة التشغيل والكثافة الرش وكمية الماء المطلوبة لتشغيل النظام

FIG.(5.2.3)

حجم الوزن = كمية الماء المطلوبة × مدة التشغيل(م3)	مدة تشغيل النظام (دقيقة)	كمية الماء للخراطيم- (ج/د)	كمية الماء للرشاشات لمنطقة التشغيل – (ج/د)	الكثافة (ج/د/قدم2)	مساحة منطقة التشغيل (قدم2)	نوع الرش
29	30	100	150	0.10	1500	خفيف
74	60	100	225	0.15	1500	متوسط 1
91	60	100	300	0.20	1500	متوسط 2
290	90	100	750	0.30	2500	عالي 1
375	90	100	1000	0.40	2500	عالي 2

يجب أن نبنى حساباتنا على فرض أن الحريق سوف يبدأ من أبعد منطقة عن مكان دخول ماسورة التغذية الرئيسية للمكان المراد تغطيته بشبكة الرش الآلي. هذه المنطقة تسمى منطقة التشغيل (Operating Area), وتحدد مساحتها حسب نوعية كثافة الرش (Classification Occupancies), المرتبطة بنوعية المخزون, (FIGURE 5-2.3).

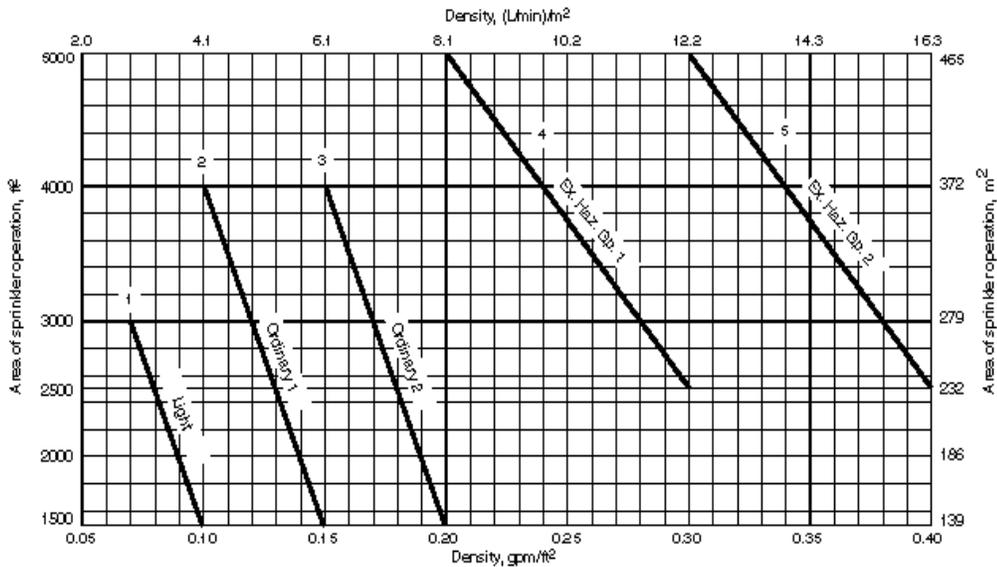


Figure 5-2.3 Area/density curves.

عدد الرشاشات التي بمنطقة التشغيل = مساحة منطقة التشغيل / مساحة المنطقة التي يغطيها الرشاش الواحد (يفرضها المصمم حسب أبعاد المساحة المغطاة بالرشاشات

كمية الماء المطلوبة لخراطيم الحريق (Fire Hose)

Table 5-2.3 Hose Stream Demand and Water Supply Duration Requirements

Hazard Classification	Total Combined Inside and Outside Hose (gpm)	Outside Hose (gpm)	Duration in Minutes
Light	100	50 or 100	30
Ordinary	250	50 or 100	60-90
Extra Hazard	500	50 or 100	90- 120

كمية الماء المطلوبة للنظام كله = كمية الماء المطلوبة للرشاشات + كمية الماء المطلوبة للخراطيم

