

## 10. VEGETATION MANAGEMENT

### 10.1 Vegetation Clearance Around the Structure

The clearance of flammable vegetation around buildings has proven to be one of the most effective factors in surviving wildfire. It provides for defensible space, increased safety and working room for firefighters, reduced chance of direct flame contact, and reduced intensity of radiated heat from the approaching wildfire.

The 30-foot clearance should include:

- Well irrigated grass, which is an excellent firebreak;
- Removal of downed and woody litter;
- Choosing low-growing plants spaced apart so they do not touch;
- Not placing plants directly against the home as they act as a wick.

### 10.2 Vegetation Clearance 30-100' Plus

*30-100 feet of clearance may be required because of extra-hazardous conditions (PRC 4291).*

Within 30 feet of structure and beyond, up to 100 feet or more, provide a buffer from wildfire by thinning vegetation. Homes on slopes can be especially vulnerable. By limiting the vegetation, the home has a good chance to survive a wildfire. Get rid of ladder fuels by performing the following measures:

- Prune branches at least 15 feet up.
- Trees should be thinned so crowns do not touch.
- Break up continuous patches of brush. Leave a few scattered on the property for erosion control and aesthetics.
- Be sure to remove all dead brush, dead and down logs, and materials that could contribute to a “spotting bed,” a location where an ember could land and provide a fuel source to start a wildfire.



**Photograph 10.1.**  
**House Showing Defensible Space**

### **10.3 Community Fuel Breaks**

A fuel break is recommended around all dwellings for increased protection over and above that level of protection provided by clearance only ([PRC 4290](#)).

### **10.4 Characteristics of Fire Resistive Vegetation**

All plants will burn under extreme fire weather conditions such as drought. However, plants burn at different intensities and rates of consumption. Fire resistive plants burn with relatively low intensity, slow rates of spread, and with short flame lengths. The University of California Forest Products Laboratory has a listing of fire resistive vegetation available on their website, <http://www.prefire.ucfpl.ucop.edu/>. The following are characteristics of fire resistive vegetation:

- Growth with little or no accumulation of dead vegetation (either on the ground or standing upright)
- Non-resinous plants (willow, poplar or tulip trees)
- Low volume of total vegetation (for example, grass area as opposed to a forest of shrub-covered land)
- Plants with high live fuel moisture (plants that contain a large amount of water in comparison to their dry weight)
- Drought tolerant plants (deeply rooted plants with thick heavy leaves)

- Stands without ladder fuels (plants without small fine branches and limbs between the ground and the canopy of overtopping shrubs and trees)
- Plants requiring little maintenance (slow growing plants which, when maintained require little care)
- Plants with woody stems and branches that require prolonged heating to ignite.

## **11. FIREWISE CONSTRUCTION**

### **11.1 Roofs**

While inspecting the roof, consider the following:

- Free of leaves, needles, and other dead vegetation?
- Type, construction, condition, overhead wires?
- Height and condition of surrounding buildings (exposures)?
- Chimney screens and clearance?
- Sprinkler system-tanks, valves, and pressure?
- Drainage gutters clean?
- Dead wood removed from overhanging trees?

#### **11.1a Clean Roof Surfaces and Gutters**

Clean regularly to avoid accumulation of flammable materials ([PRC 4291](#)).



**Photograph 11.1.**  
**A Clean, Well-Maintained Class A Roof**

**11.1b Remove Limbs**

Remove the portion of any tree that extends within 10 feet of the outlet of any chimney or stovepipe (PRC 4291).

**11.1c Spark Arresters**

Provide and maintain a screen over the outlet of every chimney or stovepipe. The screen should be constructed of nonflammable material and have openings of not more than 1/2" (PRC 4291).



**Photograph 11.2.**  
**Chimney/Stovepipes with Spark Arresters**

### 11.1d Noncombustible Construction Material

The roof and the exterior structure of all dwellings should be constructed of noncombustible or fire resistant materials such as asphalt roofing shingles, tile or slate, brick or stone, aluminum, or sheet iron.



**Photograph 11.3.**  
**Noncombustible Roof**

### 11.1e Fire Retardant Chemicals

Fire retardant chemicals should be used to treat highly combustible materials such as wood siding, cedar shakes, and exterior wood paneling. These treatments should be reapplied per the manufacturer's instructions to maintain their effectiveness over time.

