



Wherever Wood Is Used™



FIRE MESH™

Fire Harden the Grid

The Genics logo features the word "genics" in a white, lowercase, sans-serif font on a green background. The letter "g" is stylized with a leaf-like shape.

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FIRE MESH™

Product Overview

Fire Mesh™ is the most widely used fire barrier in the utility market today. This industry-leading, patented technology allows utilities to protect their new and in-service wooden structures from damage caused by fire, eliminating the need for alternative materials in fire prone areas. Proven to perform for a minimum of 25 years globally, Fire Mesh™ can be applied to poles in any condition, regardless of weather, equipment, pole setting, species, or treatment.

Fire Mesh™ protected poles support the use of traditional maintenance and operational practices, with no impacts on climb-ability, hardware installation and pole inspection. A wood pole needs to achieve equilibrium and homeostasis with the climatic conditions associated with its placement; therefore, Fire Mesh™ has been designed to promote air exchange allowing the pole to breathe.

The ¼ open grid system provides visibility of the timber to which the product adheres while eliminating the potential for moisture entrapment within the wood. By combining state-of-the-art polymers with innovative fire-resistant compounds, Genics™ has created the most durable, high performing exterior application fire protection available on the market. The positive environmental and safety profile of Fire Mesh™ poses no threat to utilities, installers, communities, wildlife, or the environment.



Technical Summary (including 3rd party data and research)

Fire Mesh™ is the only intumescent mesh offered on two different base substrates: galvanized steel and fiberglass. The information below pertains to both products.

Fire Mesh™ contains no solvents, formaldehyde, halogens, or sulfates.

Fire Mesh™ Specifications

Chemistry composition

- Expandable graphite
- Hydrophobic, UV resistant acrylic co-polymer
- Ammonium polyphosphate

Fire Mesh™ (Genics' product number 53075)

- 3'x50' roll
- 23-gauge ¼" galvanized steel mesh
- 38-lb. minimum weight/roll

Fire Mesh™ (Genics' product number 53076):

- 3'x50' roll
- ¼" woven fiberglass mesh
- 28-lb. minimum weight/roll

Fire Mesh™ Research Institutions

Genics has conducted research and testing with the following research institutions:

- FPIinnovations
- Oregon State University
- Western Fire Center
- Lineman's Testing Laboratories of Canada
- Powertech Laboratories
- Southwest Research Institute
- Innotech Alberta
- University of Toronto
- EDM
- Louisiana State University
- University of Hawaii
- Canadian National Research Council



Fire Mesh™ Performance Against Fire

Fire Mesh™ will form a barrier by expanding at temperatures greater than 300°F/150°C to protect the wooden structure from fire damage. The mesh is coated with a durable intumescent polymer that allows the wood to breathe and maintain its moisture equilibrium with the environment. Fire Mesh™ has undergone rigorous third-party testing to satisfy industry and utilities' standards. As a result, Fire Mesh™ has proven to be highly effective against all different fire intensities and fuel loads.

Western Fire Center

- ASTM WK 63252 - Simulated wildfire test. Poles were subject to over 60 gaff marks across the pole prior to fire test.
- The proposed ASTM standardized test is developed to simulate wildfire conditions, and it is one of the toughest fire tests for materials to pass. A 2.1m pole sample is exposed to a radiant heat panel (see Figure 1 below) set at 980°C (Heat flux of 50 kW/ m²) for 5 minutes. After 5 minutes, a ring burner set at the base of the pole is ignited for an additional 5 minutes along with the heat panel. The test is concluded either when the temperature of the test specimen drops below 50°C or if the specimen goes to failure and burns.

Results:

- Fire Mesh™ performed as intended across all scenarios. Poles sustained between 0.79%-2.82% strength loss post-fire. Strength loss is calculated based on concentric and unicentric calculation and char depth analysis.
- The temperature of a pole wrapped in Fire Mesh™ fell below 50°C/122°F only 8 minutes after the removal from the flame and 980°C/1800°F panel. The control sample in this same test was deemed to have undergone catastrophic failure and remained above 50°C/122°F for over 4 hours. After several tests using different species, age of poles and initial treatment of poles, it was found that poles wrapped with Fire Mesh™ indicated that no flame was sustained beyond the removal of the ring burner. Results were consistent even when gaffed extensively pre-fire.



