

APPENDIX B

Business, Factory, Mercantile, Storage, and Utility Occupancies

B.1 HOW TO USE THIS APPENDIX

This appendix contains information related to non-State Fire Marshal occupancies. This includes manufacturing facilities, storage and other ancillary buildings, and retail and office uses.

In addition to the generic information listed in the “Requirements” section in Guideline E-01, the information in the “Plan Requirements” section of this appendix must be provided on your plan.

B.2 SCOPE

B.2.1 REVIEW OF B, F, M, S, AND U OCCUPANCIES: As B, F, M, S, and U occupancies are not SFM regulated occupancies, the OCFA typically does not review architectural plans for these occupancy classifications except when specifically requested by the Building Official. However, the processes, operations, equipment, materials, or products within these occupancies are often regulated by the Fire Code, and many U occupancies are physically and functionally interconnected to apartments, which are regulated by the SFM. By reviewing the checklist below, you should be able to determine if a submittal of architectural plans is necessary or whether submittal of other plan types (noted in parentheses) is required in addition to or instead of an architectural plan.

B.2.1.1 B occupancy: general business administration or professional services such as a bank, salon, veterinary clinic, data processing, doctor/dentist office, car dealership/showroom, research and testing lab, dry cleaner (pick-up/drop off only, no cleaning done on-site), self-service laundry, etc.; small restaurants, adult education or training facilities, and similar gathering spaces with an occupant load of less than 50 occupants or under 750 sq.ft.

- For projects with commercial kitchens, does the project either:
 - 1) include the installation, modification, replacement, or relocation of equipment for cooking food that contains or is prepared using grease, fat, oil, or shortening, or
 - 2) involve modification of the hood or odor/vapor extraction system serving this equipment?

If yes, submit plans for a hood and duct fire extinguishing system (PR335).

- For high-rises (>75 feet from the lowest level of building access to the highest occupiable floor), buildings with an atrium connecting 3+ stories, and other structures with a smoke control/management system, will the proposed work affect the performance of the system? Submit architectural plans (PR224 or

PR228) along with a report prepared by the engineer of record or other qualified professional familiar with the smoke control system describing the impact of the project and proposed method of mitigation.

- Does your project involve any of the following:
- 1) an eating/drinking establishment with either 50+ occupants, excluding kitchen staff, or 750+ square feet in the dining, ordering, and waiting areas, including exterior spaces if those customers must pass back through the building to leave the facility
 - 2) a conference room, break/lunch room, or similar gathering area over 750 square feet
 - 3) a training room or classroom with tables/desks and chairs for adults over 1000 square feet
 - 4) a training room or classroom with chairs in rows, sanctuary, multipurpose room, or similar gathering area over 350 square feet

It contains an A occupancy; submit an architectural plan (PR200 through PR208).

- Is your facility a private school, tutoring center, or similar supplemental educational facility with more than 6 children in any space at the same time? It may be an E occupancy. Consult Attachment E.1 in Appendix E and verify occupancy with the Building Department, and submit an architectural plan to the OCFA if it is classified as an E occupancy (PR212).

B.2.1.2 F occupancy: fabrication, manufacturing, assembling, packaging, cleaning (including dry-cleaning facilities where laundry is done on-site), repair of equipment other than repair of motor vehicles, or processing of goods or materials.

- Baking or use of powdered ingredients, sanding, grinding or other processes that produce fine combustible dust (PR360)
- Chipping, composting, or recycling operation (PR315; a PR145 may also be required)
- Dipping, coating, or spraying of flammable finishes (PR345)
- Dry cleaning performed on-site (PR355)
- Fabrication or use of plastics or other combustible solids (matches, charcoal, semi-conductors, explosives/fireworks, combustible metals) or tire rebuilding (PR315)
- Liquefied petroleum gas storage or use, including LPG-fueled vehicles (PR315)
- Ovens (industrial or commercial production ovens, dryers, autoclaves and similar equipment or commercial ovens in a retail restaurant/bakery kitchen serving the public) (PR360)
- Refrigeration systems (Complete the refrigeration worksheet in Guideline G-02)
- Storage, production, or use of baled cotton or combustible fibers (e.g., hay, jute, moss, straw, waste paper or similar materials) in excess of 100 cubic feet (PR315)

- Tanks for cryogenic or flammable/combustible liquids (PR300 or PR305)
- Welding, brazing, soldering, or other hot work (PR315)
- Woodworking or lumber yard (PR360; a PR145 may also be required)

B.2.1.3 M occupancy: display and sale of merchandise or products (e.g., department store, drug store/pharmacy, market, gas station, retail/wholesale store, sales room).

