



## Begins at Home

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## HOME DEVELOPMENT GUIDE

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FireSmart Canada acknowledges the Institute for Business and Home Safety for providing the content for this publication.



# HOME DEVELOPMENT GUIDE

## WILDFIRE REALITY

Wildfires are a natural part of our ecosystems. Without wildfire, the landscape loses its diversity. Wildfires recycle nutrients, help plants reproduce and create a mosaic of vegetation that provides habitat for a variety of wildlife. By choosing to extend our lifestyles and communities further into forested areas, we become more exposed to the danger of wildfire. Living where wildfires can occur puts your homes at risk, but it is possible to live safely with this natural event.

Development standards play a significant role in reducing the potential impact a wildfire will have on a community. A building is more likely to be destroyed in a wildfire when it is located in a high-density area where fire is able to easily transfer from building to building. The potential for damage intensifies when flammable building materials are used. The recommendations in this guide will reduce the risk of wildfire to your home and neighbourhood.





## ROOFING MATERIAL AND DESIGN

The roof is the most vulnerable component of your home. Sparks and burning embers from a wildfire can travel long distances and quickly ignite flammable roofing material.

Consider these guidelines when designing and maintaining your home.



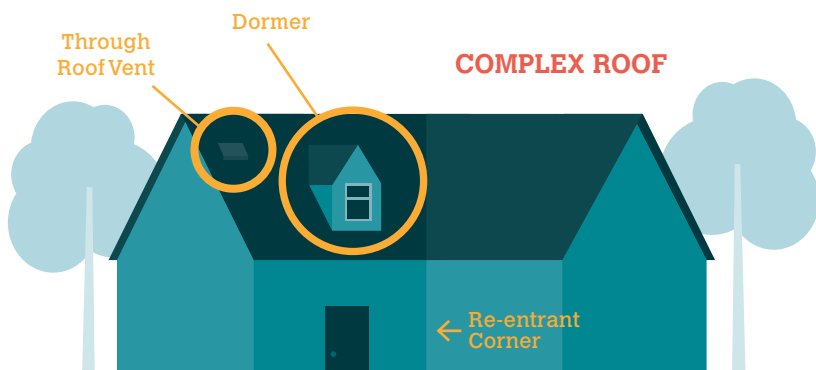
**CLASS A:**  
High Resistance  
to Fire

### DESIGN

A simple roof design will reduce the number of locations on your roof where combustible debris and embers can accumulate. Proper maintenance of dormers and other complex roof features is critical with a complex roof design. Maintenance will help protect from ignition. Install flashing at dormer roof surface junction (when combustible siding is used).

Even with a noncombustible roof, there are locations where the roof covering meets another material. Debris can accumulate at these locations, and so can wind-blown embers.

Roof vents should be screened or ASTM fire rated. Soffit vents interact with roof vents as part of required roof ventilation and will actually pull embers in during a wildfire, and should be screened or ASTM fire rated as well.



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## MATERIALS

The fire rating of roof covering relies on the entire roof assembly (sheeting, drip edges, end caps) to offer the rated protection.

Roofing material tested for flammability is assigned a classification:

Class A – high resistance to fire

Class B – moderate resistance to fire

Class C – low resistance to fire

A Class A fire-rated roof assembly offers the best protection. Examples of Class A roofing material include clay tile, concrete tile, metal and asphalt shingles.

Class C roofing has the lowest resistance to fire. Untreated wood shakes are a Class C because they create a dangerous combination of combustible material and crevices for embers or sparks to enter.

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## MAINTENANCE

It is important to inspect locations that are potential “weak links” on your roof (for example, wood shingle siding on a dormer next to a Class A roof covering), or areas with an exposed wall junction, open entry points under the roof covering, exposed combustible surfaces above gutters, or missing drip edge.

