

May 09, 2024

WILDFIRES CAN BE PREVENTED WITH HEAT SHRINK ALTERNATIVE

Wildfires are a growing problem. Want proof? [The National Interagency Fire Center](#) has been keeping statistics on wildfires since 1983. Since that time wildfires have increased by 223%. In more recent history, wildfires increased between 2019 and 2021 by 17%. Over 10 million acres were burned by wildfires in 2020 alone.¹

As the leading provider of weatherproofing products in the telecommunications industry we are accustomed to discussing products that will be used on cell phone towers, on buildings and rooftops, etc. What has surprised us however, (initially anyway), is that in recent months more companies have started looking at heat shrink alternatives. The primary reason? Wildfires.



The more we investigated the issue, the more sense it made to get away from heat shrink in outdoor applications. Nearly 85% of wildfires are started by humans according to the [U.S. Forest Service Research Data Archive](#).² The [National Park Service](#) states that most of these fires “result from campfires left

unattended, the burning of debris, equipment use and malfunctions, negligently discarded cigarettes, and intentional acts of arson.”³

So, how do humans do a better job of preventing these devastating wildfires? Issues like unattended campfires, the burning of debris, and negligently discarded cigarettes are largely matters of education, (just ask Smokey Bear). Arson must obviously be dealt with as a criminal issue. Equipment use and malfunctions however, present glaring issues that can be handled better. And unfortunately, equipment use and malfunctions have resulted in some of the largest wildfires in United States history.⁴

223%

INCREASE IN WILDFIRES SINCE 1983 IN THE UNITED STATES

17%

INCREASE IN WILDFIRES FROM 2019 TO 2021 IN US

85%

PERCENTAGE OF WILDFIRES IN THE US CAUSED BY HUMANS.

Unfortunately, California is a prime example of wildfires resulting from equipment use and malfunctions. Just last year, the Dixie Fire burned nearly 1 million acres and over 1,300 structures, including the whole town of Greenville,

CA. Investigations now show that a tree that should have been removed, fell across a powerline operated by Pacific Gas & Electric (PG&E), sparking the fire. However, the powerline in question was part of a 10 mile stretch set to be buried⁵, a move which would have prevented the fire altogether.

The Dixie Fire adds to PG&E's already poor record with wildfires over the last several years. In 2020, PG&E pleaded guilty to 84 counts of involuntary manslaughter for having started California's massive Camp Fire in 2018. Former PG&E CEO and President, Bill Johnson made PG&E's fault in the matter plain when he said, "Our equipment started that fire."⁶ Butte County District Attorney Mike Ramsey, who put together a report about the 2018 Camp Fire, stated that PG&E was guilty of "reckless behavior," and that PG&E's use of badly outdated technology was "evidence of absolute indifference."⁷

Some critics will point out that California's forest management also plays a role in these wildfires, which is a valid point. California's lack of forest management creates a large amount of fuel for these fires, with experts estimating that California needs to improve its forest management efforts to "around ten times its current level."⁸

BUSINESS RAMIFICATIONS

How well a state deals with forest management issues, however, is outside of a company's control. What should matter to companies are the liability issues. PG&E has faced "tens of billions of dollars in potential fire liabilities," leading them to file for bankruptcy in 2019. PG&E has since restructured their debts, agreeing "to pay \$25.5 billion in fire-related claims."⁹ Just last month, PG&E agreed to another \$55 million dollar settlement in relation to the Dixie and Kincaide Fires.¹⁰

Wildfires can be absolutely devastating, destroying property, livelihoods, and in some cases, even human lives. That should be reason enough for businesses to take as many preventative measures as possible. From a purely financial perspective however, the cost of upgrading to better, wildfire preventative

equipment and practices surely costs less than the millions and potentially billions of dollars lost to wildfire related claims.

Just ask PG&E. Shortly after the Dixie Fire started, the company announced a plan to bury 10,000 miles of power lines so they won't spark wildfires. The plan had apparently been in the works but was expedited by several months after the start of the Dixie Fire. As PG&E's CEO, Patricia "Patti" Pope said to reporters on the day of the announcement, "It's too expensive not to do it. Lives are on the line."¹¹

THE HEAT SHRINK PROBLEM

All this leads us back to heat shrink tubing. An easy, wildfire preventative measure that many companies could start making right away is to stop using heat shrink tubing in outdoor applications. More specifically, if the heat shrink is being *installed* outdoors than it should be replaced with an alternative product that does not require a blow torch or heat gun to install. California is already urging companies to make this standard practice and it's completely understandable as to why.

Heat shrink tubing is typically used in these outdoor applications as a protective measure. To make sure that electrical connections keep out water and weather in general, heat shrink is installed over mated connections. The heat shrink adds a protective layer to ensure the connection is not interfered with, keeps water out, stays mated, etc.

