Loss Control TIPS
Technical Information Paper Series
*Innovative Safety and Health Solutions*SM

Protect Your Business Against Wildfires

Understanding Wildfires

Wildfires in the United States are most common in the Western states, but they can happen anywhere. Businesses and homeowners in Florida, Kentucky, and even Massachusetts have experienced wildfires and their aftermath. More than 100,000 wildfires occur in the United States each year, burning millions of acres and destroying hundreds of homes and businesses. Most wildland fires are started by people, although lightning is another common ignition source. Four of five forest fires are started by careless human behavior, such as a dropped cigarette or improperly extinguished campfire.

More people are making their homes away from city centers, and businesses and industrial parks are also moving into rural areas, thus placing more people and property at greater risk from the dangers of wildfire.

Wildfires are classed in three types:

- *Surface Fires*, the most common type, burn slowly along the forest floor. Surface fires kill or damage trees.
- *Ground Fires*, usually sparked by lightning, burn in or below the forest floor, in the layer of humus down to the mineral soil.
- *Crown Fires*, which move from treetop to treetop, are spread quickly by wind.

High temperatures, low humidity, and high winds increase the risk of wildfires, contribute to their swift spread, and also make them harder to control. Drought conditions, such as are now overspreading much of the continental United States, cause vegetation to dry out, increasing the available fuel load.

Once a wildfire starts, it is very difficult to control or extinguish it. The job of wildland firefighters is to fight the fire and protect natural resources, not protect homes and businesses, so it's important that you take responsibility to reduce your risk and protect your business. Remember, too, that in a wildfire situation, you cannot count on your local fire department being able to get to your business to put out a fire; they may already be working elsewhere, or roads to and from your facility may be impassable.

If a wildfire occurs in your area, you cannot prevent it from approaching your property, but you can take steps now to help protect your employees, buildings, equipment, inventory, vehicles, and other assets from injury and damage. You can also learn how to respond safely, should a wildfire occur in your community.

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Evaluate Your Wildfire Risk

First, find out how to get information about wildfire activity in your area. Talk to local fire officials or the forestry service to learn about the risk of wildfire in your area. Ask about local wildfire history. Have wildfires occurred in your area? How recently? Under what conditions?

Look at the topography of the area where your facilities are, and learn how this affects your wildfire risk. For example, if any of your buildings are on steep slopes, you will need to implement extra protective measures (such as larger safety zones), because fire moves more quickly uphill than on level areas. Talk to your local fire department or forestry official for more information.

Learn about the prevailing winds and typical weather in your locality. When is the "dry season"? Is there a time of year when your area is more prone to wildfires? Keep informed about weather and other conditions that increase the likelihood of wildfire. The U.S. National Interagency Fire Center provides current information and guidance (www.nifc.gov).

Think about your water supply. Evaluate natural water supplies on your property, such as rivers or ponds, and consider how these might help keep fire away, or serve as areas of safety, or be used to extinguish a fire. Water supplies in rural areas may be limited, especially in dry seasons or drought conditions.

The Institute for Business and Home Safety has defined wildfire risk levels as follows:

Low Risk Areas	Moderate Risk Areas	High Risk Areas
Little or no history of nearby wildfires	History of wildfires	History of nearby wildfires
Humid climate, short dry season	Climate includes a dry season less than 3 months	Dry climate with a dry season more than 3 months
Flat terrain (no grades greater than 9%)	Hilly terrain (grades average between 10% and 20%)	Steep terrain (grades average over 20%)
Limited wildland	Bordering a wildland with light brush, small trees or grass	Forested wildland within 100 feet of buildings
Buildings not crowded by trees	Trees are located in close proximity to buildings	Trees are crowded within 30 feet of buildings
Landscape includes native vegetation	Native vegetation may have been incorporated into the landscape	Native vegetation has not been incorporated into the landscape
Manmade fuels at least 50 feet from buildings	Manmade fuels are within 50 feet from buildings	Manmade fuels are within 30 feet from buildings
Fire hydrant within 300 feet	Fire hydrant within 500 feet	No fire hydrants
Easy access for fire trucks	Access for fire trucks	Limited access for fire trucks

Once you have determined your wildfire risk, take steps to protect your employees, your property, and your business operations.