حساب حجم خزان الماء = كمية الماء المطلوبة للنظام كله x مدة تشغيل النظام

سعة الخزان لعمل المضخة 60 دقيقة (متر)	سعة الخزان لعمل المضخة 30 دقيقة (متر)	السعة (جالون/ الدقيقة)
34	17	150
44	22	200
68	34	300
112	56	500
170	85	750
226	113	1000
272	136	1200

تحويلات مهمة

لتر = 1000 سم³

3 متر = 264 جالون أمريكي

جالون أمريكي = 3,78 لتر

3,3 قدم = 1 متر

2 متر = 10,7 قدم

1 بار (كجم/سم²) = 14,7 psi (رطل/بوصة²)

1 بار = وزن كمية من الماء تملأ ماسورة مساحة مقطعها 1 سم² و ارتفاعها 10 م

1 رطل/بوصة² = وزن كمية من الماء تملأ ماسورة مساحة مقطعها 1 بوصة² و ارتفاعها 0.68 م

$$F = 9/5 (C) + 32$$

$$C = 5/9 (F - 32)$$

F = درجة حرارة فهرنهايت

C = درجة حرارة مئوية

Pascal (Pa)

psi = 6894.757 Pa

bar = 105 Pa

نموذج اختبار نظام الإطفاء الآلي

تاريخ الكشف : / / 14 هـ

نوع الموقع :

اسم الموقع :

اسم الشركة أو المؤسسة المنفذة :

أولاً :-

مجموعة المضخات

لوحة تحكم و تشغيل المضخات

أ- التأكد من أن التيار الكهربائي واصل إلي اللوحة (لمبة بيان وصول التيار إن وجدت يجب أن

تكون مضاءة)

مضاءة غير مضاءة

ب- التأكد من أن مستوي الماء بالخزان علي المستوي المطلوب (لمبة بيان مستوي الماء يجب أن

تكون غير مضاءة)

مضاءة غير مضاءة

ت- مفاتيح تشغيل المضخات يجب أن تكون في وضع التشغيل الآلي

نعم

لا

المضخة الرئيسية و المساعدة

ث- يجب أن يكون مؤشر ضغط الماء بين (5.5 : 7) بار

ج- يجب أن يتصل خط راجع إلي خزان الماء بخط الدفع الرئيسي للمضخات .- خط الراجع هذا

مزود بمحبس يستخدم لإختبار تشغيل المضخات

طرق إختبار و تشغيل المضخات

ح- يتم فتح محبس الإختبار (البند 2 - ب) و يتم ملاحظة مؤشر ضغط الماء و رصد البيانات

التالية

المضخة المساعدة		المضخة الرئيسية	
ضغط الإقفال	ضغط التشغيل	ضغط الإقفال	ضغط التشغيل

ملاحظة :-

يمكن أداء هذا الإختبار لكل مضخة على حده

خ- ضغط إختبار النظام – يتم ضغط الشبكة إلي 13.6 بار لمدة ساعتين و يجب ألا ينخفض الضغط خلال هذه المدة

ثانيا :- المستودعات

1- مطابقة المخطط مع الشبكة

أقطار المواسير

أ- عدد الأفرع

ب- عدد الرشاشات لكل فرع

ت- وجود محبس فحص في كل خط رئيسي

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-
-
-

2- التأكد من عدم وجود مخالفات فنية بالشبكة

أ- ضغط الشبكة يكون مناسب بالعداد العلوي الذي عند الريزر

ب- إذا وجد خط بجانب الجسور العلوية يجب أن تكون المسافة بينهما و المسافة بين أعلى الرشاش و

أسفل الجسر حسب الجدول الآتي :-

الرأسي سم	الأفقي سم
7.5	45 – 30
12	75 – 60
18	90 – 75
34	135 – 120



ت - المسافة بين أعلى الرشاش وسقف المبني لا يزيد عن 30سم



ث - التأكد من مطابقة القطع للمواصفات الفني

3- طرق إختبار وتشغيل النظام

أ- فتح محابس التفريغ بالخطوط الرئيسية

ب- فتح محبس التفريغ الرئيسي بالريزر

ت- فتح خراطيم الحريق

في أي حالة من الحالات أ؛ب؛ت يجب أن تعمل المضخات إذ إنخفاض الضغط عن الحد المطلوب .