- Does your project include installation or modification of a fuel tank or fuel dispensing station (gasoline, compressed natural gas, hydrogen, or liquefied petroleum gas)? Submit a tank plan (PR300 or PR305, as appropriate).

B.2.1.4 S occupancy: storage of materials or products over 100 square feet in area; a parking garage or vehicle maintenance or repair facility (e.g., warehouse, stockroom, distribution center, auto body, or car service center).

- Does your operation include the use of liquefied petroleum gas or compressed natural gas fueled vehicles (e.g., forklifts, loaders)? Submit a hazardous materials process/storage plan (PR315).
- Does your project include a parking garage >3000 square feet within, attached to, or beneath a SFM-regulated building such as an apartment building, hotel, restaurant, or mall? Include plans for the garage (PR224 or PR228) with your architectural plans (PR200 through PR280) for the SFM-regulated occupancy.
- Is your project a motor vehicle or aircraft service/repair facility? Submit an architectural plan (PR236 or PR240).

B.2.1.5 U occupancy: barn, stable, shed, greenhouse, or other agricultural structure; a carport or garage for private or pleasure-type vehicles no more than 3,000 square feet in area.

- Does this project have a carport or garage attached to or within 10 feet of an R-1, R-2, or R-4 multi-family residential occupancy? Include plans for the carport/garage area with the architectural plan submitted to the OCFA for the R occupancy (PR264 through PR280).

B.2.1.6 All Occupancies

- Is another regulatory agency or official requiring submittal of your architectural plan to the OCFA? Submit an architectural plan along with a completed OCFA referral form or similar documentation prepared by the regulatory agent indicating the scope of review requested (PR 224 or PR228).
- With the exception of limited quantities of typical janitorial supplies used for general cleaning and upkeep purposes, does this facility produce, store, dispense, display, or otherwise utilize chemicals or other hazardous materials (e.g., oil/lubricants, paint, epoxies/adhesives or solvents, acids, alcohol/industrial disinfectants, oxygen/acetylene/nitrogen or other compressed gasses, etc.)? Submit a hazmat compliance plan and chemical classification (PR315 and PR320 through PR328).

- Does the facility have a generator containing 60 or more gallons of fuel? Submit a tank plan (PR300).
- Does the project include an uninterrupted power supply (UPS) or other energy storage system (ESS) with more than 3 kWh capacity? Refer to CFC Table 1207.1.1 and submit a battery plan if the capacity exceeds the listed threshold for the type of battery/technology you have. (PR375).
- Does the project include the addition of or modification to industrial or medical gas storage or distribution piping (not including compressed air systems of a scale as would be expected at a small vehicle repair shop)? Submit a gas system plan (PR350).
- Does your project include installation or modification of refrigerated equipment (e.g., cooling plant; large or multiple refrigerated grocery cases, refrigerated warehouses, or walk-in coolers)? Complete the refrigeration worksheet in Guideline G-02.
- Will the facility include storage, stock, or sales areas in excess of 500 square feet where the top of items stored or displayed will be 12 feet or higher (or 6 feet for more hazardous commodities such as plastics, tires, flammable/combustible liquids, etc.)? Submit a high-piled storage plan (PR330).
- Does your project involve the installation of a photovoltaic (PV) system on a one or 2-family residential dwelling? Submit a PV plan if required by the city Building Official (PR363).
- Does your project involve the installation of a photovoltaic (PV) system on a commercial building or on a residential building with 3 or more dwelling units? Submit a PV plan (PR363).
- Is the building a new high-rise (>75 feet from the lowest level of building access to the highest occupiable floor)? Submit an architectural plan (PR285).
- Does your project involve construction of or modification to the common area of an enclosed mall (not including individual storefronts adjacent to the common area)? Submit an architectural plan (PR200 through PR228).
- Is your building in whole or in part a tent, canopy, inflatable or other membrane structure? Submit an architectural plan (PR224 or PR228).
- Does the project involve the installation or modification of electronic locking devices (e.g., delayed egress, controlled egress, elevator lobby locks, remote access control locks) on doors that may obstruct or inhibit passage *in the direction of exit travel* from the room, suite, or building to the outside? Submit an alarm plan (PR500 through PR520) and/or an architectural plan (PR224 through PR228).
- Does the project involve the installation or modification of card readers, key pads or similar security devices on doors that require the use of a card, pass code, or similar knowledge or key to allow passage *in the direction of exit travel* to the outside, and/or will revert to fail-secure mode and lock upon power failure or activation of an alarm? Submit an architectural and alarm plan (PR224 or PR228, and PR500 through PR520).

