

 **Lama**
Since 1962



LAMANO

Luxuria Tegulas



The way we live our lives is reflected by the contemporary designs and changes we make in our homes. LAMANO is Lama's first luxury plano "flat planed" contemporary tile inspired by innovation and the environment to perfectly complement your modern splendour by capturing the finesse and style of contemporary living with its straight simplicity and a graceful touch of curve. Through its understated simplicity, Lamano brings together a natural palette of modern colours with different textures that has been inspired by mother nature which wonderfully reflects the tranquility and balance of the environment. Green tiles have never been so simple yet colourful. As sleek and smooth as it looks, beneath the skin lies a heart that is bestowed with lots of environmental goodness developed from the proven technological concoctions from our very own, to the other far corners of the earth.

Lamano is developed as an eco-friendly product with more years in mind than the years we have been making tiles. Every tile is dedicately inspected and brought to absolute perfection. Being a naturally long lasting product that is achieved by 120 metric tonnes of compressive pressures during its stringent manufacturing process, we have ensured that this strong and durable tile does not disrupt your lifestyles under your roof by its low maintenance features with a sprinkle of Nanotechnology.

Lamano's hydrophobic surface makes it a self cleaning product with the help of a little wind and rain and is strong in its anti fungal & algae properties so that you may have a peace of mind with this high density roof tile that provides excellent acoustical insulation by reducing external sound, yet remains pristine itself for many more years to come. This low porosity tile is integrated with 4 levels of water resisting blocks (Quattro Hydro Blocks) and raised nail holes to defeat the rain, a non-combustible fire resistant body to conquer fire and a curved aerodynamic nose to rule the winds.

The awareness on the impact of our energy consumption to the environment today has reached new heights. The harmony of your home and its beloved occupants are nurtured by the infusion of Lama's Cool Technology (COOLTECH) into the production process of Lamano allowing for low VOC and ability to reflect the sun's Infra Red (IR) and Ultra Violet (UV) rays by up to 80% which not only allows your indulgence in a much cooler home but simultaneously increases the energy efficiency of your home by a reduction in electricity cooling costs and reduction of carbon footprint through less CO₂ emissions all year round. Lamano's ecological virtue is its photocatalytic ability to reduce surrounding SMOG by transforming harmful oxides of nitrogen particles from air pollution into harmless nitrates when exposed to sunlight and humidity. Its surface is nontoxic and therefore safe for rain water harvesting.

As kind as it is to the ecology, Lamano keeps the architects and builders in mind by having a self stacking capability, backing it with an easy to lay centering marker for swift and easy installation.

At Lama, we believe in lifestyle improvements with care and preservation of our future generations.





Collection

**LAMANO**

Luxuria Tegulas



SLATE SERIES



Cream Rose



Golden Prairie



Eclipse



Brown Forest



Orange Canyon



Volcanic Ash



VELVET SERIES



Cream Rose



Golden Prairie



Eclipse



Brown Forest



Orange Canyon



Volcanic Ash

- Lamano is manufactured from natural materials, therefore subtle variations in colour and surface finish may occur. Through exposure to the ultra violet rays of the sun, the coating applied to the new tiles will eventually take on a matt appearance however, will not affect its performance.
- The colours illustrated here have been reproduced as accurate a representation as the printing process will allow and may differ from that of the actual roof tile. We recommend to view the actual tile on display prior to final selection.

Technical information required for roof design and installation such as roof pitches, tile headlap, rafter and batten spacings can be found on Product Features page.



LAMA PRODUCT FEATURES

Luxuria Tegulas



Green Product



Strong And Durable



Nanotechnology



Anti Fungal



Quattro Hydro Block



Acoustical
Insulation



Long Lasting



Low Maintenance



Self Cleaning



Low Porosity



Raised Nail Hole



SPECIFICATION

Dimension ($\pm 1\text{mm}$)	419mm x 347mm
Batten Spacing	300mm - 320mm
Coverage	10.4 pcs/m ² (based on 100mm headlap)
Material	Highly Compacted Green Concrete
Weight (Approx.)	4.7kg
Roof Pitch	25° & Above
	As Low As 10° With Dual Layer Roofing System
Laying Method	Cross Bond / Staggered Only