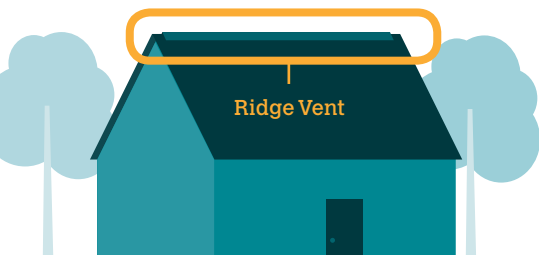
Roof features such as skylights and solar panels, could be an entry or accumulation point for wind-blown embers. Keep these features clear of combustible debris and properly maintained.

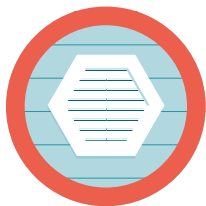
Your roof is a large surface where combustible debris can accumulate. When a wildfire is threatening your home, wind-blown embers can also land on your roof and ignite this debris, potentially putting your home at risk. Clean your roof of combustible debris regularly.

Branches overhanging your roof will result in more debris accumulation on your roof, in your gutters and near your home.

As shingles age and curl more openings are exposed and may increase places for embers to accumulate. Inspect your roof often and replace or repair any shingles that are in poor condition.

### SIMPLE ROOF





## SIDING, VENTS AND OPENINGS

With the exception of the roof, siding material is the structural component most vulnerable to wildfire. Combustible debris can accumulate at the vents and openings on your home and be ignited by embers during a wildfire.

Consider these guidelines when designing and maintaining your home.



**Fibre Cement Siding**



**Stucco Siding**



**Brick Siding**

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### DESIGN

A simple exterior wall design will reduce the number of locations for combustible debris and embers to accumulate.

Siding is vulnerable when it ignites and when flames or embers get into the cavity behind the siding. With inadequate ground-to-siding clearance, accumulated embers can ignite combustible siding directly. 15 centimetres of ground-to-siding noncombustible clearance is recommended.

Unscreened vents can allow heat and embers to enter a building and ignite.

Use multi-pane, tempered glass windows, and close them when a wildfire threatens. Install window screening to improve performance against radiant heat exposures and to minimize the size and number of embers that could enter the home. Ensure garage doors are properly fitted and maintained (weather stripping) to ensure there are not gaps for ember entry.

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## MATERIALS

### Siding

Some types of construction materials such as vinyl siding can melt when exposed to high temperatures, allowing the fire to reach the underlying wall components and penetrate the interior of the building.

Stucco, brick, fibre cement boards/panels and poured concrete all offer superior fire resistance.

### Vents

Install noncombustible material for all vents. Should be 3 millimetre screening or ASTM fire rated vents. Metal products are recommended for vents and vent flashing.

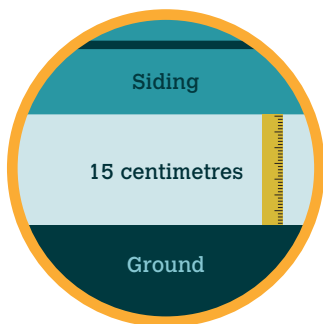
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## MAINTENANCE

Examine your siding for locations where embers could accumulate or lodge. Maintaining and removing combustible debris (such as lumber, stored vehicles, branches, grass and leaves) and firewood near the exterior walls will reduce a building's vulnerability to ignition during a wildfire.

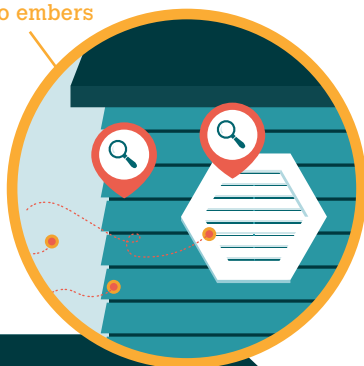
Ensure your siding is free of gaps, holes, or other areas where embers could accumulate, lodge or penetrate. Prioritize repairing any vulnerabilities identified on the exterior walls.

It is important to inspect your vents and openings regularly to ensure the vents are in good repair and remove any accumulated combustible debris.



