Represented by Pencatec S.A.

Why Palmex Synthetic Thatch Roofing?

Palmex synthetic roofing is a premium quality product and as such, it is quite a bit more expensive to purchase than the natural leaves. Understandably many potential customers ask us about the long term cost of our product, as well as the advantages and disadvantages of using Palmex instead of natural palm leaves. This short document will provide a detailed analysis of the cost and advantages of each product.

Palmex roofing, depending on the exact model and type of installation selected, will cost between $65 and $78 per square meter, installed. The natural leaves currently cost between $17 and $30 per square meter installed, depending on the type of installation and whether or not any warranty is being offered by the installer. So our product is about three to four times more expensive then the natural leaves at the time of purchase.

However, Palmex is guaranteed for 20 years and we are confident that it will last at least 25 years. Conversely, natural leaves have a much shorter lifespan, somewhere between 3 and 10 years depending on how wet and windy your local climate is. In the rain forest and mountains of Panama, we are seeing natural palm roofs last about 3 to 4 years. In the drier Pacific beach areas, natural palm roofs last two to three times as long, or 6 to 10 years. So if we assume a conservative cost of $18 per square meter and a 5 year lifespan, Palmex will still come out cheaper by the 12 year point.

But this quick calculation doesn't account for inflation, which currently runs at 6% in Panama. It also doesn't account for the increasing rarity of the natural leaves which are disappearing fast due to the accelerating development in Panama. Additionally, palm trees need about 3 years to recover from a harvest. This environmental pressure has caused the price of palm leaves to increase very fast in other tropical countries like Costa Rica, and we expect the same thing to happen in Panama, not to mention the environmental damage itself.

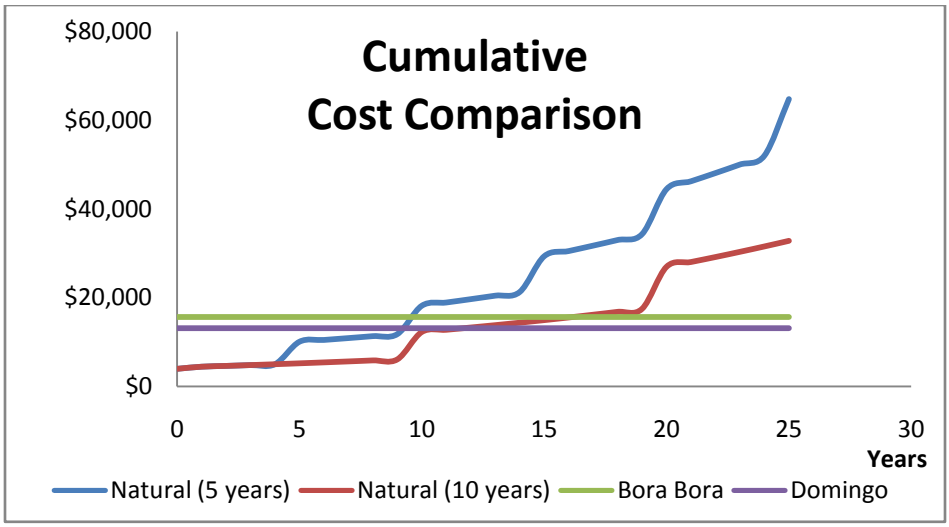
Another factor is the cost of maintaining the natural leaves. Natural thatch roofs hold a lot of water after a rain, and this quickly causes the leaves to blacken from mildew. This humidity and mildew attract lots of insects which in turn attract birds, bats and other pests like rodents and the occasional snake. Because of this, thatch roof owners have to get their roof fumigated on a regular basis. We've heard

from restaurant owners with natural thatch roofs that need to fumigate as often as every day during some times of the year. Private home owners usually require fumigation every month or two. In contrast, Palmex leaves do not retain water or moisture, which means they do not harbour mildew or insects and do not attract birds and rodents. A simple hosing down once in a while is all that might be required to clean them. Natural leaves also tend to break in the wind and slide down the edges of the roof, creating a very ragged appearance. This requires trimming the edges on a regular basis and high winds can significantly reduce the lifespan of the natural leaves. Wind driven rain also easily infiltrates natural thatch roofs. Palmex leaves flex in the wind rather than break so they maintain their neat appearance for years, and their unique design with half the sheet being solid, ensures that no rain will get in. For especially windy areas or shallower roofs, Palmex recommends plastic clips that hold the sheets down and this system has been tested to 170 Kph and has survived hurricane force winds in the Caribbean.