Fire Resistant



Aerodynamic Nose



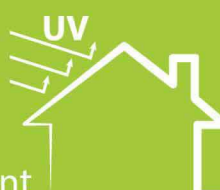
Low VOC



High Solar Reflectance Index



UV Resistant



Energy Efficient



Photocatalytic
SMOG Reduction
Capability



Self Stacking



Laying Marker



Rain Water Tank Safe



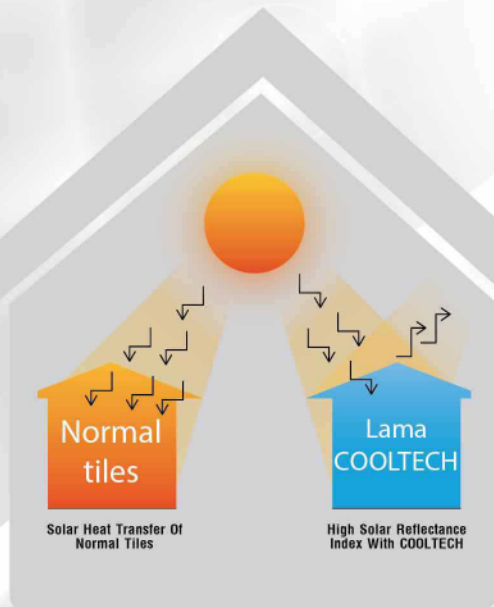
Note: The Use Of Lama's Roofing Solution Products Is Compulsory For The Top & Side Abutments.



Lama COOLTECH (Cool Technology)

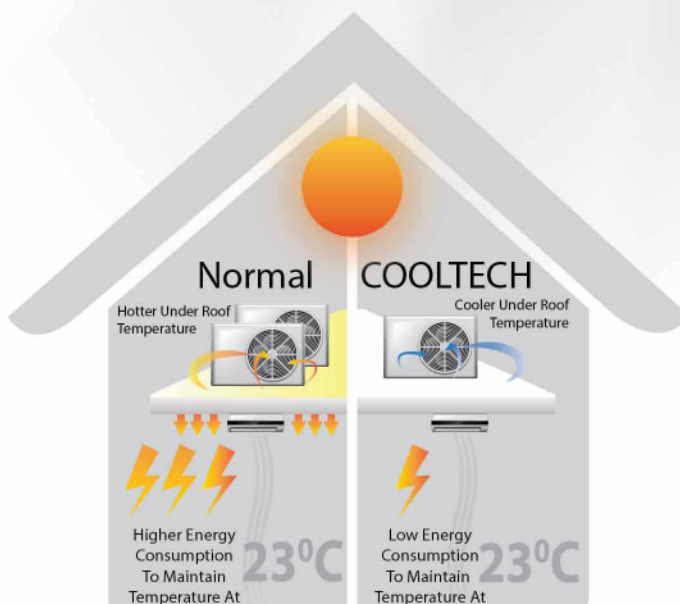
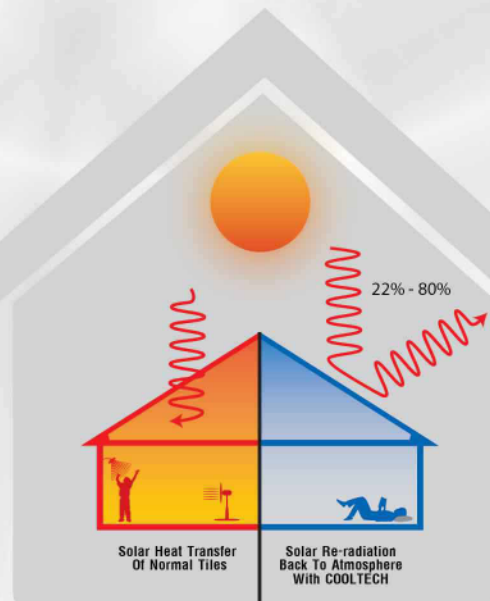


Dark coloured roofs are a trending choice of colour due to their contemporary and modernity impressions. However, they have a very low Solar Reflectance Index (S.R.I.). The radiant heat from the roof material heats up the air beneath resulting in a hot roof which can reach up to $+70^{\circ}\text{C}$ and easily seeping part of it into your home interior. With Lama's COOLTECH, you can have a cooler dark roof to an energy efficient light coloured roof, both providing you a more comfortable living and reducing the carbon footprint.