- Is your building or tenant space currently protected by a fire sprinkler system and/or by an alarm system (other than a basic sprinkler water flow monitoring system)? Consult with a C-16 licensed fire sprinkler or a C-10 licensed fire alarm contractor to evaluate whether the system will be affected by the proposed project and submit necessary fire protection system plans prior to modification (PR430 through PR440, PR500 through PR520).

B.3 PLAN REQUIREMENTS

B.3.1 F OCCUPANCIES: Factories, Manufacturing and Processing Facilities – If an architectural plan is required, include the following on the plan in addition to the standard information in Guideline E-01:

B.3.1.1 Letter of Intended Use – The owner or occupant shall provide a letter describing in detail the types of processes and materials that will be used at the facility. Include information regarding the presence of hazardous materials (including MSDS sheets), the types of machinery used (lathes, sanders, saws, injection molding equipment, etc.), any hot work that will take place (brazing, soldering, welding, cutting, etc.), and any special processes used (dipping, spraying, painting, coating, plating, etching, patination, inking/screen printing, drying/baking, etc.). If the project is a tenant improvement by the current occupant of the facility, describe in the letter how the change in the building will affect the items above, if at all.

B.3.1.2 Chemical Classification – If a chemical classification is required, it shall be in the OCFA standard format; use OCFA Guideline G-06 when preparing the chemical classification documentation. Refer to Guideline G-05 for specifications for hazardous materials signage that is required to be posted whenever quantities of any hazard classification exceeds the permit threshold listed in CFC Division II Section 105

B.3.1.3 Hot Work – Indicate if any welding or other hot work will be performed at the facility. If so, provide the following notes on the plan:

- a. Persons engaged in hot work shall be able to demonstrate a working knowledge of the provisions of CFC Chapter 35.
- b. Where the hot work area is accessible to persons other than the one performing the activity, sign(s) shall be posted in conspicuous locations warning others before they enter the area: “CAUTION – HOT WORK IN PROGRESS – STAY CLEAR”.
- c. Hot work areas shall not contain combustibles or shall be provided with appropriate shielding to prevent sparks, slag, or heat from igniting exposed combustibles.
- d. Fixed hot work areas shall be provided with non-combustible partitions to segregate the hot work area from other areas in the building.
- e. Floors shall be of a non-combustible material.
- f. Hot work shall not be performed on containers or equipment that contains or has contained flammable liquids, gasses, or solids until the containers/equipment have been thoroughly cleaned or purged.

- g. In sprinklered buildings or areas, hot work shall not be performed when the sprinkler system is shut off. Where hot work is performed in close proximity to sprinkler heads, they shall be individually shielded while the work is performed.
- h. A minimum of one portable 2-A:20-B:C extinguisher shall be located within 30 feet of the hot work area.
- i. Oxygen, fuel gas cylinders, and acetylene generators shall be located away from the hot work area to prevent such equipment from being heated by radiation, sparks or slag, or misdirection of the torch flame.
- j. Torch valve shall be closed and the gas supply to the torch completely shut off when gas welding or cutting operations are discontinued for a period of 1 hour or more.
- k. The frame or case of electric hot work machines, except internal combustion engine driven machines, shall be adequately grounded.
- l. A switch or circuit breaker installed in accordance with the CEC shall be provided so that fixed electric welder and control equipment can be disconnected from the supply circuit.
- m. A pre-hot work check shall be performed prior to work to ensure that all equipment is safe and hazards are addressed. The check shall include, at a minimum:
 - (a) Equipment to be used is in satisfactory operating condition and in good repair
 - (b) Hot work area is clear of combustibles or combustibles are protected
 - (c) Exposed construction is of non-combustible material or, if combustible, protected
 - (d) Openings between hot work and other areas are protected
 - (e) Floors are kept clean
 - (f) Actions have been taken to prevent accidental activation of sprinkler, detection, and alarm systems
 - (g) Fire extinguishers are operable and available
- n. When appropriate due to the hazards present or work performed, a fire watch shall be provided for a minimum of 30 minutes after conclusion of hot work activities.

