



Fire Suppression Services Incorporated  
3802 South 2300 East, Millcreek, UT 84109. Ph (801) 277-6464

**High Voltage & Low Voltage  
Connections  
& other REQUIRED  
items you MUST supply for  
Fire Suppressing Equipment**

**Background reading**

**Notes to Owner & Architect I**

**Master Format 2012**

## Contents

What is required,.....	2
FROM other divisions by the Fire Suppression Teams .....	2
1. The PBX-Data Room Chemical Suppression System team .....	2
Div-05 Framing.....	2
Div-09, -23, -26, -27, -25 -28 et al.....	2
Div-26 Electrical .....	2
Div-28 Electronic Safety & Security .....	3
Maintenance .....	3
2. The Kitchen Hood Chemical Suppression team .....	3
Div-22 Plumbing.....	3
Div-23 Ventilation Hoods, Div-11 Kitchen Equipment, Div-26 Electrical.....	3
Div-26 Electrical .....	3
Div-28 Electronic Safety & Security .....	3
Misc.....	3
3. The Wet Sprinkler Fire Suppression system team .....	3
Div-09 Paint - Plaster Gypsum Board .....	3
Div-14 Conveying Equipment & Elevators .....	4
Div-23 HVAC and Internal Combustion Engine Piping .....	4
Div-26 Electrical .....	4
Div-28 Electronic Safety & Security .....	4
Div-31 Trench & Backfill to supply underground utility water to sprinkler riser.....	4
Div-33 Section 11 19 Fire Suppression Utility Water Distribution Piping .....	4
Maintenance .....	5
4. Fire Extinguisher Cabinet & Portable Extinguisher team.....	5
Div-05 Framing.....	5
Extract from NFPA-10.....	5
Fire Classification Descriptions.....	6
Div-28 Electronic Safety & Security .....	6
5. Alarm – Fire & Life Safety System team .....	6
Div-05 Framing.....	6
Div-26 Electrical .....	6
Div-27 Comms.....	6
Maintenance .....	6
References .....	6
Credits .....	7

*Errors & Omissions to [ArunFSS@live.com](mailto:ArunFSS@live.com)*



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**What is required,  
FROM other divisions by the Fire Suppression Teams**

A reminder to Owner, Architect and those who may be interested, of the various items that need attending to, by 'other-trades' when fire suppression equipment is being installed.

This includes both high & low voltage wiring of various equipment, heating & lighting of certain areas; and what you should be aware of in the process of the various installations.

**PLEASE BE ADVISED:** *Designers for all divisions of Fire Suppression need a FULL set of CAD files.*

This document will serve as a reminder that the item is: (Code) and/or should be put in someone's scope of work: (Scope) and most importantly all: **the items are required.**

Most items, not only are required, they are part of Building or Fire (Code) and affect Insurances & Occupancy permits.

The trade codes used are from *MasterFormat® Numbers & Titles issued February-2015* by CSI

**1. The PBX-Data Room Chemical Suppression System team**

AKA Clean-Agent team. FM200 or equivalent.

These Suppression Installation Technicians will require the following from:

**Div-05 Framing**

a. Sealing

i. Deck/Ceiling, Floor, Door, Skirting, walls.(Scope)

1. Must not allow gas to escape too quickly. All entry/penetration points must be caulked/sealed.

ii. The Doors to data/pbx room (Code) (Scope)

Must:

1. Seal when closed on all four edges. (Code)
2. Close automatically when opened. (Code)
3. Never be chocked, never wedged open (Code)
4. Be labeled with FM 200 signs, or their equivalent. No paint over-spray. (Code)

If you fail the first fan test, you will not pass AHJ Final for the room, and it will add approx. \$1,000.00 to your Contract for a re-test.

**Div-09, -23, -26, -27, -25 -28 et al**

If you penetrate any of the six surfaces of the room YOU MUST SEAL.

Keep Hilti fire caulk & fire pillows handy.

