FireSmart™ Canada

+ FormStudioArchitects

First Nations Housing Conference 2026 Wildfire Resilient Construction

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CIFFC ICS

FireSmart Canada is not FireSmart (ISC)

FireSmart™ Canada

- FireSmart™ Canada is a national program
- Part of the Canadian Interagency Forest Fire Centre (CIFFC)
- Helps Canadians increase resilience to wildland fire and minimize its negative impacts.
- It was founded in 1990 to address common concerns about wildland fire in the **wildland urban interface**.
- **We provide access to:**
  - FireSmart Training
  - Advocacy and Partnerships
  - Programs
  - Educational Materials

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Indigenous Services Canada | Services aux Autochtones Canada

- **Emergency Management FireSmart program**
- Part of Indigenous Services Canada (ISC)
- FireSmart **project funding** is available for initiatives, such as:
  - wildfire pre-suppression planning
  - wildfire risk assessments
  - fuel reduction, forest thinning, prescribed burning
  - fire breaks
  - wildland fire crew training
  - vegetation management
  - fire mapping
  - FireSmart training, workshops, conferences
  - community and youth engagement

What FireSmart Provides

FireSmart Training

Providing training courses and programs for:

- FireSmart 101
- Level 1 Ambassador
- Level 2 NRP Specialist
- Level 3 HIZ Specialist
- Insurance Brokers
- Landscaping Professionals
- Municipal Planners and Local Government Staff
- Builders and Developers

Advocacy Partnership

Involved in wildland fire and wildland urban interface policy through partners including:

- National Research Council – Building Code
- Canadian Council of Forest Ministers
- Insurance agencies
- Planning Organizations and Institutes
- Research labs and universities
- Provincial and territorial governments
- International agreements with other programs

Programs

FireSmart Offers Programs for neighbourhoods and individuals

- Neighbourhood Recognition Program
- Wildfire Preparedness Day
- The Development Recognition Program
- FireSmart Begins at Home App
- Home Assessment Program
- Home Partners Program (BC)

Educational Materials

Guides, manuals, and posters for:

- Home Ignition Zone and Self Assessment
- Begins at Home Guide
- Landscaping guides
- Fact Sheets
- Building and Development Guides
- Planning and Research
- And More….

FireSmart™ Canada

Who is Involved in Wildfire Prevention and Mitigation in Canada?

CIFFC
CANADIAN INTERAGENCY FOREST FIRE CENTRE INC.
CENTRE INTERSERVICES DES FEUX DE FORÊT DU CANADA INC.

- National Coordination
- Prevention and Mitigation (P&M) Education and advisory via the FireSmart Canada Program

Nunavut

- OFM, No wildfire spec.

Ontario
FireSmart guidance via MNR

Manitoba
FireSmart guidance via Office of Fire Comissioner

Quebec
Protéger son habitation, via SOPFEU

New Brunswick
FireSmart New Brunswick

Nova Scotia
FireSmart Nova Scotia

Prince Edward Island
FireSmart guidance via EEC

Newfoundland & Labrador
FireSmart guidance via F,A,&L

Saskatchewan
FireSmart guidance via SPSA & **SFNEM**

Alberta
FireSmart Alberta

BC Wildfire Serviec
FireSmart BC

Yukon
FireSmart guidance via Yukon Wildfires

Northwest Terr.
NWT FireSmart via Env.&Clim.

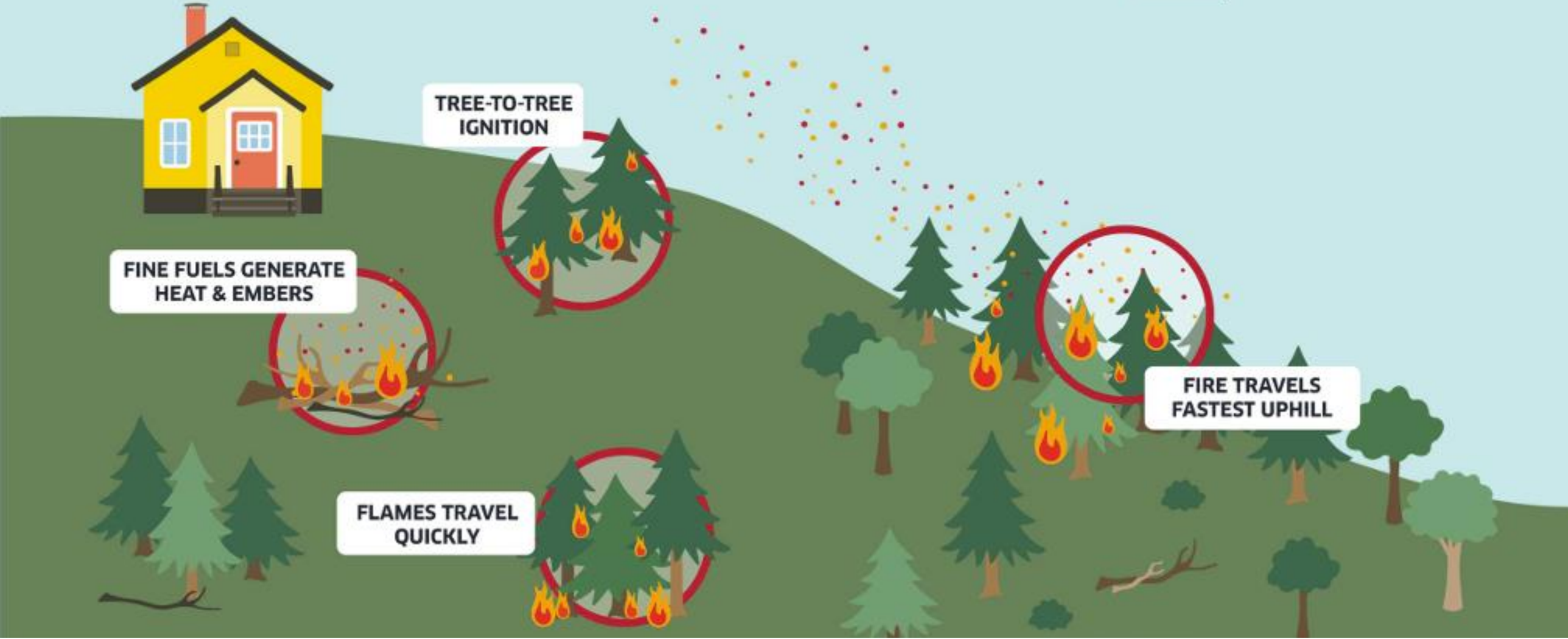
Has a Provincial FireSmart Program in Place

The Changing Threat of Wildfire

- The WUI (Wildland-Urban Interface) is expanding as settlements are extending into the wildland more every year with sprawl style development
  - More properties and infrastructure elements are exposed = ^ Risk
  - For First Nations, this risk is amplified, especially in more remote areas
- Aridification, longer fire seasons, and hotter weather is making things worse

Factors influencing the spread of wildland fire:

- **Fuel:** wildland and built fuels
- **Topography:** position on slope, aspect, elevation
- **Weather:** wind, temperature, precipitation and relative humidity



Embers & Sparks

Embers and sparks can blow up to two kilometres ahead of a wildland fire. They can ignite materials on or near your home causing severe damage.