Southwest Research Institute:

- Full-scale wildfire simulation test
- Full-length pole placed in a metal culvert with propane burners at ground level, exposing the pole to 2100°F for a 2-minute and 3-minute duration. Full-length break tests were done to evaluate strength loss due to fire and heat degradation.

Results:

When comparing the break test results, Fire Mesh wrapped poles showed no strength loss in a break test when compared to a pole not exposed to fire.

ENA Pole Fire Test Method:

- A simulated bush fire test with extreme loading of wheat straw around the Fire Mesh™ wrapped pole and the pole is ignited. It is a 4 to 5-minute test.

Results:

Poles wrapped with Fire Mesh™ demonstrated negligible strength loss is measured based on unicentric and concentric char depth analysis.

Oregon State University:

- Small Scale Fire Test.

Results:

Poles wrapped with Fire Mesh™ demonstrated negligible strength loss is measured based on unicentric and concentric char depth analysis.

ASTM E84:

- Standard Method for Surface Burning Characteristics of Building Materials.

Results:

Fire Mesh™ achieved a flame spread rating of less than 5 and a smoke developed rating of less than 45. Class A/Class 1. This makes Fire Mesh™ the top performing product in its class.

Fire Mesh™ Weathering Data

ASTM G154:

- Standard Practice for Operating Fluorescent UV Lamp Apparatus for Exposure of Materials:
An accelerated weathering test is used to determine the service life of test materials. After hours of constant UV, high temperatures, humidity and condensation, Fire Mesh™ had no performance loss.

Results:

Accelerated weathering testing demonstrates Fire Mesh's™ performance is unhindered by 25 years of real-world weathering.

Fire Mesh™ - Environmental and Disposal

The key components in Fire Mesh™ include the acrylic co-polymer, expandable graphite, and ammonium polyphosphate. There are no toxicological concerns with the chemical composition of Fire Mesh™.

U.S. Federal Regulations: Fire Mesh™ is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. Landfill disposal decisions are guided by regulatory groups such as the U.S. Resource Conservation and Recovery Act (RCRA). Under RCRA guidelines, no ingredients in Fire Mesh™ are considered hazardous. Fire Mesh™ can be disposed of as construction waste and can be discarded in any municipal construction waste landfill. Fire Mesh™ is not considered to be a hazardous waste and is categorized under the acceptable waste criteria of landfills in California as per Waste Management Authorities.

Fire Mesh™ - Manufacturing and Quality Control

- Each roll of Fire Mesh™ is manufactured under a stringent quality control program based on the following parameters:
 - Finished product weight
 - Density, viscosity, and solids content
 - Expansion rate
- Intertek Third-Party Quality Control Certification: Fire Mesh™ is a UL listed product (SPEC ID: 39080) and carries the Warnock Hersey logo. Intertek is a third-party quality control certifying body that ensures all testing equipment calibration is up to date and that each individual roll meets the minimum approved requirements.



Fire Mesh™ - Installation Instructions

It is recommended that Fire Mesh™ be installed to a minimum of double the vegetation height at full maturity around the pole.



Fire Mesh™ - Storage and Handling Instructions

- Fire Mesh™ can be stored indoors or outdoors and does not have a shelf life.
- In the event of a fire, handling of activated Fire Mesh™ poses no environmental health and safety risks.
- The activated material is primarily composed of carbon, based on the expandable graphite within the Fire Mesh™.

Fire Mesh™ Installation Procedure

1- Measure groundline circumference of the pole and add 2" to accommodate for an overlap on the seam, excavate a short depth around the groundline to ensure Fire Mesh is fully buried below ground.

2- Cut the desired number of panels as per the installation specification of the asset owner.

3- Climb/lift up to the required height of installation and secure the first panel using staples, ensuring Fire Mesh is tightly installed to the pole.

4- Install the next panel with a minimum 2 inch overlap over the previously installed panel above this one to ensure the correct overlapping pattern.