### 11.1f Fire Ratings for Roofs

Pursuant to [HSC 13132.7](#), fire retardant roofing is now required in the entire state of California for all new structures and all existing structures for any repair or replacement. Additionally, if 50% or more of a roof covering is replaced within any one-year period, the entire roof covering shall be replaced with fire retardant roofing as required by state and/or local regulations.

Test methods have been developed to evaluate the fire hazards of roof coverings. NFPA 256, *Methods of Fire Tests of Roof Coverings*, describes the appropriate procedures. The test evaluates the flammability of the roof covering, the protection it provides to a combustible roof deck, and the potential for producing flaming brands. Roof materials are classified as Class A, Class B, and Class C. To receive one of the classifications, the roof covering is given a series of fire tests of varying degree of severity. After all roof-covering tests have been conducted, roof coverings are classified based upon test results:

- Class A covering is one that is effective against a severe fire exposure, affords a high degree of fire protection to the roof deck, does not slip from position, and does not present a flying brand hazard.

This type of roof covering is required in all SRA and LRA areas classified as Very High fire hazard severity areas.

- A Class B roof covering is one that is effective against a moderate fire exposure, affords a moderate degree of fire protection to the roof deck, does not slip from position, and does not present a flying brand hazard. This type of roof covering is required in all SRA areas rated as Moderate fire hazard severity areas.
- A Class C covering is effective against light test exposure, provides a light degree of fire protection to the roof deck, does not slip from position, and does not present a flying brand hazard. This type of roof covering contains the lowest degree of fire resistance allowed in the state of California.

The specific definition of each roofing classification is dependent upon the roofing material, roofing support construction and sheathing. With a given surface material, the classification may change, depending on whether the sheathing is solid (plywood) or lath, and whether the underlay material is foil, tar paper or felt (different weights available). The Class A rating provides the most fire resistive characteristics.

## **11.2 Walls**

Educate homeowners on the various types of siding available—nonflammable material for exterior walls is preferred. Some siding such as vinyl will soften and melt even under mild, radiant heat conditions. Materials such as stucco and masonry stand up better to heat and fire exposure. Wood walls are the most dangerous so it is important homeowners pay close attention to managing their vegetation around the structure.

## **11.3 Windows**

Regular plate glass windows can thermally fracture due to heat from nearby fire even though the heat may not be enough to ignite the home's exterior wood. Advise homeowners that tempered glass or double pane windows tend to fare better during wildfires. Advise on the potential for plastic skylights to melt under intense heat.

## **11.4 Vents and Eaves**

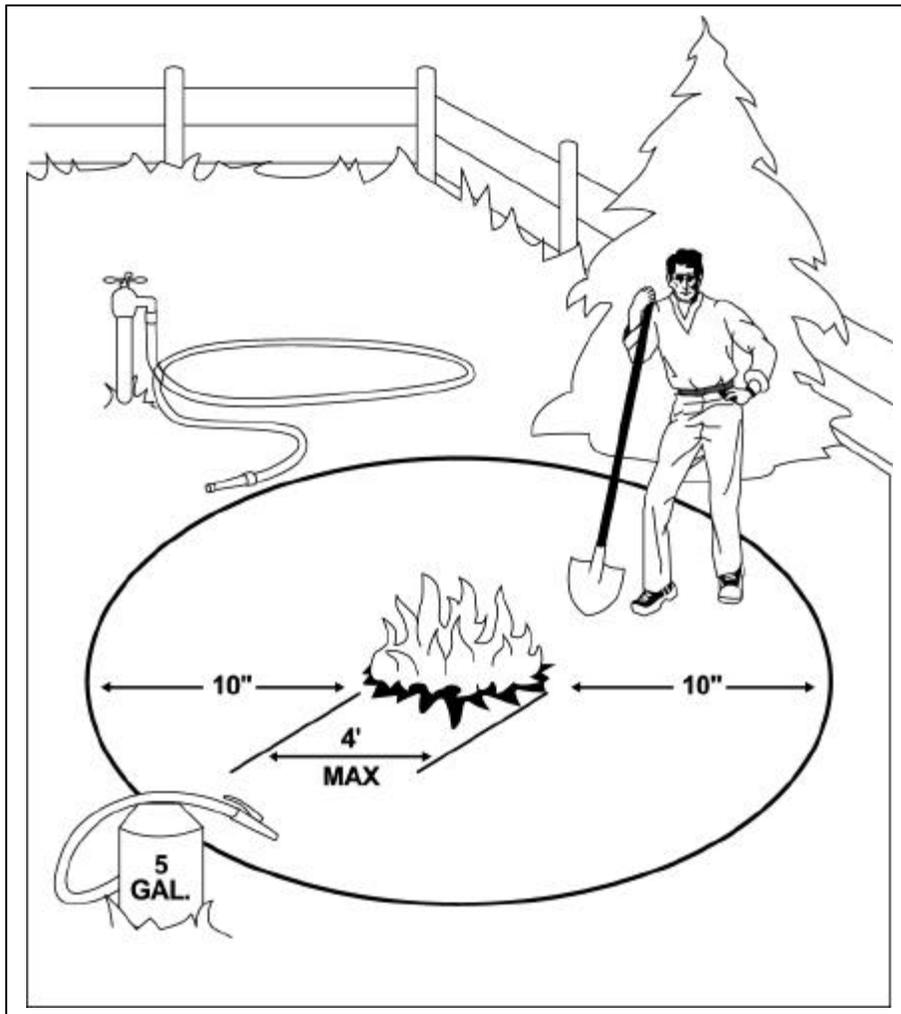
By enclosing your eaves you can prevent another method of flame entry and spread. Cover all vents with ¼ inch wire mesh screen to prevent sparks from being drawn into your home by air currents.