Extreme Heat

Radiant heat from a wildland fire can melt vinyl siding, ignite your home, and even break windows. Extreme heat can come from flames within 30 metres of your home.

Direct Flame

As wildland fires spread toward homes, they ignite other flammable objects in their path. To stop wildland fire from directly affecting your home, create breaks in this path, especially close to your home.

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Homes can ignite by:

- Embers and sparks
- Extreme heat
- Direct flame

If homes don't ignite, homes don't burn.

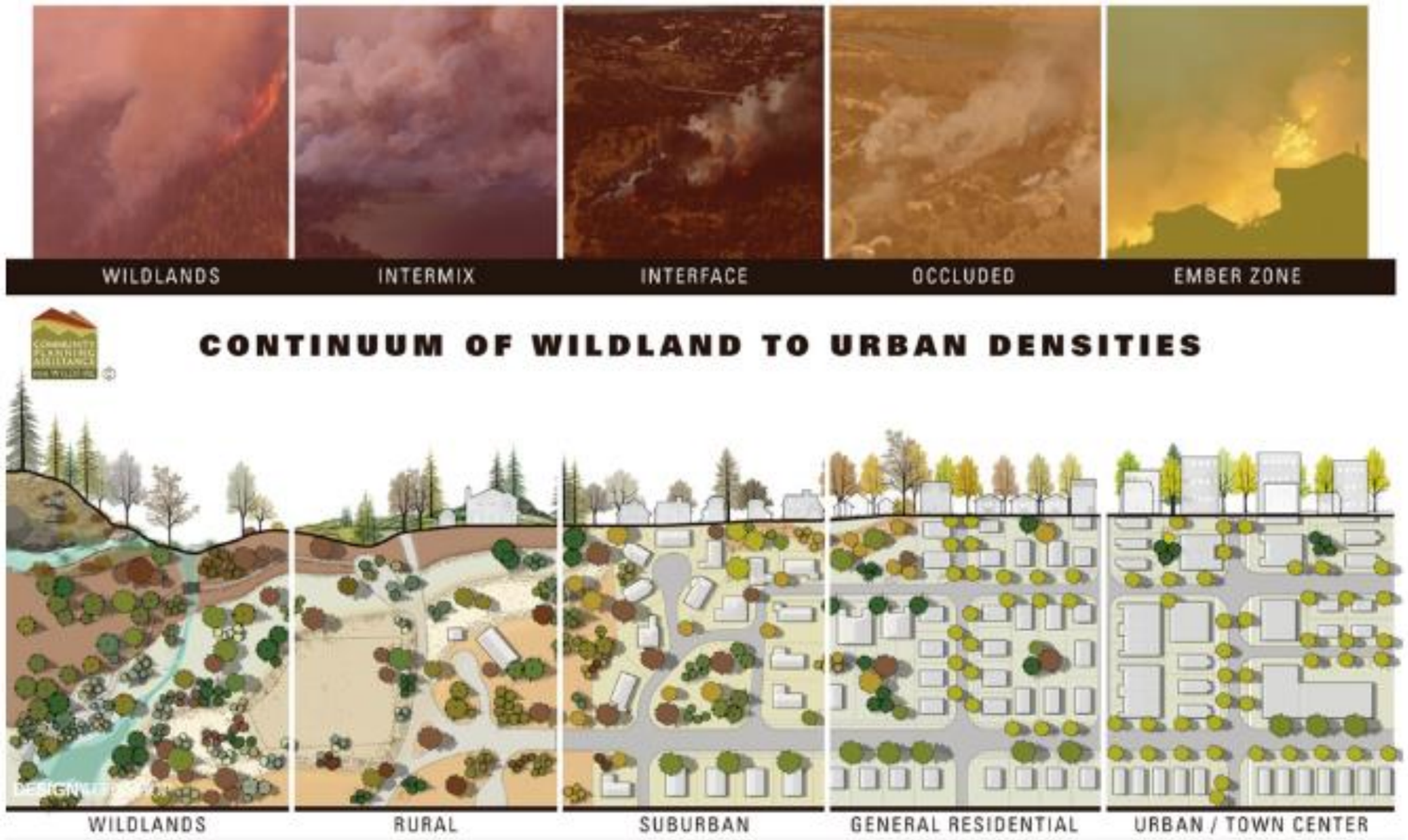
How FireSmart Works To Address Wildfire

Key Idea:
Creating Community Resilience

What is the WUI?

Where the Wildland and Urban Meet

- Comprised of natural features and homes/infrastructure, typically a sprawling suburb
- Key Factor is the fuel mix
  - Natural fuels from the wildland
  - Artificial fuels from the Urban
- These burn differently, require a different response



The wildland-urban interface exists along a continuum of wildland to urban densities. Different WUI types can be correlated to development patterns that transition across zones, similar to the transect model. Source: Community Planning Assistance for Wildfire.

The WUI Disaster Sequence

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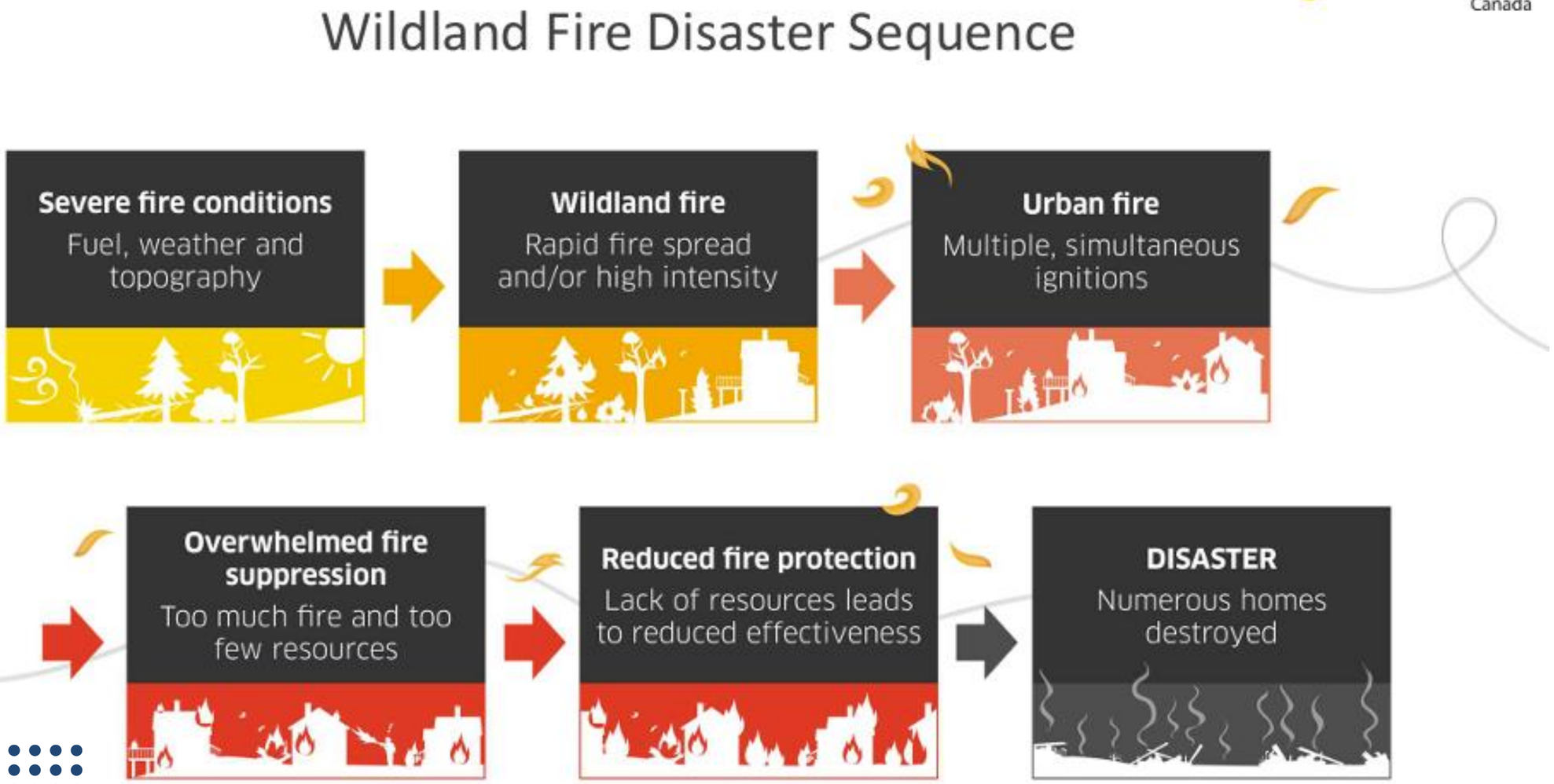