If you 'pop' the ceiling tiles, clip 'em back in place. (Remind your IT staff)

Do not paint the nozzles. (Code)

Do NOT clean painted nozzles; you change their Thermal Coefficient. You must replace. (Code)

**Div-26 Electrical**

- a. HV 110-125 Volt 25 Ampere grounded dedicated line from your breaker panel to be supplied by client's Electricians for the Chemical Suppression Control Panel and for the exterior wall-mounted alarm/strobe. (Code) (Scope)
- b. Should mount the room's exterior 'Alarm/Strobe' and the FDC 'Alarm/Strobe'..(Scope)
- c. Breaker must be clearly labeled at the electrical panel. (Code)



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**Notes to Owner & Architect I**

**Master Format 2012**

**Div-28 Electronic Safety & Security**

- a. PIV's, OS&Y valves, Riser room, Flow & Tamper switches, exit lights and strobe LV line/s must be wired and connected to building alarm panel/alarm system by Client's Alarm Technicians.(Code) (Scope).
  - b. Phone number & contact information of the Remote Alarm Monitoring Company.
    - a. Please give it to FSS Site Super
  - c. **Fire Suppression Services** Alarm Technicians can do this, if so required.(Fees apply)
- Maintenance**
- d. Door seal. Ceiling tile clips, Fire Caulking, Check Pressure gauge on the chemical tank.

**2. The Kitchen Hood Chemical Suppression team**

Our Chemical Suppression Installation Technicians will require the following from:

**Div-22 Plumbing**

- a. Plumbers are to install the natural gas valve that we will hand them, into the gas line. (Scope).
  - i. You tell us what size the gas line will be.
  - ii. When it actuates, it must shut off the gas to ALL cooking appliances under the kitchen hood. (Code)
- b. (The **FSSI** installation technician will connect the actuator on the gas valve to the Ansul Cabinet)

**Div-23 Ventilation Hoods, Div-11 Kitchen Equipment, Div-26 Electrical.**

- c. Advisory: The Kitchen Hood/s must have thermal sensors, connected to a Control Box which in turn, signals the exhaust/make-up fan equipment. Your hood supplier in co-operation with an electrician should do this. (Caveat: the thermal sensors must override the manual on-off switches. Manual on-off switches must NOT override the thermal sensors. (Code) (Scope).

**Div-26 Electrical**

- d. HV 110-125 Volt 25 Ampere supply is to be supplied by client's electricians, on a dedicated grounded circuit and should be run to the junction box adjacent to the Ansul Cabinet that contains the Automan. (Scope). Electricians are not permitted inside the Ansul Cabinet. It voids the Warranty. (Because 90% of the time they fry it!)

**Div-28 Electronic Safety & Security**

- e. LV line/s back to the building alarm panel to be supplied by Client's alarm technicians, from the micro-switch inside the Ansul Cabinet. (Scope)(Code)

**Misc.**

- f. All cooking appliances must be permanently fixed in place under the hood system before we can begin installation of the kitchen-hood suppression system.
  - i. Check positioning with your Head Chef (Courtesy)
- g. Filters should be cleaned at least once a week.
- h. Hoods, their Ducts & Filters must be steam cleaned at least every six months, more often if heavy usage of kitchen cooking equipment (Code).
- i. **Fire Suppression Services Inc.** offers a fee-based kitchen hood steam-cleaning service.

**3. The Wet Sprinkler Fire Suppression system team**

Our Wet Suppression Installation Technicians will require the following from:

**Div-09 Paint - Plaster Gypsum Board**

- a. Leave the head covers on & must never paint sprinkler heads. (Code)



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**Notes to Owner & Architect I**

**Master Format 2012**

- a. You affect their thermal coefficient. If painted they must be replaced (Code)
- b. This will result in sprinkler-head & labour replacement costs.
- b. Always cover sprinkler heads and escutcheons before painting. (Coffee filters are your friend)
- c. With AHJ, we pressure test the system pre-final with water to 200 + psi to find leaks.
  - a. We accept NO responsibility for damage to sheet-rock or tiles if you cover us up.
  - b. Do not cover-up, do not tile or sheetrock until these tests are done. (Code)

**Div-14 Conveying Equipment & Elevators**

Sprinkler lines are required above & below

**Div-23 HVAC and Internal Combustion Engine Piping**

- d. Muffler & exhaust gas exhaust wall penetrations & pipe lagging for diesel fire pump.(Code) (Safety)
- e. Pump houses & Riser rooms, stairwells & attics, where standpipes & wet sprinklers exist must have heating and lights. (Code) (Scope)

**Div-26 Electrical**

- f. Electric &/or Diesel Fire Pumps, their control panels, the transfer switch, all require wiring and breakers. (Scope)
- g. Pump houses & Riser rooms, stairwells & attics, where standpipes & wet sprinklers exist must have heating and lighting. (Code) (Scope)
- h. FDC & Riser room each require an exterior horn/strobe to be mounted & wired.