B.3.1.4 Painting or Coating – Indicate if any painting or coating work utilizing flammable or combustible liquids will be performed at the facility. If so, indicate whether the work will be performed in a spray booth/spray room or a limited spraying space. If a spray booth/room is present, submit a spray booth plan (PR345) under a separate service request number. If a limited spray area is present, provide the following notes on the architectural plan:

- a. The aggregate surface area to be sprayed shall not exceed 9 square feet. CFC 2404.9.1
- b. Spraying operations shall not be of a continuous nature. CFC 2404.9.2
- c. Positive mechanical ventilation providing a minimum of 6 air changes per hour shall be installed. Such systems shall meet the requirements of the fire code for flammable vapor areas. Explosion venting is not required. CFC 2404.9.3

- d. Electrical wiring within 10 feet of the floor and 20 feet horizontally of the limited spraying space shall be designed for Class I, Division 2 locations in accordance with the CEC. CFC 2404.9.4.

B.3.1.5 Fixed-piping gas distribution systems – piping transporting hazardous materials or associated with welding or gasses other than compressed air shall be reviewed under fee code PR350.

B.3.2 M OCCUPANCIES: Mercantile Occupancies

B.3.2.1 Gas Stations – While submittal of a fire master plan or tank plan may be required for gas stations or other vehicle refueling facilities, the OCFA does not review *architectural* plans unless the facility also repairs or services vehicles; see section B.3.3.1 below.

B.3.3 S OCCUPANCIES: Storage; Vehicle Repair

B.3.3.1 Repair Garages – If a facility is used for motor vehicle, marine vehicle, or aircraft repair or service, an architectural plan is required to be submitted to the OCFA for review of these facilities as they and the materials and operations taking place within them are regulated by the CFC. Provide the following information on the plan.

B.3.3.1.1 Letter of Intended Use – The owner or occupant shall provide a letter describing in detail the types of operation at the facility (parts exchange, oil change, body work/repair, painting, etc.). Include information regarding the presence of hazardous materials (epoxies, solvents, oil, gasoline, etc.), the types of machinery used (sanders, grinders, etc.), any hot work that will take place (brazing, soldering, welding, cutting, etc.), and any special processes used (dipping, spraying, painting, coating, plating, etching, drying, etc.). If the project is a tenant improvement by the current occupant of the facility, describe in the letter how the change in the building will affect the items above, if at all.

B.3.3.1.2 Chemical Classification – A chemical classification shall accompany the architectural plans in order to verify that the facility is not an H occupancy. All chemical classifications shall be in the OCFA standard format; use OCFA Guideline G-0-4 when preparing the chemical classification documentation.

B.3.3.1.2 Plan information – Show the location of all hazardous materials and activities warning signs; no smoking signs; hazardous and flammable materials cabinets, tanks, and other containers; and the location of all equipment utilizing hazardous materials on the plan.

B.3.3.1.3 General Notes – Provide the following notes on the plan for all vehicle service and repair facilities:

- a. Cleaning of parts shall be conducted in listed and approved parts-cleaning machines in accordance with CFC Chapter 57.

- b. Waste oil, motor oil, and other Class IIIB liquids shall be stored in approved tanks or containers.
- c. Self-closing metal cans shall be used for oily waste.
- d. Floor drains shall drain to approved oil separators in accordance with the CPC. Contents shall be collected at sufficient intervals to prevent oil from entering the sewage system.
- e. Sources of ignition shall not be located within 18 inches of the floor.
- f. Smoking shall not be permitted within 25 feet of a repair garage or flammable or combustible liquids storage areas.
- g. Pits and below-grade work areas shall be provided with ventilation at a rate of 1-1/2 cubic feet per minute per square foot of floor area where Class I liquids or LP gas are present.
- h. Fuel shut-off valves shall be closed prior to repairing the fuel system on vehicles using gaseous fuels.