As a heat shrink tubing company, we don't like to see heat shrink tubing being phased out, but from a safety perspective it makes too much sense. This is especially true when you consider the U.S. Department of the Interior's "10 Tips to Prevent Wildfires." Number 8 on that list states to "Keep Sparks Away from Dry Vegetation," and to "make sure you never operate equipment that produces sparks near dry vegetation."¹² Using a blow torch or heat gun is quite literally

doing the opposite from what the Department of the Interior recommends. Using a blow torch or heat gun in such scenarios could easily be considered reckless.



All of this may seem obvious, but unfortunately, heat shrink is still seeing regular use in compromising situations. For example, there are cable boxes all over the United States in which heat shrink is being utilized. These cable boxes are outdoors and can be found frequently, very frequently. You have more than likely seen some of these boxes, (many of them are green), which house cables and connections that contractors need access to. By the nature of their locations these boxes are often found around dry vegetation. Heat shrink is being installed via blowtorches or heat guns inside these boxes regularly.



For those who might be wondering, yes, blowtorches are quite often used instead of heat guns. The reason being, heat gun batteries are not known to last very long and having multiple batteries can add up, (in terms of cost). It's far more cost effective to have a blowtorch, as propane is far cheaper than batteries for a heat gun and the blowtorch is going to give you much more "bang for buck." What this really means is that blowtorches, or open flames, are regularly being used around dry vegetation.

In truth it's a miracle more fires have not been started by means of heat shrink installation. That's a credit to the contractors using these tools. However, if you were to speak to these contractors, (as we have), they too prefer getting away from the use of heat shrink tubing. After all, the contractors understand it only takes one bad heat shrink installation to start a fire and they don't want to bear the responsibility for a fire.

WHY DOES HEAT SHRINK CONTINUE TO BE USED?

The simple answer is cost. Heat shrink tubing alternatives admittedly cost more and there are a lot of connections out there which do need to be covered and protected. It's understandable that companies are trying to save money, but that savings quickly disappears as soon as a fire breaks out. The larger the fire the more foolish that decision looks.

LOOKING AT HEAT SHRINK ALTERNATIVES

As stated previously, Gamma Electronics is a heat shrink tubing company. We started out as a heat shrink tubing company and we continue to be a leading heat shrink supplier for numerous industries.

In outdoor applications like those described above however, we strongly encourage customers to look at an alternative like cold shrink tubing, which requires no heat to be installed. In fact, cold shrink does not require *any* tools for installation, and it can be installed in seconds. Cold Shrink tubing is the most similar product to heat shrink tubing in terms of functionality, and has become the product that our customers have turned to when heat shrink isn't an option. Even better, we have already manufactured cold shrink solutions sized for the cables and connections in the aforementioned, green cable boxes.

Of course, there are other alternatives, including slide locks, (a type of clam shell enclosure), and silicone rubber boots. These can be extremely specific however in terms of needing to match both a cable and a connector in order to provide a watertight seal.

COLD SHRINK TUBING



In outdoor applications like those described above however, we strongly encourage customers to look at an alternative like cold shrink tubing, which requires no heat to be installed. In fact, cold shrink does not require *any* tools for installation, and it can be installed in seconds. Cold Shrink tubing is the most similar product to heat shrink tubing in terms of functionality, and has become the product that our customers have turned to when heat shrink isn't an option. Even better, we have already manufactured cold shrink solutions sized for the cables and connections in the aforementioned, green cable boxes seen above. [Learn More about Cold Shrink Tubing](#)

SLIDE LOCKS & RF WEATHERPROOF BOOTS

Of course, there are other alternatives, including slide locks, (a type of clam shell enclosure), and silicone rubber boots. These can be very specific however in terms of needing to match both a cable and a connector in order to provide a watertight seal.

[Learn More about Slide Locks](#)

[Learn More about Weatherproof Boots](#)

MAGIC TAPE (SELF-AMALGAMATING TAPE)



Another alternative is Magic Tape, (often referred to as self-amalgamating tape). Magic Tape is a cut-to-size solution that could see implementation right away. Magic tape adheres to itself and does not require heat or adhesive to create a watertight seal.

Learn More about Magic Tape

CONCLUSION

Companies, and more specifically utility and cable companies, may very well continue to use heat shrink tubing outdoors, but it only takes one fire before it becomes obvious that doing so was a bad idea. Many companies love the low cost of heat shrink, but when you consider the literal billions of dollars that can quickly accrue from fire-related claims, is it worth it? Using heat shrink in outdoor scenarios is reckless. Heat shrink alternatives might be more expensive, but they will only save you money and headaches in the end.

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