The WUI Disaster Sequence

Stopping the transition of fire from **wildland** fuels to **built** (urban) fuels significantly reduces the likelihood of a disaster.

Breaking the Sequence: Resilience Strategies

Immediate Zone

- Non combustibility in the priority

Intermediate Zone

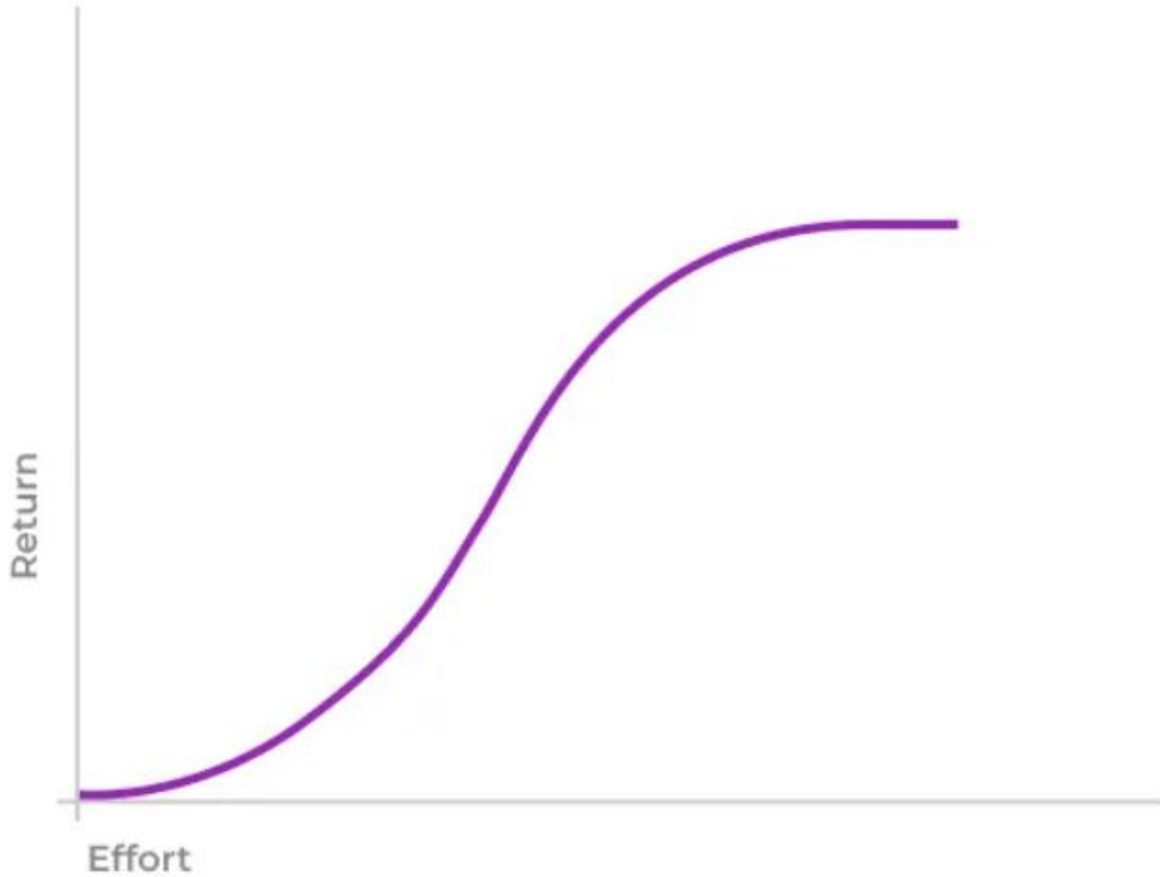
- Reducing transmission with fire resistance and selective mitigation actions