If you are in a high- or moderate-risk area, act *now* to evaluate your emergency preparedness and evacuation plans to determine if you are prepared to respond to a wildfire situation. Make your facilities and grounds as fire-safe as possible (see below).

Even if you are in a low-risk area, a wildfire could happen, especially in unusually dry conditions such as are now prevalent in much of the country. Don't be caught off guard.

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Include Wildfire Preparedness and Response in Your Emergency Preparedness Plan

If you have not already done so, prepare policies, procedures, and resources for preparation, response, and recovery from real and threatened emergencies, including wildfire. Appoint an Emergency Coordinator and an Emergency Response Team. Keep employees, emergency responders, and community officials informed of your emergency preparedness plans so that affected individuals and organizations can act effectively should the need arise.

For each of your properties, develop a specific wildfire response plan. For example, consider how you would remove or protect employees, visitors, essential equipment and vehicles. Consider, too, how the potential loss of water, gas, or electricity would affect your ability to respond to a fire, to help your employees evacuate safely, and to protect your property.

Become knowledgeable about prevailing weather patterns in your area, and keep up-to-date about droughts, long-range weather forecasts, and wildfire activity elsewhere in the region.

Talk with your insurance agent to make sure your insurance policies are up to date and that they will provide adequate coverage in the event of a wildfire.

Talk with other business owners in the area about wildfire preparedness and response. Discuss how you might help each other before, during, and after a wildfire.

Build with Protection in Mind

In both new construction and existing buildings, take these steps to reduce your fire risk:

- ☐ Install automatic fire sprinklers in every building, and maintain them in working condition.
- ☐ Install smoke alarms (detectors) in appropriate locations and maintain them properly.
- ☐ Install a fire alarm which is connected to a central station or the local fire department.
- ☐ Use special draperies and other window treatments that are treated with fire-retardant chemicals.
- ☐ Install metal mesh screens on exterior vents, on attic openings, and around decks, floor openings, and eaves, to keep cinders from an outside fire from blowing in, and to keep materials from an inside fire from blowing out and starting a new fire.
- ☐ Make sure that emergency vehicles can get to your property, and check to see that they have enough room to turn around and get out again. Most fire trucks need 12-foot wide roads with a 15-foot overhead clearance, and need at least a 45-foot turning radius. A slope with less than a 12% grade is preferred.
- ☐ If your property is gated, make sure that the gates open *inward* and are wide enough to accommodate fire fighting equipment. The gate should be at least 30 feet off the main road so that emergency vehicles can pull all the way off the main road before stopping to open the gate. If the gate has a lock, make sure it is not so strong that emergency responders cannot break it open in an emergency.
- ☐ Make sure that your street and number are clearly marked, with a large, easy-to-read, noncombustible sign, so that emergency responders can find your property quickly.

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If you are planning new construction or renovation:

- ☐ Check with local building and zoning officials. Your community or state may have regulations applying to the types of building materials you can use in fire-prone areas.
- ☐ If possible, choose a flat building site. Fire spreads much more quickly on slopes.
- ☐ Use fire-resistant or noncombustible materials such as stucco, tile, metal siding, brick, stone, or concrete tiles on roofs and the exterior structure.
  - ☐ If you use wood for decks, roofs, siding, or trim, be sure to treat it with a fire-retardant chemical listed by Underwriters Laboratories.
  - ☐ Do not use wood shakes or shingles on the roof. (These are prohibited in many communities because of their known ability contribute to the rapid spread of fire.)
  - ☐ Use thick or double-paned, tempered safety glass in large windows and doors.
- ☐ Install electrical lines underground if possible. This will protect them from damage which could cause a fire.