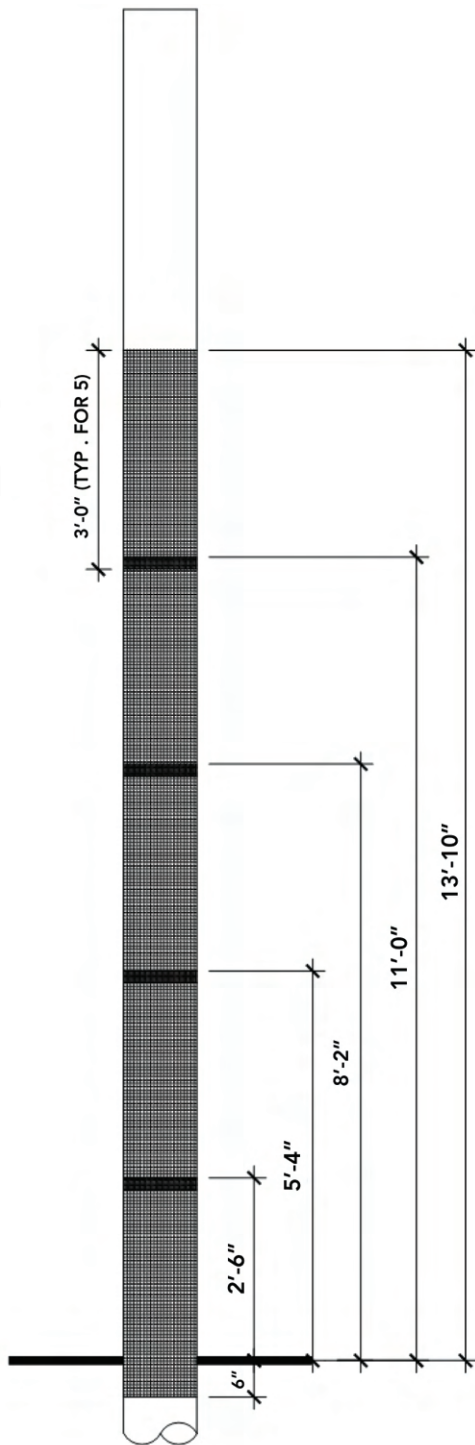
5- Continue to install the remaining panels down the pole until the groundline region is reached.

6- Ensure vertical overlap between each panel is such that the top panel is inserted into the panel of Fire Mesh™ directly below it.

7- ENSURE FIRE MESH IS INSTALLED TO A MINIMUM HEIGHT OF 6" BELOW GROUND

Note:

The schematics presented are intended solely for reference purposes, serving as examples for illustrating configurations of overlap and vertical stacking of Fire Mesh to mitigate the impact of diverse fuel loads surrounding the pole.

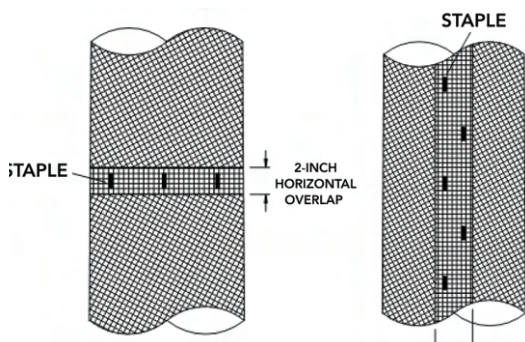


Staples Requirements

1 to 1.5" length and 3/4 - 1" crown, galvanized staples

Minimum vertical overlap is 2 inches, with staples spaced in a zipper pattern every 4 inches to 6 inches along seam and staggered 1 inch and 4 inches from edge.

Horizontal overlap is 2 inches, with staples spaced every 4 inches to 6 inches along the seam.





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Ensure the use of proper PPE as per the label, SDS sheet, State guidelines.

This product is manufactured in an ISO 14001 facility.



Genics is an industry leading manufacturer of wood preservatives and fire-retardant technologies. Genics provides environmentally responsible and innovative products. "Wherever Wood is Used"



📍 27717 Acheson Rd. Acheson, AB Canada T7X 6B1
📞 780.962.1000 | 📧 info@genicsinc.com | 🌐 www.genicsinc.com