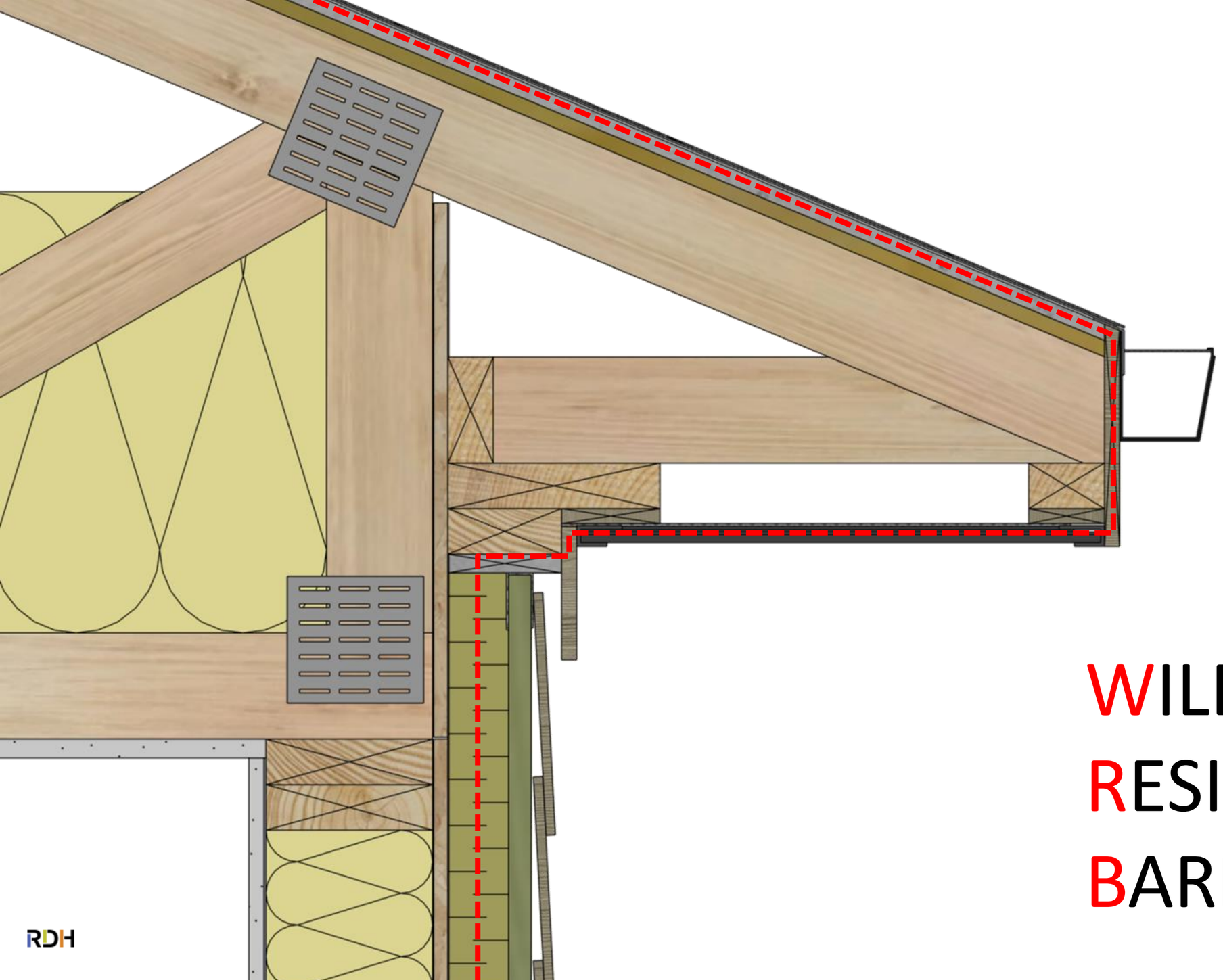
Extended Zone

- Minimizing spread and ember generation

Reducing Ignition Potential

- Reducing Ignition Potential is the Primary goal
- Low cost/effort interventions drive large returns in reducing overall ignition potential
- Chasing more ignition resistance often comes at a higher cost = Diminishing Returns





WFRB

WILDFIRE
RESISTANT
BARRIER

RDH

Best Practices – Roofs

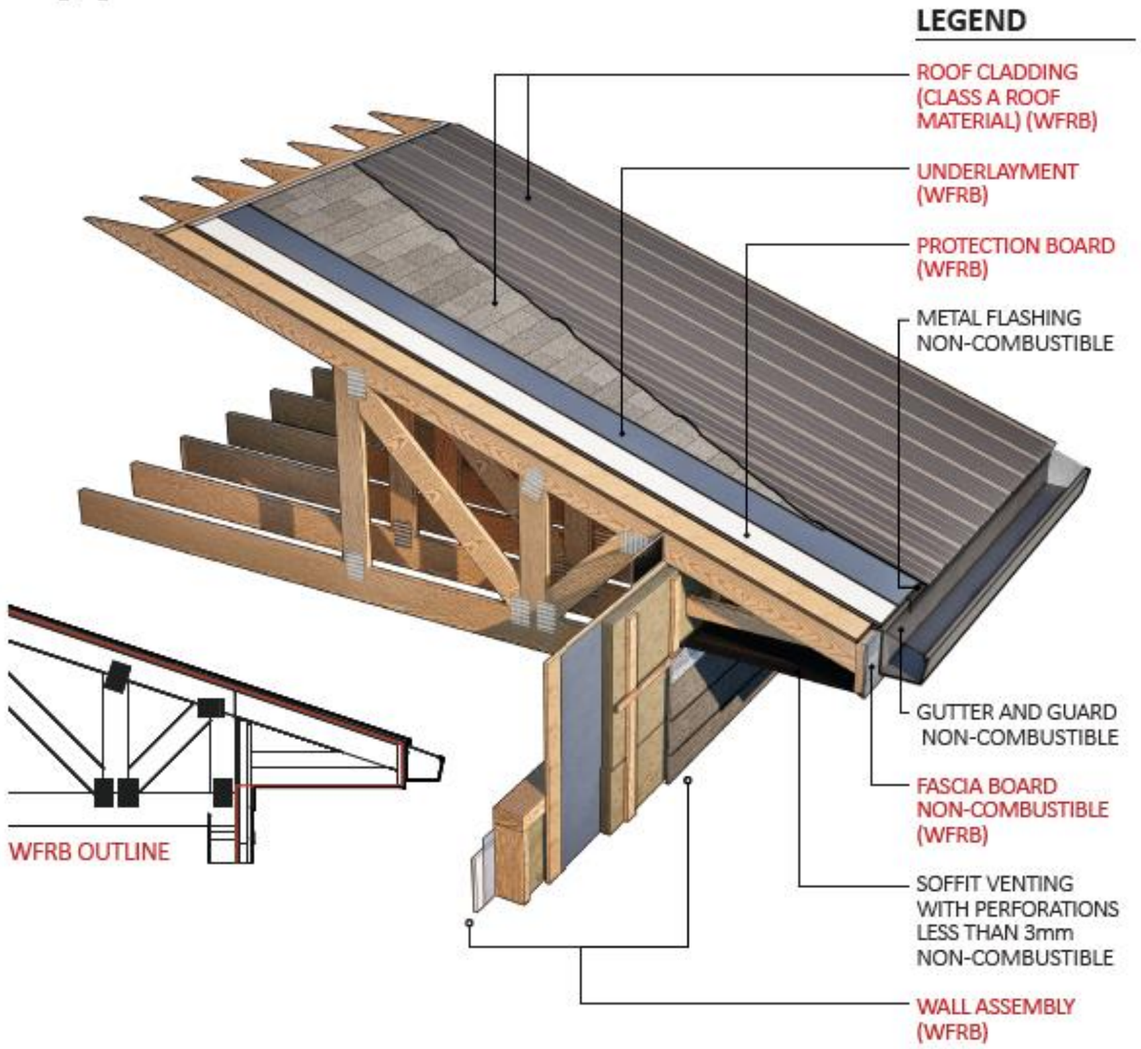
- **Class A rated roof covering**
  - (where metal is used, eave/ridge profiles are fire-stopped or additional layer of non-combustible cover board is installed below metal covering)

- **All roof flashing is non-combustible including valley flashing**

- **Eaves and soffits finished with non-combustible material**

- **All roof venting (soffits, ridge, gable-end, thru-roof, etc.) should be non-combustible material with maximum 3 mm (1/8”) ventilation holes or screened with 3 mm non-combustible mesh.**

Eaves and soffits within 10 m (33’) of adjacent combustible structures/high-intensity fuels are fully enclosed (no venting) with two layers of 16.5 mm (5/8”) Type-X gypsum and finished with non-combustible material or pass ASTM E2957

