The United States Forest Service has used aluminized structure wrap to protect critical structures from ember attack, radiant heat, and direct flame impingement for over 25 years.

Firezat has supplied over 600,000 Sq Ft to the Forest Service, Incident Management Teams, BLM, State and National Forests, private resorts and home owners over the last 4 years.

During Drought Conditions

Fire Shields Protect Homes, Cabins, Historical Buildings, and Businesses from Wildfire Without Water or Power

They are Reusable and Last for Years

Free Crews, Limit Firefighter Danger

Provide Extended Protection During Firestorms

Environmentally Friendly
During the Yellowstone National Park fires in 1988 historic structures were threatened and crews had to leave. They cut up their personal fire shelters and stapled them to the buildings. The buildings were spared.

The product remained undeveloped until Firezat reengineered it using modern technology to improve performance and availability to the general public.

In a recent Open Ratings Past Performance Evaluation Firezat received a 96% overall satisfaction rating from its federal buyers based on the following categories:

- Overall Performance
- Reliability
- Cost
- Order accuracy
- Delivery/Timeliness
- Quality
- Business Relations
- Personnel
- Customer Support
- Responsiveness

We will continue to work to earn their support.
Advantages

• **100 % Environmentally Friendly**
  - Can Be Deployed Well in Advance of Fire Threat and Left Up for Days or Weeks, Still Effective

• Requires No Water or Power to Protect

• Reusable- Can Be Moved & Redeployed

It’s Used When:

• Structure Protection is Too Dangerous for Crews

• Structures Require Protection from Firebrands

• High Value Assets, Historical and Homes are Threatened

• Water & Power is Scarce

• Time For Fire Arrival Varies Greatly

• Protecting Structures for Burn Outs- Preemptive
Fire Shields can be reused and stored for extended periods of time and will not support mold or mildew. They are resistant to acids, alkalis, & solvents with the exception of hydrofluoric acid.
Extreme Low Humidity 7 to 10%
High Temperatures and High Winds
Loss of Power, Water Pressure & Supply
Firebrands Travel Over a ½ Mile and Start Spot Fires
Limited Access via Roads or Air Support

- Most Wildfires Pass Through in Approx 3 to 5 Minutes with 2 to 3 Minutes of Preheating
- Firebrands Will Attack for Several Hours Before and After the Fires Arrival

Testing Shows:

Aluminized Structure Wrap Reflects 95% of the Radiant Heat
Unprotected Wood Exposed to 1157 °F Radiant Heat Burst Into Flame Avg of 34 Secs
Protected Wood After 10 Minutes Temp Only Rose to 212 °F, Far Below Auto Ignition Temp

Structure Wrap Protects Structures From Firebrands, Radiant Heat, and Limited Direct Flame Impingement

Structure Wrap Requires No Water or Power – Can Be Left Up For Days, Weeks, or Months

Structure Wrap is the Only Reusable Strategy. No Shelf Life, Effective from Deployment Until Taken Down
Radiant heat tests showed unprotected wood samples (kiln dried Cedar with 8 to 10% moisture content) exposed to 1157°F of radiant heat burst into flames in 34 seconds establishing a benchmark. Samples were then wrapped with Firezat Fire Shields and exposed to 1157°F of radiant heat for 10 minutes.

The temperature under the wrap rose to approximately 212°F and leveled off. Extrapolating the results, after 20 minutes exposure - temperature under the wrap would only rise to approximately 248°F, well below the auto ignition temp assumed to be approximately 575°F to 600°F and long enough for the fire to pass through.

This demonstrates that while protecting a structure from firebrands the reflecting properties of the Aluminum, which reflects 95% of the radiant heat, can protect a home, including windows, sliding glass doors, and vents from substantial radiant heat.

This temperature simulates a 16 foot tall flame with 19 feet separation or a 32 foot high flame with 65 feet separation. Similar conditions to having a neighboring home engulfed in flames.

Most Wildfires Pass Through in Approx 3 to 5 Minutes with 2 to 3 Minutes of Preheating

Due to the nature of wildfires Firezat makes no claims or statements as to the effectiveness or suitability of its products to protect any property or possessions from fire damage. See Disclaimer on Website for complete disclosure.
Cone Calorimeter Used for Evaluation of Firezat Samples

625°C (1157°F)

Exposed to 33 kW/m² Heat Flux 1157°F for 10 minutes

Off Gassing Within 10 Seconds. Igniter Simulates Firebrand

Bench Mark Flame Appears in 34 Seconds

Radiant Heat Test

Kiln Dried Cedar 8 to 10% Moisture Content
Thermocouples Measure Heat at Edge and Center

Unprotected Sample for Bench Mark
After 34 seconds exposure to this high heat, tests show unprotected cabin would ignite as wood reaches its flash temp approaching 575°F to 600°F. Example shows results if a 16' flame was within 19' of the structure.

