PALAPAS SINTÉTICAS DE MÉXICO

FIRE PERFORMANCE OF SYNTHETIC THATCH



NATURAL THATCH AND TROPICAL ROOFING

Natural thatch used in palapas and tropical roofs is part of the tourism landscape thanks to its appearance, cooling effect, and connection to the beach environment.

- Hotels, restaurants, and beach clubs
- Parks, terraces, and gathering areas
- Roofs designed to create a warm, handcrafted look

Its aesthetic and cultural value is undeniable. However, natural palm thatch also has limitations worth understanding before choosing it as a roof covering.

FIRE
Highly combustible plant-based material

WATER AND LIGHT LEAKS
Loss of natural thatch density

MAINTENANCE
Periodic pest treatments and replacement of natural thatch

PESTS AND WILDLIFE
Snakes, scorpions, and other animals that nest in natural thatch





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VULNERABILITY OF NATURAL THATCH

Palapas built with organic plant materials, such as natural palm leaves or grass thatch, catch fire very easily.

Debris from fireworks, embers from grills, and cigarette butts are among the most common causes of accidental palapa fires.

When this happens, flames can spread so rapidly that enormous palapas, even at well-known hotels, have been completely consumed within seconds, leaving insufficient time to react.

Moreover, burning embers released during a fire can be carried by the wind and ignite an adjacent palapa, causing the fire to spread further. The smoke and gases generated when these materials burn are also extremely harmful when inhaled.

An electrical short circuit or direct exposure to heat or flames can also cause major fires.

These conditions prompted the search for alternatives that could preserve the tropical appearance while avoiding the serious disadvantages and risks of natural materials. This led to the development of synthetic thatch.



Incendio consume palapas y hoteles en Holbox, Quintana Roo Destacado

Incendio consume palapas del hotel Grand Palladium, en la Riviera Maya

Autoridades no reportan heridos, pero sí daños materiales de miles de pesos



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THE ORIGIN OF SYNTHETIC THATCH

Synthetic thatch emerged as an alternative to the natural materials traditionally used in palapas and tropical-style roofing. It offers the following benefits:

- Provides different levels of fire protection
- Prevents water and light leakage
- Eliminates periodic replacement of plant material
- Eliminates pest-control treatments and maintenance work
- Eliminates unwanted wildlife
- Maintains an attractive appearance for longer

Synthetic thatch does not decompose like plant material and has the following attributes:





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FIRE PERFORMANCE OF SYNTHETIC THATCH



Because synthetic thatch was developed as an alternative to reduce fire risks associated with the high combustibility of natural thatch, it is essential to analyze how it behaves when directly exposed to flames. This includes not only its ability to limit combustion but also the potential effects of the chemicals used in its manufacture.

One of the most common comparative tests for synthetic thatch involves applying a direct flame to a sample with a torch for 30 seconds. Once the flame is removed, the time required for combustion to stop is measured, based on the assumption that faster self-extinguishing indicates better fire performance.

These tests typically show the following results:

- The area directly exposed to the flame is damaged and becomes unusable in every case;
- The flame remains confined to the area directly exposed;
- The fire does not intensify or spread beyond the exposed area;
- The time to self-extinguish varies, but in every case the flame goes out once the heat source is removed.



The major difference observed is smoke generation.

Some samples produce large amounts of smoke from the moment they are exposed to fire, and continue to emit smoke even after the flame has gone out.

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PREVENTING HEALTH RISKS

This issue deserves particular attention because inhaling smoke and potentially toxic gases during a fire poses a serious risk to health and life. Fire safety in synthetic thatch should therefore be assessed not only by how quickly a flame goes out, but also by the amount of smoke generated by the chemicals used to slow combustion and the risks associated with smoke inhalation.

The goal is not merely to make a material self-extinguish faster, but to develop a product whose behavior in a fire helps reduce risks to people.
To address these risks, we developed two different formulations designed to slow combustion and limit the spread of fire according to the protection level of each version. Because the chemicals used in this process can release gases and odors when exposed to flames, some of which may be harmful to health, we prioritized the following goals:

- **Prevent a heat source from spreading the fire, allowing more time to evacuate and extinguish it.**
- **Reduce health risks to people and other living beings from inhaling smoke and fumes released when the material is exposed to fire.**





Smoke tests of our product





Competitors' smoke tests

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TYPES OF SYNTHETIC THATCH WE DEVELOPED

For these reasons, before bringing our products to market, we set out to develop an appropriate solution for each level of risk, recognizing that the heat generated by accidental ignition sources differs from that produced by deliberate acts of arson.
Because not all risks are alike, we developed two levels of protection for our synthetic thatch, taking into account the different sources and intensities of heat to which it may be exposed. The most common risks arise from everyday accidents, while exceptional conditions require greater protection.
After conducting numerous tests and developing different formulations and raw-material combinations, we arrived at two solutions with different levels of protection, each designed for a specific type of risk.

SPARK-RESISTANT THATCH

Designed to withstand accidental ignition risks to palapas, such as fireworks debris, charcoal embers, candle sparks, and other incidental heat sources.





THATCH WITH ENHANCED FIRE-RETARDANT PROTECTION

Designed to withstand more severe situations, such as fires spreading from adjacent areas or deliberate attempts to start a fire. It provides a higher level of protection by inhibiting combustion and slowing the spread of fire when exposed to more intense heat sources.



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The indiscriminate use of chemicals to prevent combustion can cause the release of large amounts of smoke and toxic fumes. When inhaled, these can make breathing difficult and cause severe burns to the respiratory tract, potentially resulting in death.

OUR COMMITMENT

At Palapas Sintéticas de México, we believe it is essential to manufacture products that combine quality, durability, strength, and favorable fire performance.

Above all, however, we believe that protecting human life and health must come first.

For this reason, our commitment goes beyond developing synthetic thatch that resists ignition and slows the spread of fire. We also recognize the importance of minimizing smoke generation and the risks of inhaling potentially harmful gases, helping protect the health of people and other living beings.





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