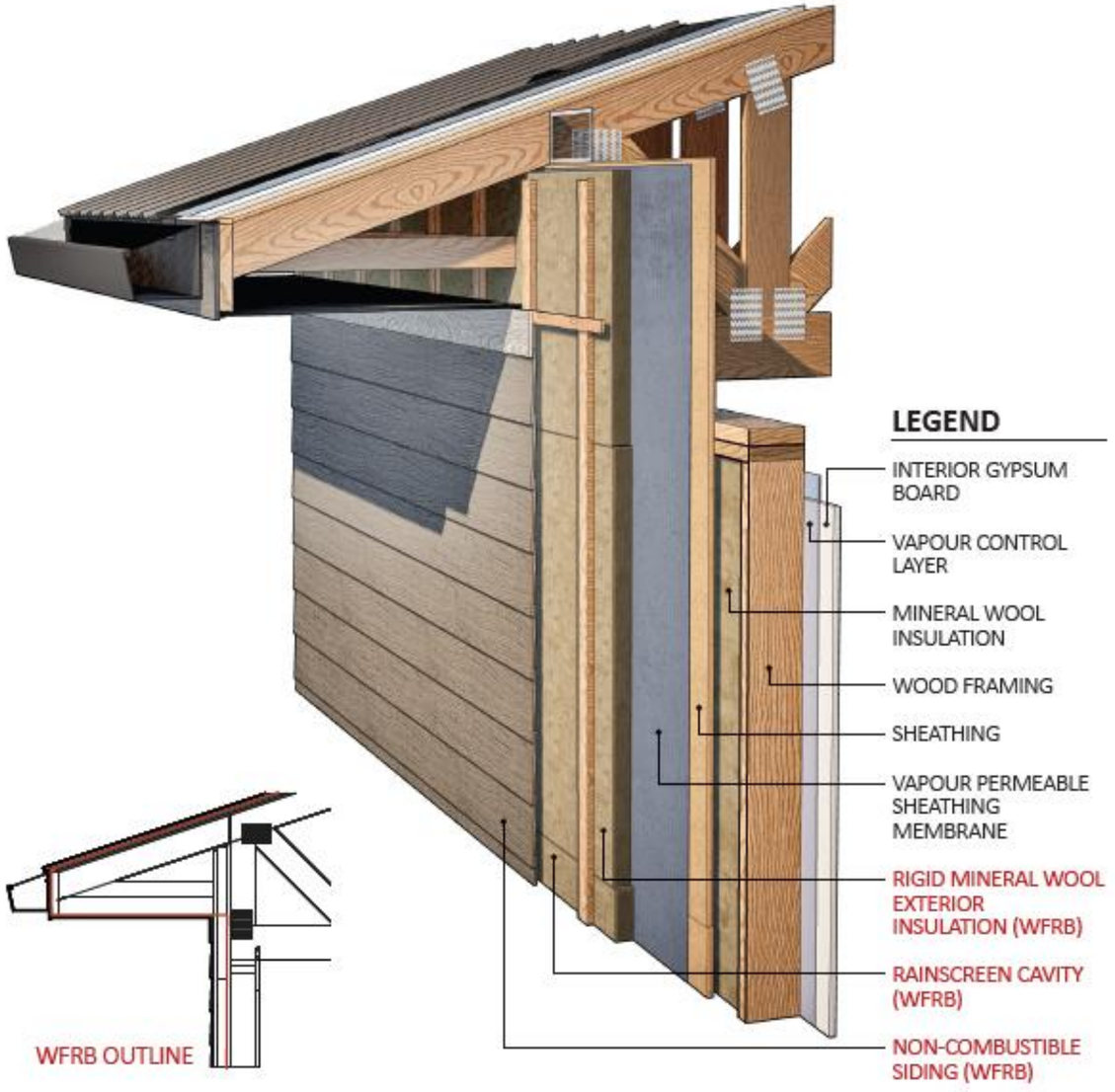


ROOF ASSEMBLY

- WildFire Resistant Barrier(WFRB)- Non-Combustible Or Ignition Resistant Building Material Layer, Increasing The Resistance Of The Building To Wildfires And Their Effects
- All Roof/External Vents Are Made Of Non-Combustible Material Covered With A 3mm Or Less Metal (Non-Combustible) Screen
- Soffits And Fascia Shall Be Made Of Non-Combustible Materials.
- Roof Penetrations Are Fitted With Non-Combustible Flashing.

Best Practices – Walls

- Walls are clad entirely with non-combustible material
- Walls do not have unprotected gaps larger than 3 mm (1/8”)
- Flashings are non-combustible material
- All exterior foam insulation is protected by a minimum 38 mm (1.5”) of mineral wool insulation or 16.5 mm (5/8”) Type-X gypsum



WALL ASSEMBLY

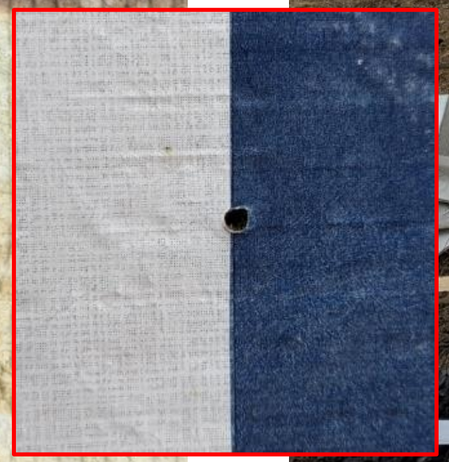
- WildFire Resistant Barrier (WFRB)- non-combustible or ignition resistant building material layer, increasing the resistance of the building to wildfires and their effects
- All material gaps 3mm or larger shall be sealed or screened with a 3mm or less metal (non-combustible) screen
- All trim shall also be non-combustible


Gypsum Sheathing - Core Wall
Exterior Insulated Mineral Wool
Unprotected

Wall 1 - Unprotected with Wood Siding & Vented Soffit

Wall 2 – Core Wall with Gypsum Sheathing and Vinyl Siding & Enclosed Soffit

Wall 3 – Exterior Mineral Wool Insulation with Fibre-Cement Cladding & Vented Soffit