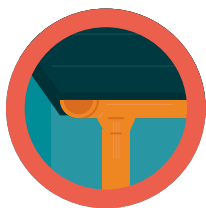
Inspect your home for any vulnerabilities to embers

Screened Vent



Ridge Vent

Static Vent



## GUTTERS AND EAVES

The gutters on your home provide a place for combustible debris to accumulate and open eaves create an entry point for sparks and embers.

Consider these guidelines when designing and maintaining your home.

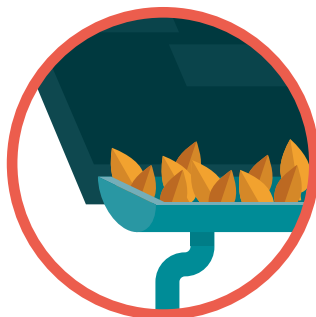
### DESIGN

Select a boxed-in or soffited-eave design for your home. Exposed or open eaves create an entry point for sparks and embers.

Install a drip edge at the roof edge above the gutters to protect any exposed roof sheathing or fascia.



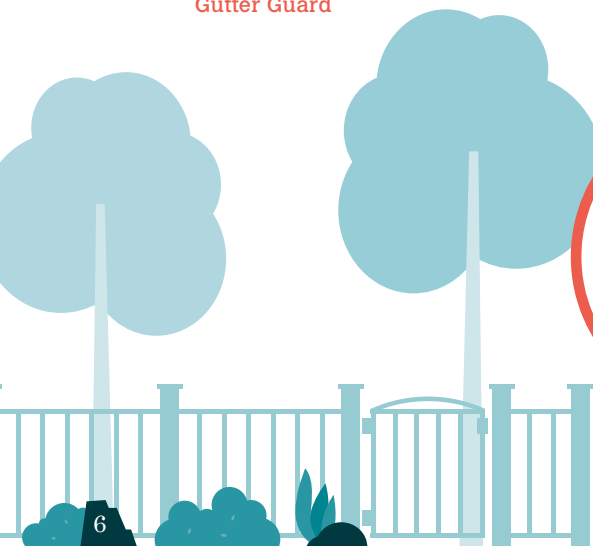
Gutter Guard



No Gutter Protection



With Gutter Guard





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## MATERIALS

Select gutters and downspouts constructed of noncombustible materials such as galvanized steel, copper and aluminum. Ensure metal drip edge is in place as part of the roof assembly.

To reduce the need for frequent cleaning and maintenance, use a noncombustible leaf or gutter guard. This guard will prevent the accumulation of combustible debris. Leaf and gutter guards can include metal mesh screens and metal hoods that fit into the gutter.

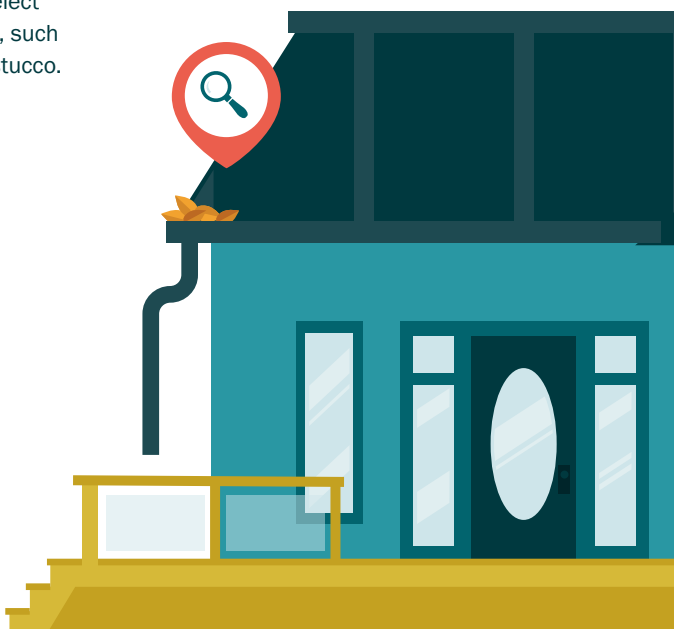
Open eaves create an entry point for sparks and embers. Select noncombustible materials, such as fibre-cement board or stucco.