## 12. FIRE SOURCES

### 12.1 Debris Burning Regulations

Obtain the required permit prior to any burning on your property and abide by the terms of the burning permit ([PRC 4423](#) and [4433](#)).

Always cut a firebreak between recreational fires on your property and the adjacent dry forest fuels, 10 feet recommended ([PRC 4427a](#)).



Debris Burn Pile  
Figure 12.1.

### **12.1a Permit Required**

Make sure the property owner or the person in control of the property has a valid permit prior to any type of burning activity. A permit issued by CDF will not be valid for any day on which burning is prohibited by the local Air Pollution Control Board. Burning permits are required under PRC 4423.

### **12.1b Local Laws**

Check local laws on burning of debris. Some communities allow burning only during specified hours of the day; others forbid it entirely. Check the local laws on specific types of material, which can legally be burned. In many cases, outside burning is limited to natural vegetation or untreated lumber. **DO NOT BURN TIRES, TAR PAPER OR PESTICIDE CONTAINERS.**

### **12.1c Check the Weather**

Do not burn on hot, dry, or windy days. Even though it may be a legal burn day, use common sense.

### **12.1d Debris Burning**

Debris to be burned should be in 4' x 4' piles, in a cleared area, away from overhead branches, with an adult in attendance at all times - consider the alternatives. Sometimes leaves, grass, and stubble may be of more value if they are not burned!

Incinerators should be in a cleared distance. **PRC 4446** states that the following minimum requirements shall apply:

- The area within 10 feet of the exterior of the incinerator is maintained free and clear of all flammable material and vegetation.
- A screen constructed of a nonflammable material, with no greater than ¼ inch mesh, or metal doors, close or cover each opening in the exterior of an incinerator to prevent the escape of flames, sparks, ashes or other burning material which might cause an uncontrolled fire.
- A permit is obtained prior to burning for the use of the incinerator pursuant to PRC 4423 and all other applicable provisions of law.