For hotels, resorts, restaurants and other commercial properties, another major cost difference is the requirement to shut down parts of or even all of their establishment every time the roof needs to be replaced. Removing an old thatch roof is incredibly messy as the natural leaves are full of dust and mildew and they tend to pulverise as you pull them out. This makes removal of the old roof a delicate and lengthy operation where you have to protect or remove all your furniture and equipment and an extensive cleanup is required afterward. Natural leaves also take about 4-5 times longer to install than Palmex roofing. This means that a property like a 300 square meter bohio-style restaurant might have to close for an entire month every time the natural roof is replaced.

One last cost, especially for commercial properties, is the higher cost of insurance. Natural leaves are extremely flammable and fire departments are often reluctant to approve such roofs on commercial properties. Insurance companies have similar worries and tend to charge higher rates for natural palm roofs. Our product will burn about 100 times more slowly than natural leaves and will really not sustain a flame by itself. You can even put Palmex above a BBQ pit as it will not melt until 240 degrees centigrade. Where fire is a concern for safety, as in hotels, we also have a certified fire-retardant version (Hawaii option) which is certified to Canada *UL 94 / VO* and *France CSTB / M3 # RA03-0141* standards. This product will not sustain a flame even when you put a blow-torch to it. It will simply melt and the fire stops when you remove the flame.

The diagram below offers what we feel is a conservative and realistic cost analysis of the natural palm roof versus a Palmex roof. It assumes a 200 square meter roof at $20 per square meter for the natural roof, and $65 for Palmex Domingo and $78 for Palmex Bora Bora roof, for an initial cost of $4000, $13,100 and $15,630 respectively. For the natural roof we also assumed $40 a month for maintenance and fumigation, replacement every 5 or 10 years, and 4% inflation. You can see that using this conservative scenario, the cost of the natural roof if replaced every 5 years, goes beyond the cost of Palmex at the 10 year point. The final cost of the natural roof after 25 years is 2 to 4 times that of Palmex at $32,800 (10 year lifespan) or $64,800 (5 year lifespan).



Maintenance (per month)	$40.00					
Inflation:	4%					
Year	0	**5**	**10**	**15**	**20**	**25**
Natural (5 years)	$4,000	**$10,108**	**$18,218**	**$29,369**	**$44,497**	**$64,800**
Natural (10 years)	$4,000	$5,241	**$12,297**	$14,962	**$26,968**	$32,810
Palmex Bora Bora	$15,630	$15,630	$15,630	$15,630	$15,630	$15,630
Palmex Domingo	$13,100	$13,100	$13,100	$13,100	$13,100	$13,100
Does not include lost business due to closures, damage due to water and cost of insurance						

Another factor to keep in mind is that because natural leaves ALWAYS leak, especially under heavy rain and windy storms, you are likely to get damage inside your building. For this reason, anyone using natural leaves on an enclosed building (i.e. not a simple outdoor structure like a garden bohio), is well advised to take measures to ensure the water tightness of their natural roof. This usually entails putting down a layer of steel sheeting under the palm leaves, and then painting the steel and covering the underside with bamboo to maintain a natural look. These types of installation can easily double the price of the natural leaves.

So are there any advantages to using natural leaves other than the initial cost of purchase? The only one we can think of is that there is nothing that beats the look of a natural thatch roof when it is brand new. Unfortunately such roofs quickly deteriorate in appearance as the leaves get covered in mildew, start breaking and packing-down, and take on a very ragged look. Here's an example of a three-year old thatch roof in Altos del Maria.

What are the advantages of Palmex other than long term value? Palmex roofs look great and keep looking new for most of their useful life. Most people cannot recognise a Palmex roof as a synthetic roof from a distance of 3 meters or more; many people cannot recognise them unless they actually touch the material! Palmex roofs will also help keep your building cool as they provide excellent heat insulation.

But we personally think that the biggest advantage Palmex roofing provides is peace-of-mind and that, we feel, is priceless. You do not have to worry about water leaks, mildew, rot, insects and other pests, bugs falling on your guests, fire hazards, fumigation, maintenance, cleanup costs and having to shut down every time you replace it.