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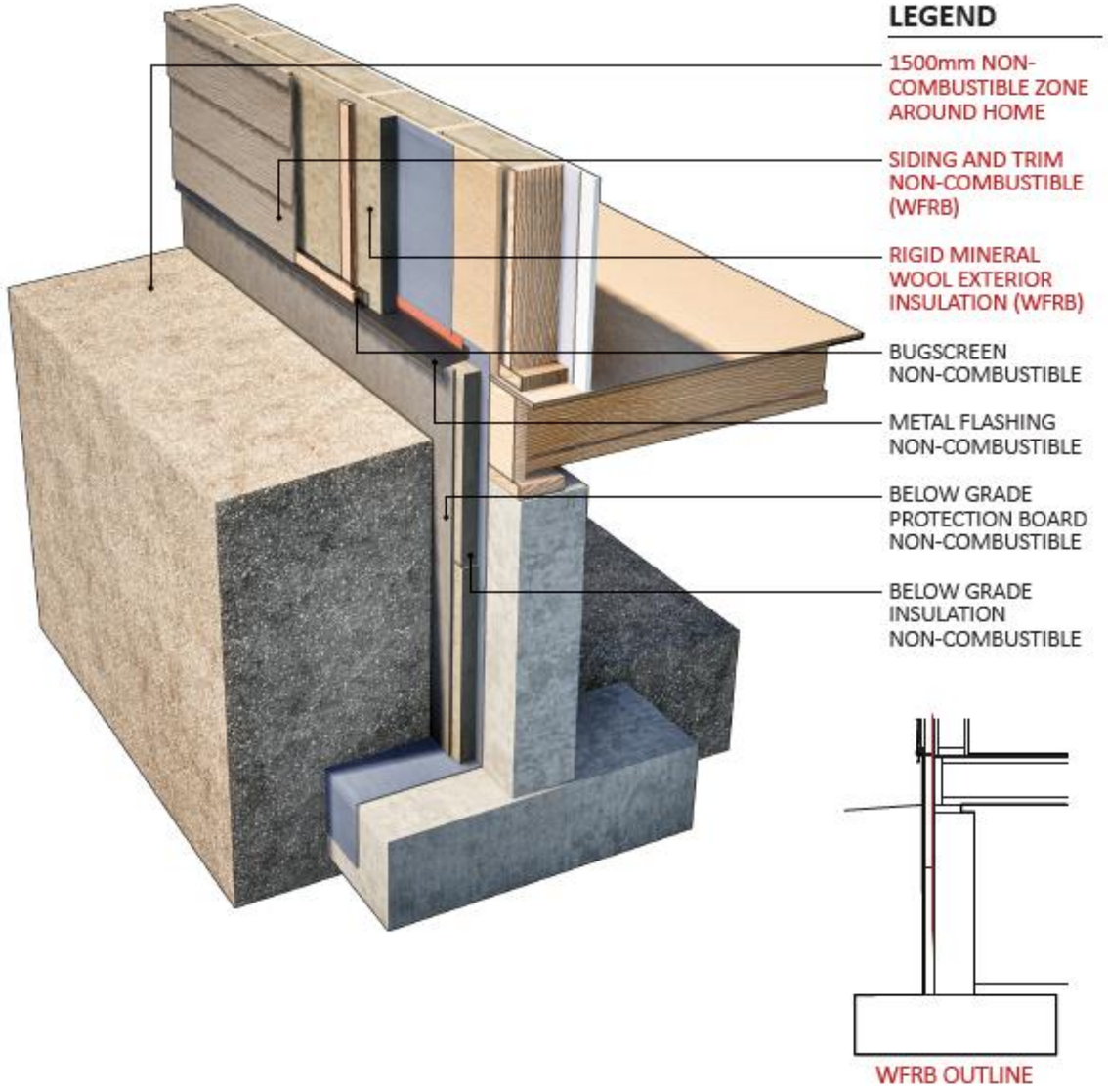
Best Practices – Wall Base

- **Any exposed foundation wall between the siding termination and *ground level* (grade) shall be non-combustible (minimum 150 millimetres). This should be applied to all homes whether building with a foundation, frost wall, or slab-on-grade.**

- **The exposed foundation and covering must be made of non-combustible material.**

- **It is recommended that any *Insulated Concrete Form (ICF)* foundation be covered with cement board and parging, or a non-combustible veneer.**

- Any *material gaps* over 3 millimetres must be sealed or a 3 millimetre metal (non-combustible) *screen* is to be placed over it.

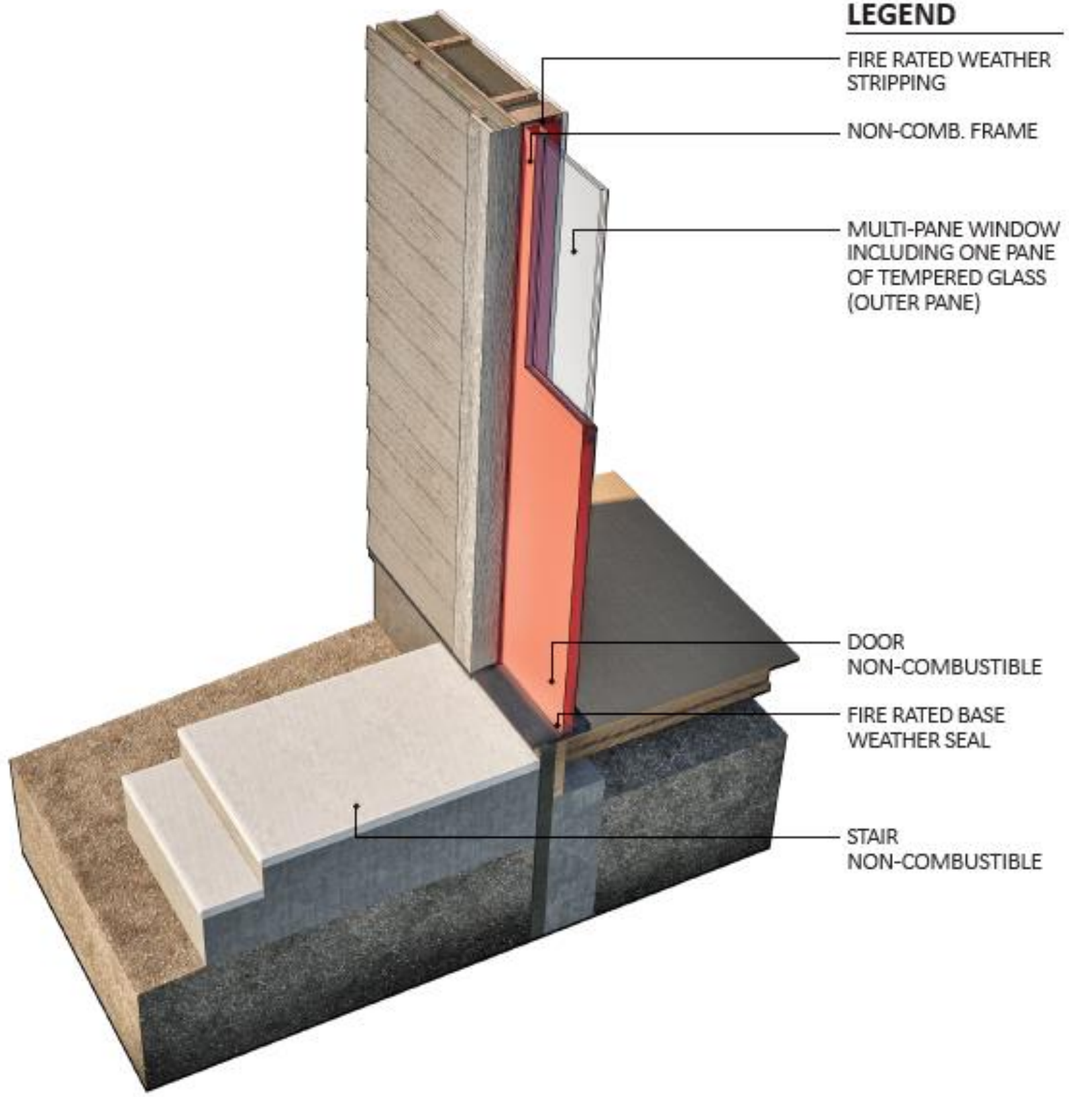


WALL BASE

- WildFire Resistant Barrier (WFRB) - non-combustible or ignition resistant building material layer, increasing the resistance of the building to wildfires and their effects
- All material gaps 3mm or larger shall be sealed or screened with a 3mm or less metal (non-combustible) screen
- The exposed foundation and covering must be made of non-combustible material.