B.3.3.1.4 Servicing Lighter-than-air Fuel Vehicles – Indicate on the plan if the facility will service vehicles fueled by lighter-than-air fuels (e.g., CNG, LNG, hydrogen). If so, the provisions of CFC 2311.5 through 2311.8.2 shall apply. If the facility will service vehicles fueled by hydrogen, the provisions of 2309.6 will also apply.

B.3.3.1.5 Hot Work – Indicate if any welding or other hot work will be performed at the facility. If so, provide the following notes on the plan:

- a. Persons engaged in hot work shall be able to demonstrate a working knowledge of the provisions of CFC Chapter 35.
- b. Where the hot work area is accessible to persons other than the one performing the activity, sign(s) shall be posted in conspicuous locations warning others before they enter the area: “CAUTION – HOT WORK IN PROGRESS – STAY CLEAR”.
- c. Hot work areas shall not contain combustibles or shall be provided with appropriate shielding to prevent sparks, slag, or heat from igniting exposed combustibles.
- d. Fixed hot work areas shall be provided with non-combustible partitions to segregate the hot work area from other areas in the building.
- e. Floors shall be of a non-combustible material.
- f. Hot work shall not be performed on containers or equipment that contains or has contained flammable liquids, gasses, or solids until the containers/equipment have been thoroughly cleaned or purged.
- g. In sprinklered buildings or areas, hot work shall not be performed when the sprinkler system is shut off. Where hot work is performed in close proximity to sprinkler heads, they shall be individually shielded while the work is performed.
- h. A minimum of one portable 2-A:20-B:C extinguisher shall be located within 30 feet of the hot work area.

- i. Oxygen, fuel gas cylinders, and acetylene generators shall be located away from the hot work area to prevent such equipment from being heated by radiation, sparks or slag, or misdirection of the torch flame.
- j. Torch valve shall be closed and the gas supply to the torch completely shut off when gas welding or cutting operations are discontinued for a period of 1 hour or more.
- k. The frame or case of electric hot work machines, except internal combustion engine driven machines, shall be adequately grounded.
- l. A switch or circuit breaker installed in accordance with the CEC shall be provided so that fixed electric welder and control equipment can be disconnected from the supply circuit.
- m. A pre-hot work check shall be performed prior to work to ensure that all equipment is safe and hazards are addressed. The check shall include, at a minimum:
 - (a) Equipment to be used is in satisfactory operating condition and in good repair
 - (b) Hot work area is clear of combustibles or combustibles are protected
 - (c) Exposed construction is of non-combustible material or, if combustible, protected
 - (d) Openings between hot work and other areas are protected
 - (e) Floors are kept clean
 - (f) Actions have been taken to prevent accidental activation of sprinkler, detection, and alarm systems
 - (g) Fire extinguishers are operable and available
- n. When appropriate due to the hazards present or work performed, a fire watch shall be provided for a minimum of 30 minutes after conclusion of hot work activities.

B.3.3.1.6 Painting or Coating – Indicate if any painting or coating work utilizing flammable or combustible liquids will be performed at the facility. If so, indicate whether the work will be performed in a spray booth/spray room or a limited spraying space. If a spray booth/room is present, submit a spray booth plan (PR345) under a separate service request number. If a limited spray area is present, provide the following notes on the architectural plan:

- a. The aggregate surface area to be sprayed shall not exceed 9 square feet. CFC 2404.9.1
- b. Spraying operations shall not be of a continuous nature. CFC 2404.9.2
- c. Positive mechanical ventilation providing a minimum of 6 air changes per hour shall be installed. Such systems shall meet the requirements of the fire code for flammable vapor areas. Explosion venting is not required. CFC 2404.9.3
- d. Electrical wiring within 10 feet of the floor and 20 feet horizontally of the limited spraying space shall be designed for Class I, Division 2 locations in accordance with the CEC. CFC 2404.9.4.

B.3.3.1.7 Fixed-piping gas distribution systems – piping transporting hazardous materials or associated with welding or gasses other than compressed air shall be reviewed under fee code PR350.