اسم المستلم من الدفاع المدني :

التوقيع :

طرق الصيانة الوقائية

أولاً : الصيانة اليومية

- 1- التأكد من أن الضغط بداخل الشبكة يقع في النطاق المسموح به (5 – 7) بار, وذلك من خلال ساعات الضغط الموجودة بجانب الريزر أو بداخل الموقع .
- 2- التأكد من أن مستوى الماء بداخل ماسورة السحب للمضخات يملأ الماسورة.
- 3- لمبة بيان وجود التيار بلوحة التحكم للمضخات تشير بوجود التيار (مضاعة) .
- 4- لمبة بيان مستوى الماء بالخزان بلوحة التحكم للمضخات تشير إلى أن المستوى مناسب (غير مضاعة) (
- 5- لمبة بيان وجود عطل بمضخات الحريق بلوحة التحكم للمضخات تشير إلى عدم وجود أي عطل بالمضخات (غير مضاعة) .
- 6- محابس البوابة الرئيسية في الوضع المفتوح .

ثانياً : الصيانة الأسبوعية

- فتح محبس الراجع الرئيسي بغرفة المضخات لتشغيل المضخات لمدة خمسة دقائق و التأكد من أنها تعمل بشكل جيد .
- لتشغيل مضخة الكهرباء – التيار يجب أن يكون متصل بلوحة التحكم للمضخات .
 - لتشغيل مضخة الديزل – التيار يجب أن يكون منفصل عن لوحة التحكم للمضخات .

ثالثاً : الصيانة الشهرية

- فتح جميع محابس التفريغ كل واحد على حدة وملاحظة لون الماء الخارج منها , ولا تغلق حتى يصبح لون الماء صافي وليس به أي شوائب .
- فتح وغلق محابس البوابة مرتين متتاليتين مع تنظيف العمود وتشحيمة .

كيفية التصرف في حالة حدوث حريق / سماع جرس الحريق

- خروج جميع العاملين من ساحة (المصنع / المستودع) الذي به الحريق .
- التأكد من خلال الأفراد الذين تم تدريبهم على طرق استعمال و تشغيل أنظمة الحريق , على تحديد هوية الإنذار - هل هو إنذار فعلي أم إنذار كاذب

أ- في حالة وجود إنذار فعلي – حريق لا سمح الله:

يتم عمل الآتي

1. فتح جميع الأبواب و النوافذ وإخلاء المكان من الأشخاص
2. إغلاق التيار الكهربائي داخل مكان الحريق
3. الاتصال بالدفاع المدني علي الرقم 998
4. محاولة إطفاء الحريق بواسطة الأفراد المدربين باستخدام خرطوم الماء أو طفايات الحريق أو كلاهما معا.

ب - في حالة وجود إنذار كاذب

(1- كسر ماسورة 2- انفجار رشاش 3- تسريب ماء 4 – فتح أحد محابس التفريغ)

يتم عمل الآتي

وضع مفاتيح تشغيل المضخات في وضع القفل (OFF)
فتح محابس التفريغ لنهايات الخطوط الرئيسية للمكان الذي به التسرب

فتح محبس التفريغ الرئيسي ("2") الموجود بالريزر

استعمال خرطوم الحريق لزيادة سرعة تفريغ الماء من الشبكة

بعد تمام تفريغ الماء من الشبكة يتم إصلاح العطل

يتم قفل جميع المحابس و الخرطوم المفتوحة بالبند (3 ، 4 ، 5)

وضع مفاتيح تشغيل المضخات في وضع التشغيل الآلي