Best Practices – Doors

- Multi-pane glazing with at least one tempered pane (preferably interior) for all exterior windows and doors.
- Ignition-resistant frames for windows and doors to reduce vulnerability.
- Ensure exterior doors have a non-combustible outer layer.
- Specify door slabs with a minimum 20-minute fire-resistance rating.



DOOR

- WildFire Resistant Barrier (WFRB) - non-combustible or ignition resistant building material layer, increasing the resistance of the building to wildfires and their effects
- Ensure all seals are tight, with no gaps or cracks. This includes the garage doors.
- Window and door frames should be a non-combustible finish (e.g. metal clad wood, fiberglass, thermally broken steel).
- If shutters are used, they must be made with non-combustible material.

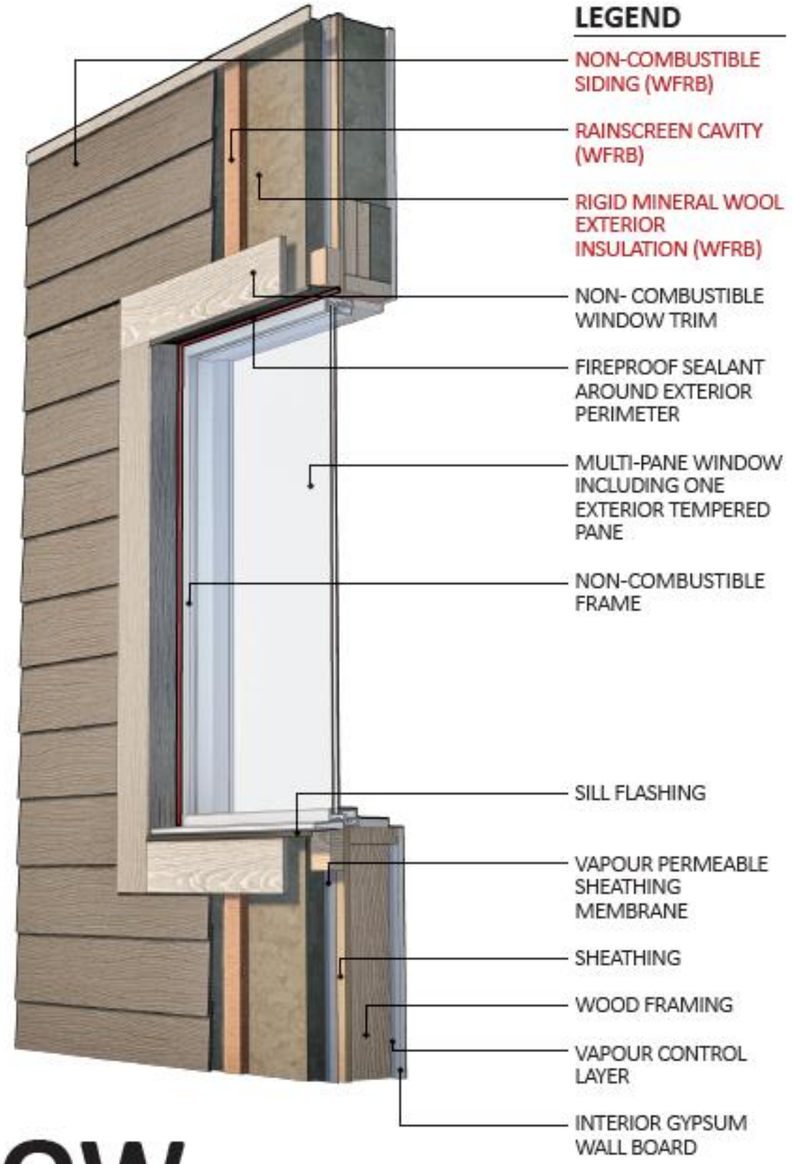
Best Practices – Windows

SAME AS PREVIOUS ADVICE FOR DOORS

- Multi-pane glazing with at least one tempered pane (preferably interior) for all exterior windows and doors.
- Ignition-resistant frames for windows and doors to reduce vulnerability.

IMPORTANT

- **Wildfire enters interior of building through failed windows**
- **Glass can fail when:**
  - **Exposed to extreme heat (radiant/flame)**
  - **Wind blown debris**
- **Frames can fail:**
  - **Deformation caused by extreme heat**
    - **Frame deformation**
    - **Between glass unit and separators/interlocks**
  - **Combustion caused by heat**



WINDOW

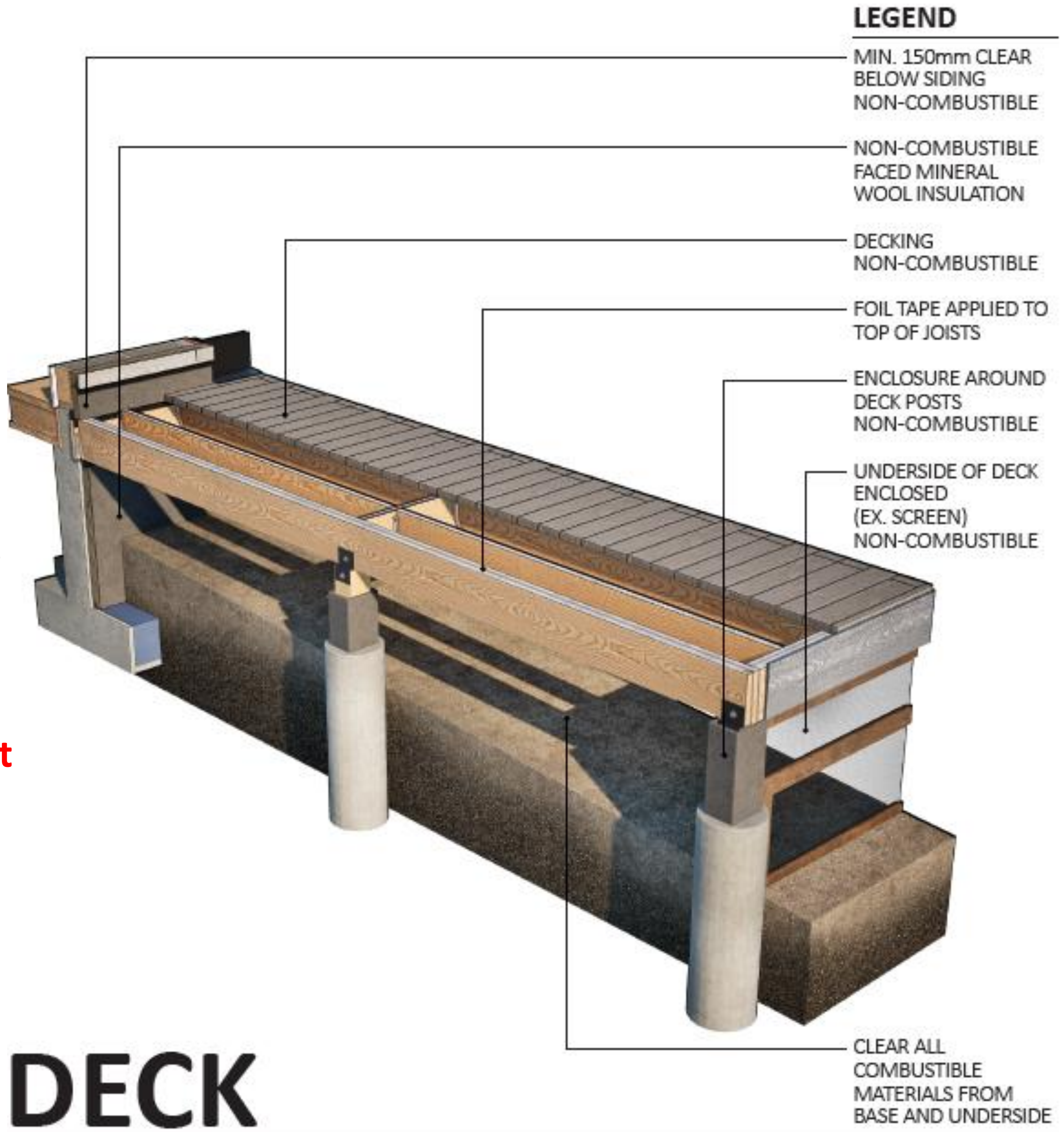
- WildFire Resistant Barrier(WFRB)- non-combustible or ignition resistant building material layer, increasing the resistance of the building to wildfires and their effects
- Ensure all seals are tight, with no gaps or cracks. This includes the garage doors.
- If shutters are used, they must be made with non-combustible material.

