

January 1997

## **PLAN SUBMITTAL REQUIREMENTS FOR SPRAY BOOTHS AND SPRAYING ROOMS EXTINGUISHING SYSTEMS**

### **1.0 PERMIT**

- 1.1 After receipt of a Building Permit from the City of San Jose Building Department, submit a completed permit application and a minimum of three sets of shop-quality plans and calculations for the proposed system(s) to the San Jose Fire Department's Bureau of Fire Prevention. The Bureau of Fire Prevention is located at Four North Second Street, Suite 1100, San Jose, California. Submit sufficient copies of drawings so the Fire Department may retain one set.
- 1.2 Normal review time for plans is approximately one month unless the contractor contacts our plan reviewer for an appointment. With an appointment the contractor can apply in person for an over the counter review. Over the counter reviews can usually be arranged within one week of contact. Plans will be disapproved if the criteria stated herein is not followed and depicted in the submittal.
- 1.3 Equipment and piping shall not be installed prior to approval of plans and issuance of permits.
- 1.4 The permit card and a stamped set of plans must be kept at the project site until the permit is finalized and shall remain in the possession of the owner.
- 1.5 If the last carbon copy page of the permit application is not legible, the application will not be accepted.
- 1.6 All plan check and permit fees will be collected when plans are submitted.
- 1.7 Permits are required for any alteration to or addition of a life safety system.
- 1.8 All installing contractors shall have a valid Workers' Compensation certificate and indicate the certificate number on the permit application prior to issuance of an installation permit.
- 1.9 All installing contractors shall have a valid City of San Jose Business License.

## **2.0 PLAN REVIEW**

2.1 The drawings must include the following:

- Project name, Street address (including suite or space number), City, State, Zip Code;
- Contractor's name, telephone number, address, California Contractor's and/or P.E. license, address and telephone number;
- Owner's name, address and telephone number;
- Fully dimensioned plans;
- Building layout, including booth or room location, clearances from walls, distance from exits and other appliances, and the percentage of the building;
- Booth or Room dimensions;
- Type of construction materials;
- Type and location of baffles;
- Type and location of deflectors;
- Type and location of light fixtures;
- Type and location of electrical equipment;
- Size and location of exit doors;
- Sources of ignition;
- Type and classification of coatings being used;
- Air velocity and ventilation requirements;
- Type and location of filters;
- Exhaust duct and appliance dimensions, along with the interface of the fire extinguishing system;
- Interlock and shut-off devices and their listing type;
- A narrative system description with a complete summary of the fire extinguishing system's operations;
- The system operating sequence of events;
- Type and size of fire extinguishing systems;
- Piping (size and length);
- Nozzles (type and location);
- Agent storage container (type and size);
- Manual actuation device and related cable installation;
- Provide pipe length equivalency calculations (along with the maximum and minimum lengths allowed);
- Provide the actual and maximum vertical rise allowed;
- Provide flow point calculations;
- Point of compass;
- A graphical representation of the scale. Scale shall be suitable to provide legible drawings;
- If a fire sprinkler system is provided, see applicable handout for submittal requirements;

**PLAN REVIEW** (Continued)

2.2 The plans shall be wet stamped and signed by the designer of record (installing contractor). The designer's name shall be clearly printed in the plans (no pseudonyms, acronyms, or aliases). Installation work shall be done by licensed, fully experienced, and responsible persons.

2.3 The designer of record is responsible for the entire system being worked on.

2.4 All equipment and devices shall be noted on the plans and shall be listed by a nationally recognized testing agency.

**NOTE:** The San Jose Fire Department reserves the right to disallow any listed product due to past performance.

2.5 A legend shall be provided and the symbols used shall match the legend. Strike out any "typical" symbols and/or details which do not pertain.

2.6 Plans and all revisions to the plans shall be dated. If utilizing an existing drawing or a portion of a drawing, the area of work shall be highlighted and clouded with an appropriate revision symbol (Delta). Provide a revision list with symbol, date, description and initials.

2.7 A key plan of the building and/or complex indicating the street location and the area of work shall be provided. If the work to be performed is a revision to a previous submittal, the area of work shall be revised to indicate the area of work for the current submittal.

2.8 Branch line piping limitations shall be indicated showing compliance with manufacturer's design data. Reference design data by Chapter, page, and revision on plans and provide data sheet with submittal.