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## MAINTENANCE

Regularly remove debris from your gutters as sparks and embers can easily ignite these dry materials. Consider screening your gutters with metal mesh to reduce the amount of debris that can accumulate.

It is important to regularly inspect your gutters and eaves to identify any vulnerable spots or areas requiring attention. Keep these areas clear of combustible debris and properly maintained.





## DECKS AND PORCHES

The materials used to build the deck, combustible materials you store under your deck, and the vegetation around it all contribute to how vulnerable your deck will be.

Consider these guidelines when designing and maintaining your home.



**Tempered  
Glass Railing**



**Metal Railing**

### DESIGN

Slotted deck surfaces allow combustible debris to accumulate below the deck. There should be access to spaces below the deck so debris can easily be removed.

For railings, use metal or tempered glass and select noncombustible patio furniture and decorations.

Ensure there is flashing, or noncombustible material at the deck/house wall junction if combustible siding is used.

Sheath the underside of the deck and balcony with fire-resistant sheathing as this will act as a shield against embers. Noncombustible surface should be under the deck as well, and extend for 1.5 metres out from perimeter of deck. Access and regular cleaning under deck is required, even if it is enclosed. No combustibles should be stored under the deck. Surround the deck with noncombustible material, such as rock mulch, gravel, brick, concrete pavers or patio stones to prevent vegetative growth.



**Firewood piles stored far from home**

**Noncombustible  
material**



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## MATERIALS

Most deck boards are combustible, including dimensional wood, plastic and wood-plastic composites.

Select fire rated composite decking material for your deck and sheath the underside of the deck with noncombustible sheathing, such as fibre cement board or metal screening. Maintenance is very important, even if the deck is sheathed.

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## MAINTENANCE

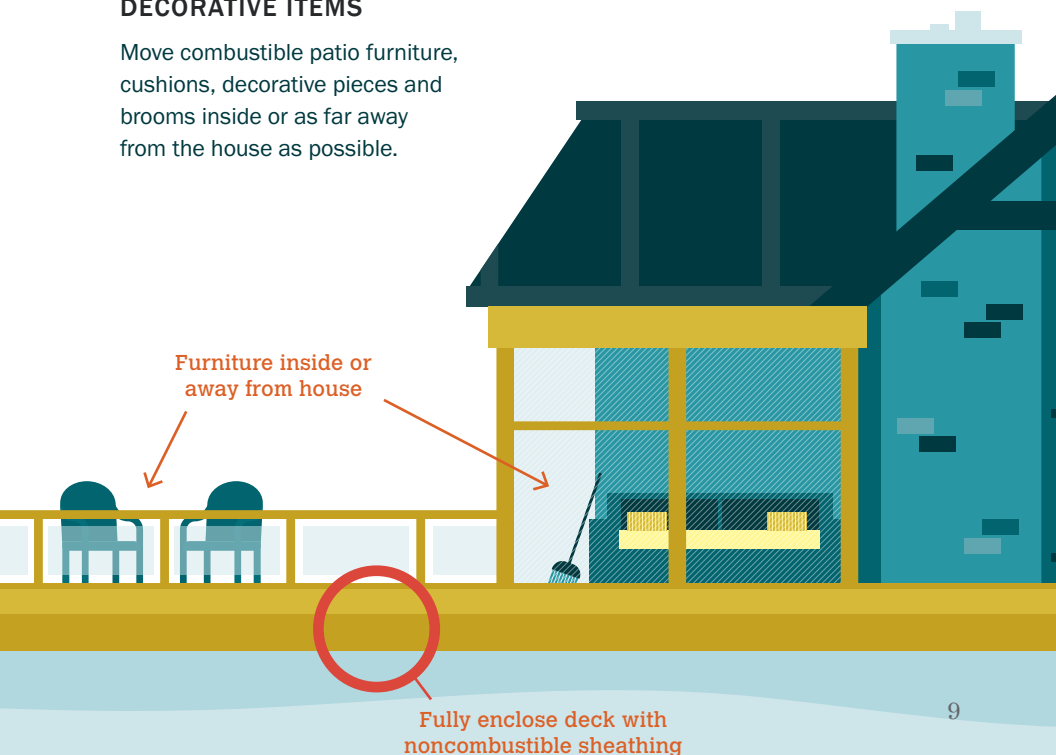
Removal of combustible debris and vegetation on, around and under decks and other attached structures is a key factor in reducing vulnerability to ignition during a wildfire.