Landscape Design Plays an Important Role

- ☐ Evaluate existing landscaping to determine if it creates or increases your fire risk. Certain trees and plants burn more easily and can spread a fire rapidly. The proximity of trees and other plants to buildings, fueling areas, etc., can affect how quickly a fire could spread to, and overwhelm, your property.
- ☐ Check with local building and zoning officials. Your community may have regulations pertaining to the types of plantings, trees, and shrubs you should use in wildfire-prone areas.
- ☐ Design landscaping with wildfire protection in mind.
  - ☐ Large patios or plazas around the building are effective in blocking the spread of fire. Stone or brick walls can shield your property from heat and flames.
  - ☐ Ponds and lakes add aesthetic appeal, as well as blocking fire and providing a ready water source; however, any body of water is a hazard to children and other passersby. Be sure to comply with local codes for fencing and warning signs.
  - ☐ Consider the types of plants you use. Check local building codes to determine if certain types of quick-burning plants are restricted. Consult a local nursery or zoning officials for advice about selecting slower-burning plants. For example, deciduous trees (oak, maple) burn more slowly than resinous coniferous trees (pine, fir).

Reduce Your Fire Risk with Good Grounds Maintenance

- ☐ Maintain well-watered, well-pruned grounds to provide protection against approaching fire.
- ☐ Create a “safety zone” around your building.
  - ☐ Clear dry or dead brush, trees, grass, and other debris within 50 feet of all buildings. For buildings on hills, clear within 200 feet.
  - ☐ If trees around your building are primarily deciduous (oak, maple, etc.), your safety zone should be at least 30 feet. If the trees are primarily coniferous (pine, fir, etc.), your safety zone should be at least 100 feet.
  - ☐ If your building is on a slope, you will need a bigger safety zone than on level ground, perhaps hundreds of feet. Consult local fire or forestry officials.
- ☐ Maintain your grounds scrupulously to reduce the amount of material that could fuel a fire and contribute to its spread:
  - ☐ Rake away dead leaves, plants, twigs, branches, and rubbish, especially from under trees, decks, stairs, etc.
  - ☐ Do not allow vines to grow on buildings, fences, or other structures.

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- ☐ Mow and water grass regularly. Collect and dispose of clippings safely.
- ☐ Hire a professional tree service to safely maintain your trees. Ask these professionals to:
  - ☐ Remove dead limbs from trees, especially those nearest to buildings or other structures.
  - ☐ Thin the trees to create and maintain 15-foot clearance between the crowns of all the trees, to slow the spread of fire.
  - ☐ Remove limbs within 6-10 feet of the ground, to slow the spread of fire from ground to trees.
  - ☐ Trim branches, limbs, and shrubs so they don't touch or rub against electrical wires.
- ☐ Ask your power company to remove branches that are near power lines. Never attempt to do this job yourself.

Reduce Your Fire Risk With Fire Safe Practices

Fire safety is important for every business, of course, but if you are in a wildfire area, you need to take extra steps to prevent fires from starting and spreading.

- ☐ If you store combustible (e.g., pallets) or flammable (e.g., propane) materials outdoors, maintain an appropriate clearance from buildings, fences, etc., and from trees, shrubs, or other plants.
- ☐ Use only appropriate listed or approved containers for flammable liquids.
- ☐ If your building is on a slope:
  - ☐ Store small amounts of combustible and flammable materials *uphill* from buildings, so that if they catch fire, their flames will not travel quickly uphill to the buildings.
  - ☐ If you must store large amounts of flammable or combustible materials on your property (such as propane or diesel tanks), site them at a safe distance *lateral* to your buildings, not up or down hill. If they should catch fire, flames could travel uphill to your buildings, but burning fuel or other flammable liquids could travel downhill to ignite other structures.
- ☐ If you allow smoking at your business:
  - ☐ Consider establishing a smoke-free workplace. This will reduce your overall fire risk significantly.
  - ☐ Establish a smoking area, and allow smoking only in that area.
  - ☐ If the smoking area is outdoors, locate it in a paved area where dropped smoking materials can not easily start a fire. Do not locate a smoking area near flammable or combustible materials.
  - ☐ If the smoking area is outdoors, consider moving it indoors during dry weather and wildfire season.
  - ☐ Provide appropriate containers for discarded smoking materials.
- ☐ Avoid open burning outdoors, especially in dry weather and during wildfire season.
- ☐ If you must burn outdoors:
  - ☐ Obtain the appropriate permits from local fire officials.
  - ☐ Build fires away from trees, brush, and grass.
  - ☐ Never leave any fire unattended. Fires grow quickly and can soon spread out of control.
  - ☐ Watch for ash, cinders, or embers that may escape from the fire.
  - ☐ Be prepared to extinguish any fire quickly and completely. Have a working garden hose and an appropriate extinguisher at hand. Be sure that employees who might have to use the fire extinguishers know how to do so.
- ☐ Do not allow trash to accumulate, indoors or outdoors. Provide enough appropriate fire-resistant waste containers, and empty them regularly.
- ☐ Keep roofs and gutters clear of leaves, branches, pine needles, trash, or other debris that could fuel or spread a fire.
- ☐ Keep chimneys and smokestacks clean and unobstructed. Install spark arresters on chimneys to prevent sparks and embers from escaping.