2.9 All power and fuel shall be shut down if located within the protected area regardless of what the power or fuel source is located there for. Show all mechanical and/or electrical interrupts.

2.10 All systems shall be provided with clear directions.

2.11 One set of manufacturer's product data cut sheets shall be submitted with the application for each submittal. All information not pertinent to the proposed project shall be "struck out" of the cut sheets. As a minimum, the following cut sheets are required for all gaseous and chemical extinguishing systems:

- Nozzle coverage and placement;
- Cylinder sizing;

- Piping limitations;
- Detector requirements;
- Multiple cylinder installation (if applicable).

### **PLAN REVIEW** (Continued)

A duplicate set of cut sheets shall be provided to the system's owner, by the installing contractor, upon completion of installation.

- 2.12 Use the same terminology as in the design manual.
- 2.13 If technical expertise is unavailable within the Fire Department because of new technology, process, products, facilities, materials and uses attending the design, operation or use of a building or premises, the Fire Department may require the applicant to provide, without charge to the Fire Department, a technical opinion and report, or plan review. The opinion and report or plan review shall be prepared by a qualified engineer, specialist, laboratory, or fire-safety specialty organization acceptable to the Fire Department and the applicant and shall analyze the design, operation or use of the building or premises as it relates to required codes and ordinances.

### **3.0 DESIGN**

- 3.1 The installation shall conform to NFPA 12, 17, 30, 33, 70, 72, 2001 and/or UFC Article 45. The installation shall be Underwriters' Laboratory listed for its application and meet the requirements of the system's manufacturer. The installation shall also meet the approval of the San Jose Fire Department.
- 3.2 Spray booths, spray rooms, and similar enclosures, that are used alternately for spray application of flammable and combustible materials and for drying, curing, or fusion of the applied materials, shall also comply with all applicable requirements of NFPA 86 and UFC Article 62, when actually being used for drying, curing, or fusion.
- 3.3 All Spray Booths and Spraying Rooms shall be protected by an automatic fire protection system.
- 3.4 If the system is of a Carbon Dioxide, Dry Chemical, or Clean Air type, it shall be capable of automatic and manual activation with a remote activation device placed along the route of egress.
- 3.5 Carbon Dioxide systems shall not be used in inhabited areas.
- 3.6 If the building is equipped with a fire alarm system, the activation of the extinguishing system shall initiate an alarm with a separate zone and transmit the alarm to an approved central station.

- 3.7 Audible and visual alarms for system activation or trouble conditions shall be provided.

**DESIGN** (Continued)

- 3.8 The system shall be provided with mechanical means of activation which does not require electrical power unless an approved emergency power system is provided.
- 3.8.1 If an emergency power system is provided, voltage drop and battery backup calculations shall be submitted with this permit application.
- 3.9 Nozzle dust covers shall be provided. The caps are to be capable of being blown off by the pressure of the system discharge.
- 3.10 Each appliance shall be provided with detection as directed by the system's manufacturer.
- 3.11 Due to accumulation of coating material and/or ordinary combustibles being coated, the Dry Chemical Agent shall be suitable for Hazard Class **B**, **C**, and **A**.
- 3.12 An adequate supply of approved portable fire extinguishers shall be installed near all spray areas and mixing rooms.
- 3.13 Automatic sprinkler systems shall be designed to accommodate an Extra Hazard Group 2 occupancy when located within the spraying area as directed by NFPA 33.
- 3.14 Automatic sprinklers in spray areas, including the interior of spray booths and exhaust ducts, shall be wet pipe, preaction, or deluge systems. Dry pipe systems shall not be used.
- 3.15 Automatic sprinklers in spray booths and exhaust ducts shall be of the lowest practical temperature rating. Sprinklers outside the booth at the ceiling level shall be high-temperature (286°F) rated.
- 3.16 The sprinklers for each spray area and mixing room shall be controlled by a separate, accessible, listed, indicating valve.
- 3.17 Sprinklers protecting spray areas and mixing rooms shall be protected against over spray residue so that they will operate quickly in the event of fire. If covered, polyethylene or cellophane bags having a thickness of 0.003in. or less, or thin paper bags shall be used. Coverings shall be replaced frequently so that heavy deposits of residue do not accumulate. Sprinklers that have been

painted or coated, except by the sprinkler manufacturer, shall be replaced with new listed sprinklers having the same characteristics.

