

ABOUT FIRE RETARDANT

It is common knowledge that palapas made of palm or natural thatch catch fire very easily. Firework debris, embers from grills, or cigarette butts are the most common causes of accidental palapa fires. The fire spreads so rapidly that enormous palapas belonging to well-known hotels can be consumed in a matter of seconds, leaving no time to react. There is also the risk that the burning embers will fly through the air and, if they reach an adjacent palapa, the fire will spread even further. Not to mention that the smoke and odors released during burning are very harmful to anyone who inhales them. A short circuit or direct exposure to fire can also cause a large-scale blaze.

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

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



Incendio consume palapas y hoteles en Holbox, Quintana Roo Destacado



To counteract this danger and prevent accidents, synthetic palm has emerged on the market as an alternative material. It contains integrated chemicals that "retard" combustion, preventing the fire from spreading as quickly as it does in natural palm, thus providing more reaction time to combat a potential accident.

The chemicals used in this process are of vital importance due to the reaction that occurs when exposed to a heat source such as fire. Therefore, it is necessary to meet two fundamental requirements:

Preventing the heat source from spreading the fire to allow more time to evacuate the area and extinguish the blaze.

Preventing the smoke and odors generated when the material is exposed to fire from endangering people's health.

The indiscriminate use of fire suppressants can release highly toxic odors and fumes, which are extremely harmful to health when inhaled for the following reasons:

They spread very quickly, and the resulting odor and smoke quickly fill the entire area;

They are hot gases that make breathing difficult and cause burns to the lungs and respiratory tract;

They reduce oxygen levels by producing carbon monoxide, resulting in asphyxiating and carcinogenic toxic gases, hydrochloric acid, ammonia, arsenic, carbon dioxide, and cyanide, all produced by the combustion of these chemicals.

To prevent the aforementioned effects and to ensure that the fire does not become an uncontrollable threat, it is important to use chemical products responsibly, aiming to neutralize the following effects:

To prevent the palapa from catching fire due to the residue of fireworks, embers from grills, or cigarette butts;

To hinder combustion in the event of a short circuit or an intentional act of starting a fire, and if it does occur, to prevent the fire from spreading or reduce the flame's spread;

To minimize the generation of smoke and odors to protect people's health.

Based on these parameters, Palapas Sintéticas de México manufactures synthetic palm WITHOUT fire retardant and synthetic palm WITH fire retardant, comparing the effects caused by a heat source on the natural palm, on the synthetic palm without fire retardant and on the synthetic palm with fire retardant and we obtained the following results:

COMPORTAMIENTO DE LA PALMA NATURAL Y LA SINTÉTICA ANTE EL FUEGO			
Causas por la que origina el fuego	Palma Natural	Palma sintética "Caribe" SIN retardante de fuego	Palma sintética "Caribe" CON retardante de fuego
Chispas o residuos de fuegos pirotécnicos	Hace combustión y se propaga rápidamente el fuego	No hace combustión y solo daña levemente el área de donde cayeron las chispas, el globo o donde el cigarro tuvo contacto	
Brasas incandescentes de carbón, provenientes de asadores de carne			
Residuos de Globos de "Cantoya"			
Colilla de cigarros			
Cenicero de vidrio que entra al contacto con el sol y provoca efecto "lupa"		Hace combustión en el área donde recibe la fuente de calor, en forma similar a la manera en que se consume un vela, goteando el material plástico y el fuego se propaga muy lentamente	Con mucha dificultad hace combustión después de estar recibiendo fuente de calor con un soplete por más de 10 minutos y al hacer combustión el fuego se propaga muy lentamente
Corto circuito			
Fuego directo			
Humo que produce con el fuego	Humo denso y abundante de color negro	Humo ligero, no abundante de color negro	Humo ligero, no abundante de color grisáceo

We have been able to verify that the mechanical properties of the synthetic palm we manufacture, even without fire retardant, prevent combustion from starting when exposed to sparks or pyrotechnic residue, embers or incandescent coal, and cigarettes. Only the area of contact is slightly damaged, and when exposed to the heat source, light black smoke is produced, not abundant compared to that emitted by natural palm when burned. The version with fire retardant produces light, grayish smoke without a pungent odor.



It is important to emphasize that accidental fires in palapas are caused by fireworks debris, embers from grills, flares, and sky lanterns, none of which are powerful enough to ignite the synthetic palm thatch. Intentionally setting the fire with a blowtorch is an extreme measure and not a common occurrence.

This approach provides more time to evacuate the area and extinguish the fire, and significantly reduces the risk of poisoning from inhaling toxic fumes and odors, which are extremely harmful to health and can even be fatal.

EXTREME TESTS PERFORMED ON THE PALM WITH DELAY AGENT

We performed an extreme test on the synthetic palm with fire retardant, as if it were an attack to intentionally cause a fire, and we applied direct fire with a blowtorch, obtaining as a result that it resisted a little more than 12 continuous minutes before slightly combusting and when this happened, the flame tends to extinguish slowly and the smoke it gives off is not abundant, giving off slight obvious odors that are produced by the combustion of the synthetic material.