**Div-28 Electronic Safety & Security**

- i. Exit light wiring
- j. Alarm wiring from the Back-Flow Preventer, Isolation valves, tamper switches, and flow switches (in your Riser room) back to the building alarm panel by the Client's alarm technicians (Code) (Scope)
- k. You may have Risers & Standpipes on each floor. They will have FDC's, flow switches and tamper devices. (May be in the stairwells on every level.)
  - a. They require LV wiring by your alarm technicians back to the building alarm panel) for Zone Control. (Code) (Scope)
  - b. They require heating and lighting (Code) (Safety)
- l. You may have OS&Y's, PIV's, & Hydrants outside the buildings that require FACP monitoring.
- m. Installation of Audible Strobe above the exterior door of the riser room and above the FDC.
  - a. So the Fire Dept. can find the Riser/ FDC. (Code) (Scope)
  - b. FDC to be close to the road, within reach of Fire Truck hoses.

**Div-31 Trench & Backfill to supply underground utility water to sprinkler riser**

**Div-33 Section 11 19 Fire Suppression Utility Water Distribution Piping**

- n. A water supply is required from your Utility to the flange for the riser AND to fire pump/s
- o. Drains holes from riser room floors; and drain hole through outside wall for Sprinkler System drain.
- p. Fire Pumps require drains from their gland-sealing & bleed valves. Diesel units require drain from the fuel bund wall.
- q. Document from Fire Marshal/AHJ witnessing a test of the utility piping system to the flange, using high velocity flows to remove debris from the piping system prior to it being placed in service. AKA: FORM 2K- Contractors Material & Test Certificate for **Underground Piping**. Thus



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**Master Format 2012**

certifying that all flushing & pressures testing of the mains has been completed & witnessed by the Local AHJ. (Code NFPA-13)

- r. The flushing operation shall be continued for a sufficient time to ensure thorough cleaning.
- s. All tees, plugs, caps, bends, reducers, valves, and hydrant branches shall be restrained against movement by using thrust blocks in accordance with 10.8.2 or restrained joint systems in accordance with 10.8.3.
- t. Proper directing of high velocity water away from building to prevent damage and to prevent the formation of an ice-rink or lake.
- u. Bacteria Test of water from certified city-water testing laboratory. (Consider Chlorination) (AHJ)
- v. Monitored Isolation Valve between Utility & inside-flange; Chain & Break-Away lock.
  - a. Often known as a (PIV) Post & Indicator Valve.
- w. PIV must be outside building.
  - a. AHJ decides whether it can be on wall or on land 20 feet away from outside wall. (Check with AHJ)

**Maintenance**

- x. Inspection, Draining, Operation Testing, every six months. Bacteria test every five years. (Code).
- y. Hydrants & their supply lines (Private Service Mains) require flushing & inspection every six-months. (Code)
- z. **Fire Suppression Services Inc.** offers a full featured fee-based Inspection & Test Service.
- aa. **Know How-To:**
  - a. Shut off the Riser in the riser room, and the standpipe on each floor.
  - b. Operate your PIV's
  - c. Wedge off a broken sprinkler head.
    - i. Keep rubberized door-type wedges handy. (LN Curtiss)
  - d. Start/Stop fire pumps; maintain fuel & engine oil levels.
  - e. Call your alarm company, know the code for the alarm company monitoring division

**4. Fire Extinguisher Cabinet & Portable Extinguisher team**

Our Suppression Installation Technicians will require the following from:

**Div-05 Framing**

- a. Framing in of Fire Extinguisher Cabinets.
  - i. Including cabinet for the K-Class extinguisher in kitchens.
  - ii. Fire Suppression Services technician will supply the Cabinet installation drawings which give measurements and instructions. (Scope)
- b. Installation of the cabinets and sheet-rock finishing. (Scope)

**Note:**

**Extract from NFPA-10**

- Distance from a portable extinguisher to the intended protection area must not exceed seventy-five feet travel distance and not exceed 3000 square feet of floor space per 5 pound ABC extinguisher.
- Distance of travel for areas where more than 5 gallons of flammable liquids are present (i.e. *garages under living areas*), must not exceed fifty feet and must be protected with an extinguisher with minimum 80BC rating. (10 poundABC)



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**Fire Classification Descriptions**

Class A - Solid materials such as wood, card, paper, fabric, etc.