- 3.18 All pipe shall be schedule 40 black, galvanized, chrome plated, or stainless steel.

### **DESIGN** (Continued)

- 3.19 Standard weight malleable, galvanized, chrome plated, stainless steel fittings shall be used.
- 3.20 All pipe ends shall be thoroughly reamed after cutting and all oil and chips shall be removed. Dry air or nitrogen shall be blown through the piping to remove chips and other debris prior to installation of the nozzles.
- 3.21 No joint sealant shall be used in dry chemical system piping. Joints for such systems shall be "made-up" dry.
- 3.22 All piping shall be securely fastened by means of pipe hangers as described by NFPA 13.
- 3.23 A union shall be installed in all dry chemical system discharge piping conveniently close to the cylinder valve to permit disconnection and removal for inspection and service.
- 3.24 The system shall include permanent-type nameplates and condensed instruction plates to identify the system and instruct in its use under emergency conditions.

### **4.0 CERTIFICATION**

- 4.1 Installation of systems shall be made only by persons trained and certified to install the specific systems being provided.
- 4.2 The installer shall certify to the Fire Department, through a letter on company letterhead, that the installation is in complete agreement with the terms of the listing and the manufacturer's instructions and/or approved design.
- 4.3 The installer shall further certify to the Fire Department, through a letter on company letterhead and acceptable at the time of final inspection, that the installation has been pretested and, having passed the test, is now fully functional. The inspection is not, however, waived with the presentation of the letter.

## **5.0 INSPECTION/TESTING**

- 5.1 Field inspections may be scheduled at the counter after approval of the permit submittal. For inspection scheduling or for general information, please call (408) 277-5357. You will not be able to schedule an inspection until a permit number has been issued. **Allow at least two weeks notice when requesting inspections.**

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### **INSPECTION/TESTING** (Continued)

- 5.2 Approval test(s) shall include:

- The installation contractor shall request and be present at all tests;
- All other contractors associated with this work ( i.e.: Alarm sub.) shall be present;
- The labeling of devices with proper designations and instructions shall be checked
- Interlocks shall activate as denoted in the sequence of events.
- Strainer assemblies shall be disassembled and proven to be clean and clear.

In addition, for chemical and gaseous extinguishing systems:

- A discharge of expellant gas through the piping and nozzles;
- Observations shall be made for serious gas leakage and for continuity of piping with free, unobstructed flow;
- Observations shall be made of the flow of expellant gas through all nozzles;
- Piping shall not be hydrostatically tested;
- Where pressure testing is required, it shall be by means of a dry gas;

In addition, fire sprinkler systems shall be tested in accordance with the requirements of NFPA 13.

- 5.3 The Fire Department reserves the option to require a discharge test of chemical, gaseous, or deluge systems, requiring full discharge of the extinguishing agent. The test may be required to show the discharge pattern and/or discharge into suitable receptacles for weighing the results prior to acceptance.
- 5.4 Extinguishing systems shall be serviced at least every six months or after any activation of the system. Inspection shall be by qualified individuals and a certificate of inspection shall be forwarded to the San Jose Fire Department upon completion. Fusible links or automatic sprinkler heads shall be replaced at least annually, and other protection devices shall be serviced or replaced in accordance with the manufacturer's instructions.

- 5.5 Instructions for manually operating the fire extinguishing systems shall be posted at a conspicuous location near the extinguishing system controls. Hoods, particle removal devices, fans, ducts, and other appurtenances shall be cleaned at frequent intervals.

## **6.0 OWNER'S MANUAL**

The owner shall be provided with a copy of the manufacturer's listed installation and maintenance manual or listed owner's manual at the time of the final inspection. The manual shall contain, as a minimum, the following additional information:

- A copy of the "finaled" permit card;
- As built drawing(s);
- Copies of correspondence with the Fire Department;
- Copies of certification;
- The duplicate set of cut sheets as required by item # 2.12 above.

## **7.0 DOCUMENT REVISIONS**

This document is subject to revisions. For general information and to be sure that you are reading the most current document, please call (408) 277-5357, and ask for the current version date.

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