After 10 minutes exposure to the same high radiant heat, tests show the temp under the shield would only rise to 212°F and after 20 minutes only 248°F. Far below flash temp. Allowing fire to pass through.

Note: Radiant temp is statistically the same and regulated by flame height and separation distance. Scenarios are interchangeable.
Firebrands are usually small pieces of burning branches that blow over ½ mile in the wind. It’s estimated 80% of structure fires are started by firebrands.

Steel transfers heat much more efficiently than wood and gives us a valid test to measure effectiveness. After 60 seconds only charring with no ignition is seen. When the nut is set on bare wood flames appear almost instantly.

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Durability Test

Tear Test to Gauge Strength

A force gauge is used to pull the shield material until failure.

A screw is placed 1” from the top and side and a hole drilled directly below in the same position.

The Standard Duty will tear at approximately 10 to 13 Lbs of force.

The Heavy Duty will tear at approximately 50 Lbs of force.

Both are strong enough to defend against wind and fire.

Estimated service life for HD material is approx 10 years or more with care in handling.
When to Use: 
Roll Material
- Railings
- Structure Supports
- Trees, Power Poles

When to Use: 
Fire Shields
- Roofs
- Walls
- Large Areas
- Fences

Fire Shields Protect
- Attic Vents
- Windows
- Eaves
- Sliding Glass Doors
- Fences
- Solar Panels
- Sky Lights
- Power Poles
- Propane Tanks
- Gazebos
- Bridges
- Trailers
- Trailers
- Airplanes
- Business Inventories
- Equipment
Next Generation Improvements

Larger Sizes & Shapes
- 75% Faster Deployment – With Better Coverage
- 75% Reduction in Manpower Required To Deploy
- Fewer Failure Points – Better Protection
- More Efficient Securing Options – Sandbags & Shield Bands

Heavier Foil & Substrate Material
- Better Protection From Firebrands & Radiant Heat
- Better Wind Resistance
- Improved Securing Options
- Increased Durability - Improved Reusability

Water Saturation Strategy (Soaker Hose Under Shields)
- Provides Additional Water Barrier
- Shields Protect H2o From Evaporation
- Significant Increased Fire Resistance & Heat Dissipation
- Requires Less Water in Remote Sites

Shield Bands
- Significant Wind Resistance Improvement
- Reduces Structure Damage
- Reduces Damage to Shields – Increases Reusability

Reusable – Extended Service Life
Environmentally Friendly
Crews were called back 3 times to replace wrap that blew off from wind.

Three Lakes Cabin AZ
Dated 1886

Larger shields can wrap the walls and entire roof with fewer seams and superior wind resistance. With up to 75% less man power and in 75% less time. After the event the shields can be rolled and stored for future threats.
# Structure Wrap Compared To Gels And Foam

## Gels & Foam
Good But With Limitations

- Requires Professional Application For Optimum Performance
- Requires a Significant & Reliable Water Supply – Pool, Pond, Lake, or River
- Electrical Generator & Pumps in Power Outage
- Water Pressure - 30 PSI Will Give You 10 Feet of Reach - Difficult to Apply in Strong Winds
- Must Be Applied Within a Couple Hours of the Fires Approach - Endangers Crews & Homeowners Waiting Until the Last Minute
- Gel Must Be Removed By Power Washing and Sometimes Power Steam Cleaning  
  Click For [Forest Service Gel Removal Report](http://example.com)
- Can Cause Discoloration of Older Painted Surfaces or Untreated Wood - Click for [Forest Service Effects of Gel on Structures](http://example.com)
- Limited Protection on Glass – No Protection of Attic Vents
- If Fire Front Stalls or Turns Gel Can Evaporate. Evacuations & Traffic Blocks May Prevent Rehydrating in Time

*Single Use Must Buy More For Next Threat*

## Structure Wrap

- Can Be Installed By Homeowners
- No Water Required
- No Pumps, Generators, or Power Required
- Can Be Installed Before Winds Pick Up - No Fear Of Evaporation
- Homeowners And Crews Can Deploy At First Sign of Danger In Hours
- Removal Is Fast & Easy
- Minimal Damage To Structure If Sandbags And Banding Are Used
- Can Be Left Up For Days Or Weeks With Zero Performance Loss
- Protects Attic Vents, Eaves, & Windows

*ZERO Negative Environmental Impact*

- Store For Next Use, Service Life Estimated At 10 To 15 Years For Homeowners

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During Fire Season Shields Can Be Moved Multiple Times In A Community or County To Where They Are Needed
Firezat Can Manufacture Custom Fit Fire Shields For Resorts, Historical Buildings, Cabins, Luxury Homes or Virtually any Shape or Structure Configuration.

Contact Us for Government Volume Pricing