PALAPAS
SINTÉTICAS
DE MÉXICO

EFFECTS OF HURRICANES ON SYNTHETIC THATCH

MADE IN CANCÚN



EFFECTS OF HURRICANES

The resistance of a palapa to hurricanes, whether covered with natural or synthetic thatch, depends on several factors, including:

- Structural design: geometry, dimensions, height and roof slope.
- Quality and strength of structural materials: wood, steel, concrete and connecting elements.
- Foundations and anchoring systems: their ability to withstand wind-induced uplift, displacement and overturning forces.
- Geographical location: direct wind exposure, proximity to the sea, terrain topography and surrounding buildings.
- Roof covering fastening system: number, distribution and strength of fasteners, installation quality and compliance with technical and construction specifications.
- Condition of the palapa: deterioration of structural components, roof covering and fasteners.
- Hurricane characteristics: wind speed, gust intensity, direction, duration and impact of windborne debris.
- Strength and characteristics of the roof covering: its response to wind suction, tearing and detachment.



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HOW PALAPAS PERFORM DURING HURRICANES

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PRIMARILY A MATTER OF STRUCTURAL STRENGTH, NOT OF THE ROOF COVERING MATERIAL

Following numerous hurricanes that have affected tourist and coastal areas where palapas are found, a particularly interesting phenomenon has been observed: in many cases, the roof covering is partially or completely detached by the force of the wind, while the supporting structures remain standing.

There is a technical explanation for this behavior: strong winds generate pressure, suction and stresses that act on both the structure and the roof covering.

When the strength of the structure exceeds that of the roof covering or its fastening systems, the covering may detach before the structure reaches its failure limit.

Conversely, if the structure lacks the necessary strength and collapses, the covering loses its support and suffers the same fate, regardless of its physical and mechanical properties.

A structure can remain standing without its covering, but the covering cannot perform its function without a structure to which it is attached.

Partial or complete detachment of the roof covering may even help reduce the risk of total collapse of the palapa by reducing the surface exposed to wind, allowing air to flow more freely and potentially preventing more extensive damage.



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SCOPE OF LABORATORY TESTING



Laboratory tests assess the resistance of synthetic thatch under specific, controlled conditions. Technical reports issued by some laboratories explicitly state that the material is not approved for use in High-Velocity Hurricane Zones (HVHZ) and that the report does not constitute a commercial guarantee of resistance to Category 5 or stronger hurricanes. Actual performance depends on multiple factors, such as the unpredictable duration of a hurricane, which differs from test durations and is essential when assessing performance.

SUPERIOR TEAR RESISTANCE

In comparative tests we have conducted on various brands of synthetic thatch available on the market, we have observed that samples from other manufacturers tear more easily under manual force, making it reasonable to question their ability to withstand greater stresses without damage.



In contrast, our synthetic thatch has demonstrated superior tear resistance, attributable to its greater thickness and the characteristics of the materials used in its manufacture. This helps it withstand greater stresses without tearing. However, this advantage alone does not guarantee resistance to hurricane winds, whose effects depend on the overall performance of the construction system.

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Synthetic thatch alone cannot guarantee that a palapa will withstand the effects of a major hurricane without damage.

To claim otherwise would lack logic and technical support, as it would imply that a plastic roof covering is stronger than structures built from steel or concrete, which have historically suffered severe damage or even collapsed during major hurricanes.

Accordingly, the ability of a palapa to withstand the effects of a hurricane must be evaluated based on all components of its construction system, not solely on the properties of its roof covering.

The strength of a roof covering material must not be confused with the strength of the structure supporting it.

There is no general standard that can be applied to determine how resistant a palapa may be to a hurricane.



At Palapas Sintéticas de México, we prioritize human life and safety. We recognize the devastating effects hurricanes can cause and believe it is more honest to inform our customers about the actual capabilities and limitations of our products, encouraging them to take the necessary protective measures against these natural phenomena. Our commercial policies do not permit misleading advertising merely to make a sale.



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