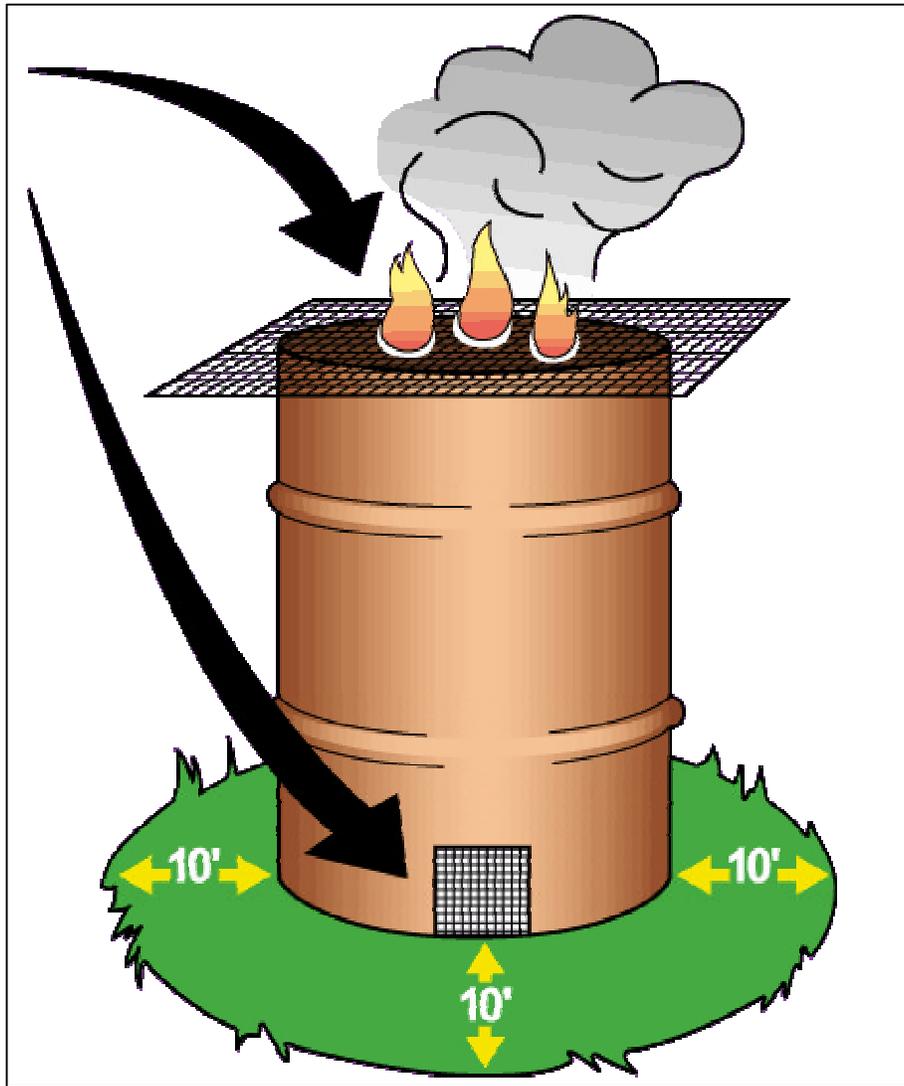


Figure 12.2.  
Requirements for Incinerator

## **12.2 Campfire Safety**

Campfire permits are not required for homeowners on their own property. Homeowners should practice fire safety though, as they are liable if a fire escapes.

- ✓ Always clear at least 5 feet in all directions around the fire pit.
- ✓ Always completely extinguish the fire before departing (**PRC 4432**).
  - Drown the fire with water while mixing the ashes and embers with soil.
  - Feel the ashes to make sure they are out.

## **12.3 Disposal of Ashes**

Be especially careful when cooking outdoors. Charcoal briquettes and fireplace ashes should be extinguished by dumping into a metal pail and soaking with water. Charcoal briquettes can hold heat 24 hours if left unextinguished.

## **12.4 Gasoline Lanterns, Stoves and Heaters**

Gasoline lanterns, stoves and heaters should be allowed to cool off prior to filling. Then place them on the ground in a cleared area and fill with the proper fuel.

## **12.5 Gasoline Storage**

Store all flammable liquids in approved safety containers.

## **12.6 Liquefied Petroleum Gas (LPG)**

LPG tanks (propane and butane) should be located at least 30 feet from any structure and surrounded with 10 feet of clearance.

## **12.7 Firewood Storage**

Do not stack flammable materials, such as firewood, next to or against structures. Stack and cover woodpiles a recommended distance of at least 30 feet from all structures and clear away flammable vegetation within 10 feet of woodpiles.



**Photograph 12.3.  
Improper Placement of Firewood**

## **12.8 Exhaust System Requirements**

Be sure legal spark arresters are attached permanently to all internal combustion engines which could be operated off the road near flammable dry vegetation. Examples of internal combustion engines requiring spark arresters would be: lawnmowers, chainsaws, generators, motorcycles, off-highway vehicles, agricultural equipment, and many types of construction equipment ([PRC 4442](#)).

Consult the manufacturers guide for proper maintenance procedures and intervals. If it is not known if the spark arrester is the proper type, consult the spark arrester guide at the local fire prevention office.

Advise homeowners on the dangers of metal cutting blades and exhaust systems on their lawnmowers and weed eaters. Metal cutting blades on lawnmowers are a hazard. On hot, low-humidity, summer afternoons, if the metal blades strike rocks while mowing, the sparks will ignite the dry grass. Grass cutting activities utilizing mowers with metal cutting blades should be confined to the morning hours.

## **12.9 Welding Safety**

Welding should be done in an area with ten feet of clearance of all flammable vegetation and the appropriate firefighting tools--round point shovel with an overall length not less than 46" and one backpack pump water-type fire extinguisher ([PRC 4427](#)).