Class B - Flammable liquids including kerosene, oils, petrol, paints, diesel, etc.

Class C - Electrical fires

Class D - Combustible metals or alloys, such as potassium, magnesium or titanium.

**Div-28 Electronic Safety & Security**

c. Cabinets that may be monitored will need wiring back to the FACP/BMS.(Code)

**5. Alarm – Fire & Life Safety System team**

Our Alarm Installation Technicians will require the following

**Div-05 Framing**

a. Framing in of Fire Alarm Control Panels (FACP) and front door annunciator Panels. (Scope)

**Div-26 Electrical**

Drop lines to panel only. DO NOT CONNECT to PANEL

a. Dedicated Grounded Power for panels (FACP's) CLEARLY LABELED at the BREAKER (Scope)

**Div-27 Comms**

Drop lines to panel only. DO NOT CONNECT to PANEL

a. Dedicated POTS phone line to FACP for remote monitoring One CAT5.

a. or optional Wireless Services for wireless dialer.  
Must have dial-tone (Scope)

b. Supply phone number to Alarm Technician

**Maintenance**

a. Maintain the Landline

a. Keep dial-tone on the line (Don't disconnect it just to save a phone-line charge)

b. Label the Dialer Line with a 'no-disconnect' label, at the demarcation block.

c. No voicemail on the line. The 'stutter' prevents Alarm dialer from seizing the line.

b. Maintain wireless dialer in service.

a. Maintain dial-tone on the line (Don't disconnect it just to save a phone-line)

c. Know How-To:

a. Call your Alarm Company. Know the password for the monitoring company.

b. Test your alarm.

**YOU MUST HAVE REMOTE MONITORING SERVICE IN PLACE BEFORE ALARM TECHS CONNECT  
BEFORE FINALS WITH AHJ**

**References**

	CSI Master Format numbers 2015 <a href="http://www.csinet.org/">http://www.csinet.org/</a>
NFPA 10:	Standard for Portable Fire Extinguishers.
NFPA 13:	Installation of Sprinkler Systems.
NFPA 14:	Standard for the Installation of Standpipes and Hose Systems, 2010 edition.
NFPA 17 & 17A	Standard for Dry/Wet Chemical Extinguishing Systems
NFPA 20:	Standard for the Installation of Stationary Pumps for Fire Protection, 2010 (if applicable)
NFPA 24	Standard for the Installation of Private Fire Service Mains and Their Appurtenances
NFPA 25	Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems
NFPA 30:	Flammable and Combustible Liquids Code 2003 Edition. (if applicable)





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NFPA 72: National Fire Alarm Code  
NFPA 96: Standard for Ventilation Control and Fire Protection of Commercial Cooking Ops/Grease-laden vapors.  
NFPA 101: Life Safety Code  
NFPA 170: Standard for Fire Safety and Emergency Symbols  
NFPA 750: Standard on Water Mist Fire Protection Systems  
NFPA 2001 Standard on Clean Agent Fire Extinguishing

Incorporated into this document are other NFPA Codes as referenced and where applicable.

NFPA Home: [http://www.nfpa.org/aboutthecodes/list\\_of\\_codes\\_and\\_standards.asp](http://www.nfpa.org/aboutthecodes/list_of_codes_and_standards.asp)

NFPA Data: <http://www.nfpa.org/codes-and-standards/document-information-pages>

EN 12845: Fixed firefighting systems, Automatic sprinkler systems, Design, installation and maintenance.

International Fire & Building Code/s and Life Safety Code **if** installed according to Code..

<http://publicecodes.cyberregs.com/icod/ifc/2012/index.htm>

Utility Supply Code

Contractors Material & Test Certificate for **U**nder ground Piping. Form 2K

Contractors Material & Test Certificate for **A**bove ground Piping. Form 2J

Ansul - R-102 UL300 MANUAL Rev 10 - (143 Pages)

UL Standard 1254 & UL Standard 300

Fire Suppression Services Inc. Bid, Contract documents, & Terms & Conditions

**Credits**

Bill Gubler, Tek Purser, Heath Dangerfield. Tim Strickland, BJ Mills, Zachary Hagblom.