Best Practices – Decks

- **Decks and patios, constructed entirely of combustible materials* are not recommended**
  - Option 1: Don’t build a deck, build a landscape patio instead
  - Option 2: a Fully non combustible deck where the structure and decking are made from materials such as steel, aluminum, or concrete

If a non-combustible deck or balcony structure is not feasible:

- Ignition-resistant deck assemblies
  - Decks and Structures build with Class A Materials
- Ignition-resistant decking and combustible structure
  - decking and railing material are ignition-resistant, combustible structural members protected by non-combustible cladding.



DECK

IGNITION RESISTANT DECK WITH WOOD STRUCTURE

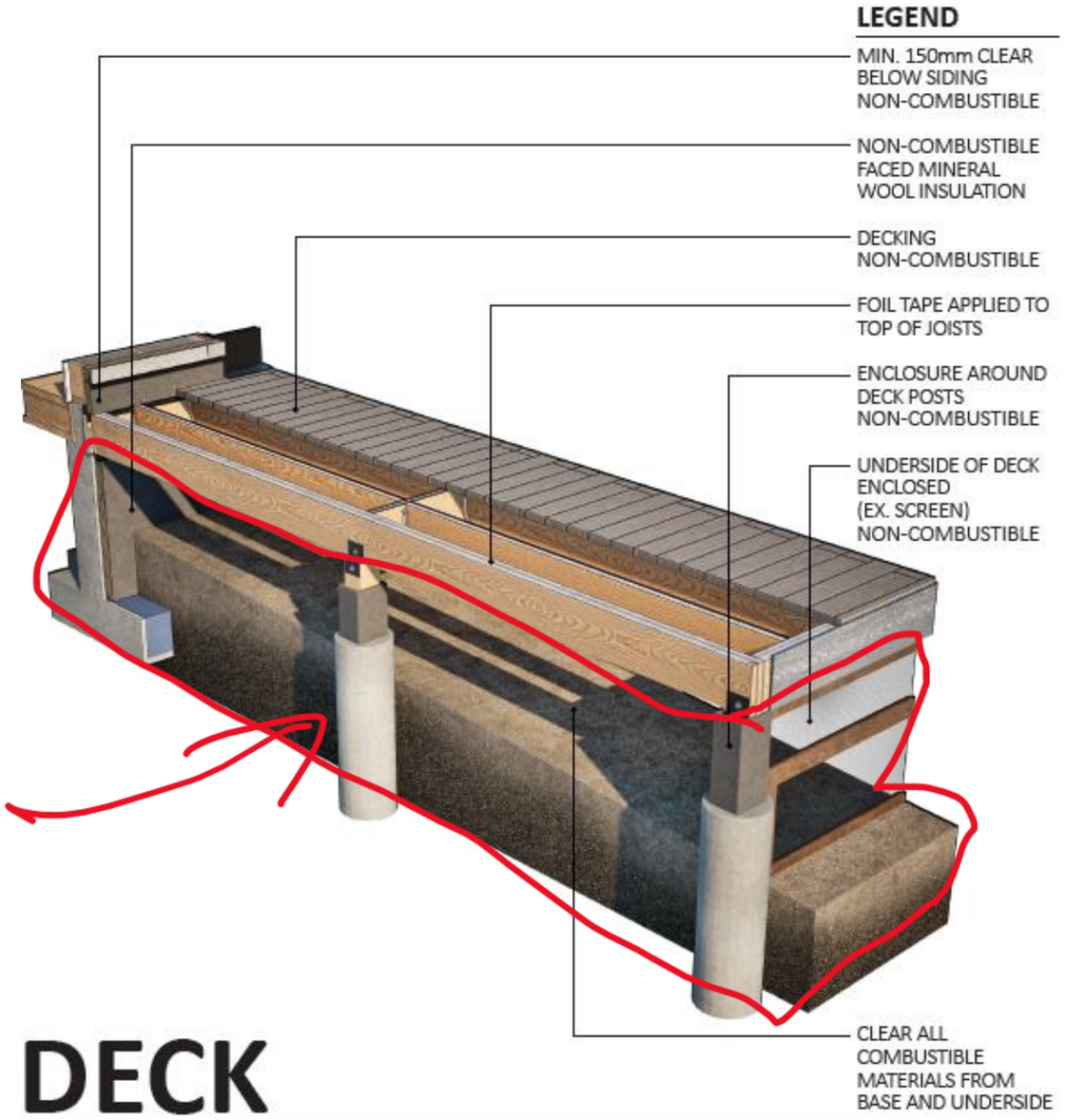
- All graded surfaces below decks, balconies, and other building attachments must be non-combustible
- Ignition-resistant decking and structural protection – decking and railing material are ignition-resistant, and exposed combustible wooden structural members that are protected by non-combustible cladding
- Deck railing should be made of non-combustible materials. A combination of heavy timber posts and metal rail may also be used in combination with metal spindles or glass inserts.

Best Practices – Decks

- All *graded surfaces* below decks, balconies and other building attachments must be non-combustible.

- The area under decks, balconies and other building attachments should be enclosed or screened with 3 millimetre (1/8 inch) non-combustible, non-corroding material.

DO NOT STORE ANYTHING UNDER YOUR DECK



Resources

Important:

1. Check [FireSmart Canada> Contact Us> Provincial and Territorial Liasions]
2. Contact Your Provincial and Territorial Liaison for Program Information

Programs differ slightly by Province:
For Example, in Ontario…

- Self assessments only
- Funding being provided to take Level 2

https://firesmartcanada.ca/

Questions?

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