Check the condition of combustible wood deck boards and replace or repair boards that are showing signs of rot or have large cracks.

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## LAWN FURNITURE AND DECORATIVE ITEMS

Move combustible patio furniture, cushions, decorative pieces and brooms inside or as far away from the house as possible.





## FENCING

Wooden fences and boardwalks create a direct line to your home and can contribute to the spread of wildfire.

Consider these guidelines when designing and maintaining your home.



**Combustible  
Wooden  
Slat Fence**



**Noncombustible  
Metal Fence**

### DESIGN

Avoid attaching fences and walls constructed of combustible materials directly to your home or building.

Use a metal gate or noncombustible fence panel that is at least 1.5 metres (5 feet) from the furthest projection (overhang, roof, etc) of the house.

Avoid fences that have gaps, such as wooden slat fences, because fire embers can become lodged in the gaps and ignite the fence.



**Metal  
Gate**

**Wooden Slat**

1.5 metres



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## MATERIALS

Wood fences offer zero fire resistance and can act as a wick directly to your home. Use noncombustible materials such as, metal, chain link, metal privacy slats, concrete, stone or masonry when designing and building your fence.

If a wood fence is installed, ensure there is at least a 1.5 metre noncombustible break between the wood portion of the fence to your home. For example, a metal gate with a stone wall to break up the combustible fence and protect your home.

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## MAINTENANCE

Monitor the condition of a combustible wood fence closely. Repair or replace any fence panels or posts that are showing signs of rot or damage.

Combustible debris near the fence or wall should be cleared regularly and the lawn well maintained.

The type of vegetation that is planted next to a fence or wall should be considered, and the vegetation should be maintained regularly.

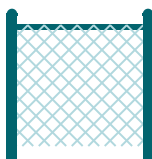
Stone



Metal



Chain link





## LANDSCAPING

A FireSmart yard includes making smart choices for your plants, shrubs, grass and mulch. Selecting fire-resistant plants and materials can increase the likelihood of your home surviving a wildfire. Ensure there is a 1.5 metre horizontal noncombustible surface perimeter along the outer walls of the primary structure (house).

### LANDSCAPING WITHIN 10 METRES

Plant a low density of fire-resistant plants and shrubs. Avoid having any woody debris, including mulch, as it provides potential places for fires to start.



### CHARACTERISTICS OF FIRE-RESISTANT PLANTS

- Moist, supple leaves
- Accumulates minimal dead vegetation
- Water-like sap with little odour
- Low amount of sap or resin material

### CHARACTERISTICS OF HIGHLY FLAMMABLE PLANTS

- Leaves or needles are aromatic
- Accumulates fine, dry, dead material
- Contain resin or oils
- Loose papery or flaky bark

### PLANTS TO AVOID

- Cedar
- Juniper
- Pine
- Tall grass
- Spruce

### GRASS

A mowed lawn is a fire resistant lawn. Grasses shorter than 10 centimetres in height are less likely to burn intensely.

Check local fire permits  
for backyard fire pits

Firewood piles  
far from home



## **BARK MULCH AND PINE NEEDLES**

Do not use bark or pine needle mulches within 10 metres of your home, as they are highly combustible. Gravel mulch and decorative crushed rock mulch significantly reduce the risk of wildfire.

## **COMBUSTIBLE MATERIALS**

Wood piled against a house is a major fire hazard. Moving your combustible materials, such as firewood piles, lumber, etc may be the factor that allows your home to survive a wildfire.