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Train Your Employees in Fire-Safe Behavior

- ☐ Train your employees in general fire safety, especially for tasks with a high fire risk, such as welding and cutting, fueling vehicles, working with flammable liquids, etc.
- ☐ Teach employees about the importance of good housekeeping and grounds maintenance in preventing fires.
- ☐ Have an adequate number of appropriate fire extinguishers, and maintain them properly.
- ☐ Train key employees in when and how to use fire extinguishers.

Protect Your Employees

- ☐ Establish an evacuation plan and keep it up to date.
- ☐ Hold evacuation drills regularly so that all employees will know who is in charge, and so that they become familiar with evacuation routes and routines.
  - ☐ Consider when and how to evacuate employees if a wildfire threatens.
  - ☐ Make sure all employees can get out of the buildings, find shelter, and communicate with a responsible person.
  - ☐ Plan primary and secondary exits from your buildings. Consider how employees will escape if doors or windows are blocked by an exterior fire.
  - ☐ Plan two evacuation routes out of your neighborhood. Consider how employees will evacuate on foot if roads are closed or impassable, such as if they are blocked by fire or by emergency personnel.
  - ☐ Remember that ponds, lakes, rivers, and landscaping or swimming pools can serve as safety zones.
- ☐ Keep appropriate emergency supplies on hand: flashlights, battery-powered portable radio, extra batteries, first aid kit and manual, non-perishable foods, bottled water, etc. If designated employees will be working to protect the property, provide appropriate clothing (work boots and gloves, personal protective equipment, sturdy work clothes, etc.) Consider these employees' needs for personal hygiene, food and drink, rest, clean clothes.
- ☐ Teach employees about wildfire risks and preparedness. Provide information to help employees protect their homes, too.
- ☐ If you are in a wildfire area, consider advising employees to keep personal disaster supplies and copies of important documents at work in case they need to evacuate from work without being able to get home. For example, they might have ready appropriate clothing such as long-sleeved cotton or woolen shirts, long pants, sturdy shoes, gloves, handkerchiefs, hat.

Be Prepared to Respond to a Wildfire

- ☐ Keep an adequate number of appropriate fire extinguishers in strategic locations (such as near loading docks and waste collection areas), and maintain them properly.
- ☐ Train key employees (and their backups) how and when to use extinguishers correctly
- ☐ Consider maintaining a water supply at your facility to control small fires until emergency personnel can arrive. You might install a water tank, or install hoses and pumps to an existing swimming pool, pond, river, or lake. Be sure the hoses are long enough, and be sure to inspect them regularly and maintain them in good condition.
  - ☐ If you live in an area subject to freezing temperatures, be sure that water outlets and pumps are protected from freeze-ups.
  - ☐ Evaluate water levels in extreme hot and cold weather conditions.

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- ☐ If your pump(s) use electrical power, consider obtaining a gasoline- or diesel-powered pump (or generator) in case electricity is cut off during a fire. However, be aware of the increased risk of storing a large quantity of fuel. Use an appropriate storage facility which is protected against vehicle impacts and fire.