To demonstrate fire resistance, some manufacturers perform the following test: For 30 seconds, they apply direct flame with a blowtorch to the outer part of the synthetic palm and then remove the blowtorch. From that moment, they time how long it takes for the flame to extinguish. If it goes out quickly, it is considered "fireproof" or non-combustible, and if it takes a long time to extinguish, they apparently consider it a bad product. However, they overlook the copious and dense smoke that their material emits during and after exposure to fire, and that so much smoke obviously affects people's health. Since it is a video, the odor that it might spread cannot be appreciated.

To see the effects of the aforementioned test in more detail, the reader can consult the link found on the public platform YouTube, <https://www.youtube.com/watch?v=IL5CNhZFf50> where they can observe the behavior of various synthetic palms exposed to fire. While some of them do take longer to extinguish the fire, none of those participating in the test spread, intensify, or propagate it (it remains static in the eroded area). What is surprising, however, is the amount of smoke emanating from the leaves that take less time to extinguish and the scant smoke generated by the synthetic palm that is apparently the weakest because it takes the longest to extinguish the fire.



Apparently, no one takes into account the large quantity and density of smoke emitted, nor the odor it gives off, which is clearly harmful to health. The smoke emitted in a fire is harmful, especially when the chemical substances contained in fire retardants are burned. To verify the results of some studies conducted by experts and obtain more information on the effects of fire retardants, we also suggest consulting the following link:

https://ipen.org/sites/default/files/documents/ipen_flame_retardants_v1_5b-es.pdf

IMPORTANT CONSIDERATIONS

With the exception of products made of stone or similar materials and metals that can withstand higher temperatures before melting, virtually all products on the market will burn when exposed to intense heat (intentionally or unintentionally). Synthetic palm thatch is no exception. The fire resistance of synthetic palm should be compared to that of natural palm or reeds to appreciate their differences. The smoke generated by a fire is as dangerous as, or even more dangerous than, the fire itself, due to the harm caused by inhaling it as it spreads unpredictably, depending on the location and wind (Official sources from Fire Departments worldwide). A natural thatch typically catches fire accidentally due to carelessness, negligence, or recklessness. The fire usually starts on the inside or lower part of the structure, rising to the interior ceiling with some intensity. It would hardly have the force of a blowtorch, because if it did, we would be dealing with a large-scale fire that would surely last more than 30 seconds.

In everyday life, it's not common for a palapa to be intentionally set on fire, and it's even less common for the attacker to give up after 30 seconds, or for the palapa to be engulfed in flames from a neighboring fire, only for the fire to providentially extinguish itself after 30 seconds, eliminating the danger. The damage caused by fire varies considerably depending on the distance from the torch, and the fire's temperature is also a factor that can make a difference. Furthermore, if the materials being tested are made with different formulations, their behavior will obviously differ.

It's not enough to demonstrate whether or not it combusts, and how quickly, because the quantity and density of the smoke it emits, as well as the odor emanating from the material during the test, are also vitally important. Since it's a video or a photograph, the odor of the material being tested cannot be perceived. It would seem that it's common for the fire to magically extinguish itself 30 seconds after it appears, and that "saving" the synthetic palm (which is also destroyed) is more important than protecting people's health.

Before Palapas Sintéticas de México decided to launch its synthetic palm thatch, it conducted extensive research to understand the effects of fire retardants. Therefore, it is of utmost importance to us to manufacture high-quality synthetic palm that is durable, waterproof, and physically resistant to wind and inclement weather. When exposed to any of the causes that can accidentally ignite a palapa, it must withstand these impacts. And in the extreme case of someone intentionally setting it on fire, it must not combust easily, and if it does, it must not spread or intensify, allowing sufficient time to evacuate and fight the blaze. But above all, we prioritize ensuring that no one's health is endangered by the inhalation of toxic fumes, which can eventually cause severe injuries or death.

Our analyses are based on comparative studies made between natural palm and our synthetic palm, and our aim is that the synthetic palm we manufacture will delay combustion as much as possible and not generate fumes that are toxic to health.

There are many manufacturers that offer wonder products, practically indestructible, showing fire resistance tests on fabrics, plastics, etc., but they fail to mention that smoke is as deadly as fire.

The intention behind highlighting these consequences is not to denigrate the products of any manufacturer, but to raise awareness among all suppliers and especially consumer clients about the risks that arise in the performance of our activities and the direct or indirect responsibility we have when participating in the manufacture, placement or purchase of materials, without taking precautions, unintentionally exposing someone to inhaling toxic odors or fumes, which could cause injury or death.

We firmly believe that no product is truly "indestructible," nor can it withstand intentional acts of arson or remain unaffected by a nearby intense fire. When such an event occurs, the fire consumes everything in its path, even causing metal to collapse. We are happy to answer any questions you may have on this extensive and fascinating topic.

We are constantly researching new and improved formulations, and any suggestions or feedback from our customers and friends are greatly appreciated.

Sincerely

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