



COMMERCIAL BUILDING GENERAL REQUIREMENTS (IN UNINCORPORATED AREAS OF STANISLAUS COUNTY)

The purpose of this document is to provide information about general Fire Code requirements for new commercial buildings constructed within the unincorporated areas of Stanislaus County. It is intended to be general information only and may not address every situation that could arise. Contact Stanislaus County Fire Prevention Bureau at 209-552-3700 if you have questions or need additional information.

Fire Fees

Two types of fees are collected during development. The first are Fire Protection Facility Fees that are collected to finance fire protection facilities and to assure that new development pays its fair share of facility costs. These fees differ based on the fire district that the project is located in (not all fire districts have Fire Protection Facility Fees) and the size and type of building being constructed. These fees are collected at the time that the Building Permit is issued. The Building permit department passes the collected fees on to the fire districts.

The second fee is for providing required services directly related to the project. Many projects require plan checks and inspections by the Stanislaus County Fire Prevention Bureau. Fees for these services are based on the costs for providing the service. Fire Marshal plan check fees are \$110.00 per hour. The fee for inspecting new projects is based on the size and occupancy classification of the building. These fees are also collected at the time that the building permit is issued.

Separate plan submittals are required for private water mains, automatic fire sprinkler systems, fire alarm systems, and other special fire suppression systems. Plan check fees for these systems are \$110.00 per hour. Inspection fees are based on the type and size of the system or project. These systems require separate pdf plan submittals directly to fireprevention@stancounty.com for more information go to <http://www.stanoes.com/fpb-process.shtm>. A \$110.00 deposit is required at the time that plans are submitted with the full balance due at the time that approved plans are picked up.

Access Roadways

All newly constructed buildings are required to have fire access roadways within 150' of all portions of the building. However, this distance may be increased if the building is equipped with automatic fire sprinklers or some other approved means of fire protection or if no more than two R-3 or U occupancies are served. Access roadways must meet the following criteria:

- Must have an unobstructed width of at least 20'.
- Must have an unobstructed height of at least 13' 6".
- Must be capable of supporting vehicles weighing at least 75,000 pounds in all weather.
- May not exceed 10% grade unless approved by the Fire Chief.
- Dead end roadways longer than 750' are not permitted unless approved by the Fire Chief.
- Dead end roadways longer than 150' must have approved turnarounds. The minimum turning radius for a turnaround is 50' outside and 30' inside measured from the center of the roadway.

Must include KNOX key boxes or other approved means for entering gated areas. KNOX key box applications must be obtained from your local fire department. Or check online at knoxbox.com for the electronic application and e-approval.

Building Identification

Address and building numbers shall be visible from the street or road fronting the building and be at least 4" high with a stroke of .5 inch (1/2").

Fire Flow Requirements for areas served by a municipal water system

Use the following table to calculate minimum required fire flow and flow duration for structures located in areas served by municipal water systems.

MINIMUM REQUIRED FIRE FLOW AND FLOW DURATION						
Type IA and IB	Type IIA and IIIA	Type IV and V-A	Type IIB and IIIB	Type V-B	Fire Flow (gpm)	Duration (Hours)
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	2
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	2
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	2
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	2
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	2
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	3

Refer to the California Fire Code for larger structures.

This flow may be reduced up to 75% if the building has an approved automatic fire sprinkler system, however the required flow shall not be less than 1,500 gpm.

Fire Hydrants shall meet the following requirements:

NUMBER AND DISTRIBUTION OF FIRE HYDRANTS			
Fire Flow Requirement (gpm)	Minimum number of Hydrants	Average Spacing Between Hydrants	Max Distance From Street to Hydrant
1,750 or less	1	500	250
1,751 - 2,250	2	450	225
2,251 - 2,750	3	450	225
2,751 - 3,250	3	400	225
3,251 - 4,000	4	350	210

Refer the California Fire Code for buildings with larger fire flows.

On-Site Water Requirements for areas not served by a municipal water system

An approved on-site water supply for fire suppression is required for many new projects located in rural areas where municipal water systems do not exist. This water supply must be accessible from an approved access roadway that is at least 20' wide with a vertical clearance of 13'6". On-site water supplies may include tanks, cisterns, swimming pools, and ponds but must be accessible and available year around regardless of weather or drought conditions. A dry fire hydrant or other approved access must be located not less than 100' from the building being protected. The maximum distance will be determined by the local fire chief. Some structures are exempt from providing on-site water storage.

Because of the expense that may be associated with providing an approved water supply it is strongly recommended that the proposed water supply be approved by the Stanislaus County Fire Prevention Bureau and local fire department prior to submitting plans. Some factors may be increased or decreased based on the specific site and use.

National Fire Protection Association (NFPA) Standard #1142 Chapters 4 and 5 are used to calculate the amount of on-site water supply that is required for structures where no municipal water supply is available. The following formula is used:

$$\text{GALLONS OF ON-SITE WATER NEEDED} = \text{Volume of structure} \div \text{Occupancy Hazard Classification} \times \text{Construction Classification}$$

NOTE:

Volume of Structure = Total volume of structure in cubic feet

Occupancy Hazard Classification

- 3 for severe hazard uses such as cereal or flour mills, explosives storage, feed and grist mills, hay storage, saw mills, and wood storage.
- 4 for high hazard uses such as auditoriums, commercial barns and commercial stables, department stores, feed stores, freight terminals, paper and pulp mills and processing, full-service repair garages, retail stores, and warehouses.
- 5 for moderate hazard uses such as amusement occupancies, clothing manufacturing, cold storage warehouses, farm storage (corn cribs, dairy barns, equipment sheds, hatcheries), machine and metalworking shops, plant nurseries, restaurants, and unoccupied buildings.
- 6 for low hazard uses such as beverage manufacturing plants, brick manufacturing plants, canneries, cement plants, churches, dairy products manufacturing, gasoline and minor repair service stations, horse stables, offices, parking garages, slaughterhouses, and wineries.
- 7 for light hazard uses such as apartments, colleges and schools, dwellings, hospitals, hotels and motels, nursing and convalescent homes, offices, and prisons.

Construction Classification

- I Metal or non-combustible = .50
- II Metal or non-combustible = .75
- III Ordinary = 1.00
- IV Heavy timber = .75
- V Wood and wood frame = 1.50
- VB Single family dwelling = 1 (NFPA 1142 section 6.2.2)

For example, a Type II building measuring 100' long by 50' wide by 20' high used as a dairy barn would require 15,000 gallons of stored water (100 x 50 x 20 ÷ 5 x .75 = 15,000). This number may be increased or decreased depending upon other circumstances such as exposures (another structure) within 50 feet of proposed new structure, installation of sprinkler system.

Automatic Fire Sprinklers

Requirements vary. Refer to Structures Requiring Automatic Fire Sprinkler Systems handout.