☐ Have appropriate tools available to help control small fires while waiting for emergency personnel to arrive, such as rakes, axes, saws, buckets, shovels, etc.

☐ Have at least one ladder that will reach to the roof, so that employees can get to the roof to wet it down, to remove combustible debris, or to extinguish sparks or embers.

Know What to Do If a Wildfire Threatens

☐ Contact emergency officials to report any outdoor fire. While you may attempt to control a small fire until firefighters arrive, do not assume that you can extinguish it. Fire is unpredictable and dangerous.

☐ Turn on the radio or television to get the latest information.

☐ Activate your emergency preparedness plan.

☐ Keep lights on for visibility in smoky conditions. Distribute flashlights.

☐ Keep employees informed of:
- ☐ the wildfire conditions.
- ☐ the company's response.
- ☐ what actions employees should take, or be prepared to take, and when they should act.

☐ Be ready to evacuate when ordered to do so by local officials, or if the fire draws near.

☐ If ordered to evacuate, *do so immediately*. You may have only a few minutes to get to safety.

☐ If you must evacuate, follow evacuation routes indicated by local officials, even if they are different from what you expect. Because wildfires can change speed and direction quickly and unpredictably, your planned escape routes may be blocked.

If you have time, take these steps to protect your property:

Outside:

☐ Remove combustible and flammable materials from around the building(s): trash receptacles, fuels, furniture, vehicles, etc.

☐ Seal vents to attics and other spaces.

☐ Turn off the gas.

☐ Connect hoses; set up water pumps.

☐ Use hoses or sprinklers to wet roofs, plants, etc.

☐ Have water hoses connected and ready to wet roofs, shrubs and trees within 15 feet of buildings and above-ground fuel tanks.

Inside:

☐ Shut off the gas and close valves. Turn off pilot lights.

☐ Close all windows and doors to prevent drafts. Close noncombustible window coverings; remove flammable or combustible window coverings.

☐ Move combustible and flammable furniture and other materials toward the center of the building, away from windows and doors.

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After a Wildfire

- ☐ Do not return to your property until local officials tell you that it is safe to do so.
- ☐ Be cautious when returning to a burned area. Hot spots can flare up without warning.
- ☐ Be cautious of downed or damaged power lines and poles which can cause electrocutions or cause additional fires. Report electrical damage immediately to authorities.
- ☐ Watch out for ash pits, which are holes full of hot ashes left by burned trees and stumps. Falling into an ash pit could cause serious burns and other injuries. If possible, cordon these off to prevent injuries.
- ☐ As soon as you return, check roofs, attics and concealed spaces for hot spots, embers, or sparks, and extinguish these immediately. Continue checking for at least several hours.
- ☐ Before entering a building, look for hazardous conditions, such as standing water (may be electrically charged if wires were damaged), sagging ceilings, damaged floors, etc.
- ☐ Check the electricity. You may need to reset the main breaker, which the fire may have tripped. Contact your electric utility company for assistance.
- ☐ Carefully inspect heating systems; engage a qualified professional to do this if needed. Repair or replace damaged or burned components or systems before using the system. Tanks, fittings, lines, valves, and filters may have been damaged, bent, warped, or stressed, making them unsafe to use.
- ☐ Have the water tested before using it. Water systems can be damaged or contaminated by loss of pressure or other effects of the wildfire.
- ☐ Watch out for burned trees or power poles, which may be have been weakened by the fire. Be aware that local wind patterns may change due to loss of trees in the fire, so damaged trees may fall when and where you don't expect them.
- ☐ As you clean up your property, work carefully. Protect your employees from injury.
  - ☐ Provide appropriate personal protective equipment, including appropriate respiratory protection, protective clothing, sturdy boots and gloves, etc.
  - ☐ Wet down ashes and other debris to minimize disturbing the dust and ash.
  - ☐ Use special caution when handling hazardous materials, batteries, paints, damaged fuel containers, etc. Check with local authorities or professionals for assistance.

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For More Information

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