## **BURN BARRELS AND FIRE PITS**

Burn barrels should be placed as far as possible from structures and trees. Keep the area within 3 metres of the burn barrel free of combustible material. Always ensure your burn barrel has proper ventilation and is screened with 6 millimetre or finer wire mesh.

Check with your local municipality regarding specific requirements and restrictions regarding backyard fire pits.

Fire permits for both burn barrels and fire pits are required in many jurisdictions.

## **ON-SITE FIRE TOOLS**

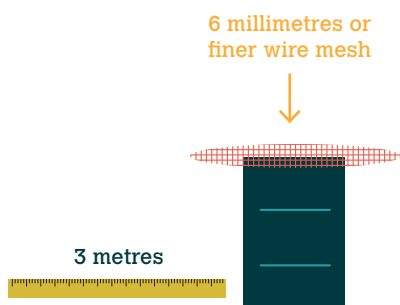
Every home should have readily accessible shovels, rakes, axes, garden hoses, sprinklers and ladders to assist in suppressing wildfires.

## **POWER LINES**

Power lines should be clear of branches and other vegetation. Contact your local utility company to discuss removing any branches or vegetation around overhead electrical installations.

## **ACCESSORY STRUCTURES**

Accessory structures (sheds and garages, or any neighbouring structures within 10 metres of the home), must be mitigated to the same standard as the primary structure.



# FIRESMART CANADA COMMUNITY RECOGNITION PROGRAM

Citizen involvement is the cornerstone of the FireSmart Canada Community Recognition Program.

If you live in a region susceptible to wildfires, you and your neighbours will learn how to decrease the risk of losing your homes and how to best protect yourselves in the event of wildfire.

FireSmart homes and neighbourhoods allow firefighters to concentrate on fighting the wildfire – which ultimately saves more homes and lives. Communities whose residents take steps to reduce their vulnerability have a greater chance of surviving a wildfire without the intervention of the fire department.

The program draws on a community's spirit and its willingness to take responsibility for reducing wildfire risks.

## **How can my community become a Recognized FireSmart Community?**

Becoming FireSmart takes time and coordination with your neighbours and others, but getting started is actually quite straightforward.

Visit **[www.firesmartcanada.ca](http://www.firesmartcanada.ca)** for more information.





## FIRESMART HOME PARTNERS PROGRAM

FireSmart Home Partners is a voluntary property assessment program that helps residents identify specific actions they can take on their property to reduce wildfire hazards.

FireSmart Home Partners property assessments provide residents:

- An in-depth, on-site assessment conducted by experienced fire professionals;
- An opportunity for property owners to identify mitigation actions unique to your property;
- A detailed follow up report with customized mitigation actions designed to measurably reduce the wildfire risk to your property;
- An opportunity to earn a FireSmart Home Partners certificate acknowledging your mitigation achievements (the certificate is given upon successful completion of required mitigation actions and an on-site follow up inspection). This type of recognition can be used to enhance real estate transactions by reassuring prospective buyers that the appropriate level of wildfire risk reduction has been achieved on the property. The designation can also be shared with local insurance providers to showcase mitigation activities.

For more information about the FireSmart Home Partners Program or to request an assessment, email: [homepartners@firesmartcanada.ca](mailto:homepartners@firesmartcanada.ca)



## **ABOUT THE FIRESMART HOME PARTNERS PROGRAM**

The FireSmart Home Partners Program is a collaboration between FireSmart Canada, provincial, local governments and Indigenous communities in Canada. The program's primary purpose is to engage homeowners in voluntary wildfire mitigation activities by offering a professional home assessment with property-specific recommendations. The assessment process accurately evaluates a home and property for wildfire exposure, while educating you as the homeowner of your unique risk and ways to reduce it.

**By following the FireSmart home development and maintenance guidelines in this guide, you will be well prepared for your FireSmart Home Partners Program assessment.**



**FireSmart**

**FireSmartCanada.ca**

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