1. Lama's COOLTECH is developed in an entire revolutionary way by basing on sun-reflecting copper materials and thermo UV-stable polymers which reflects between 22% - 80% of the sun back into the atmosphere like a mirror. The UV-Absorbers in the formulations prevents degradation of the surface coming from the sunlight, enhancing the product lifespan and allowing the tiles to look beautiful for very much longer.

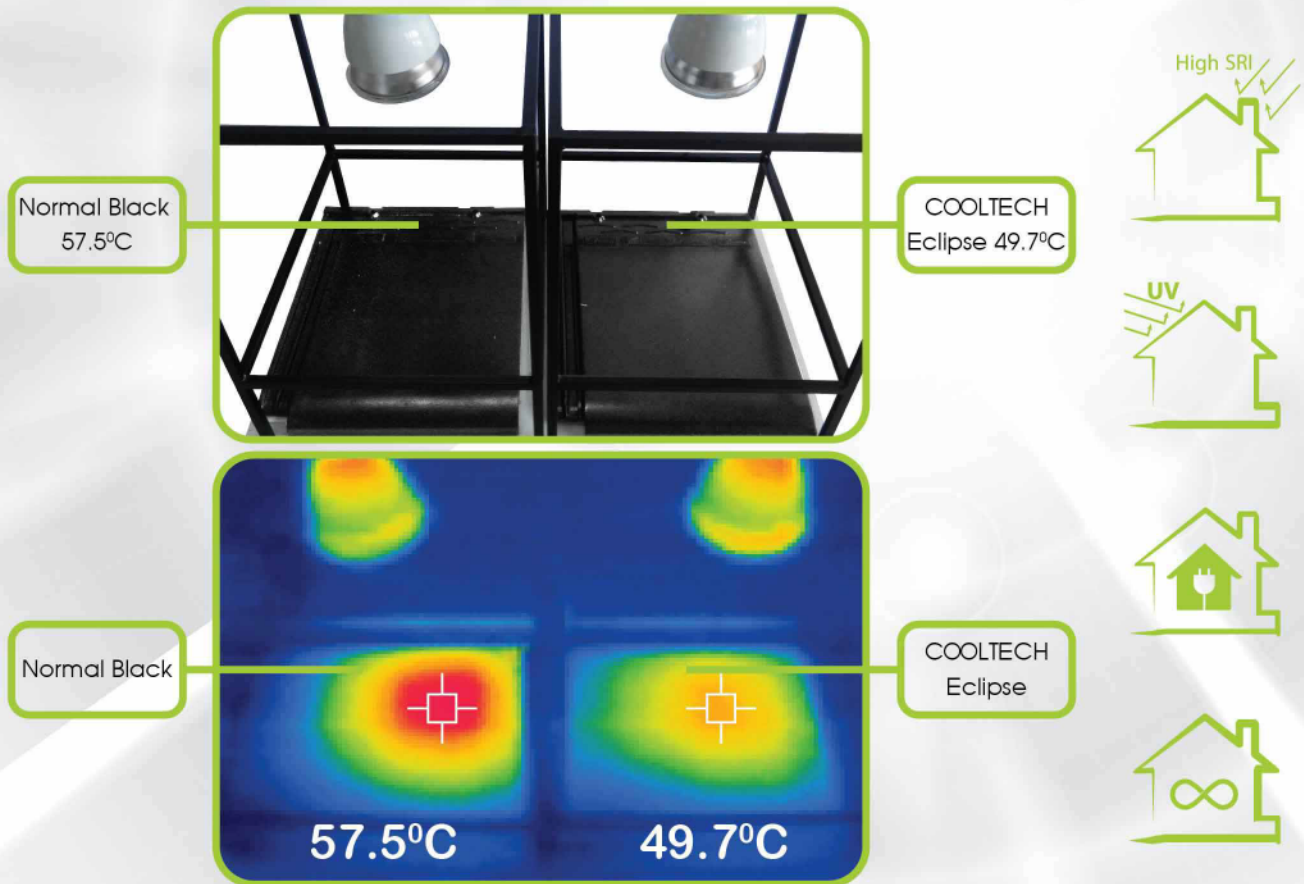
2. The effect of the solar radiation is lowered so dramatically by COOLTECH's unique properties that the tile's heat absorption is reduced by up to 40%. This equates to a reduction of 5°C - 15°C of indoor temperatures, or 10°C - 30°C of surface temperatures giving you the comfort your family needs at home.



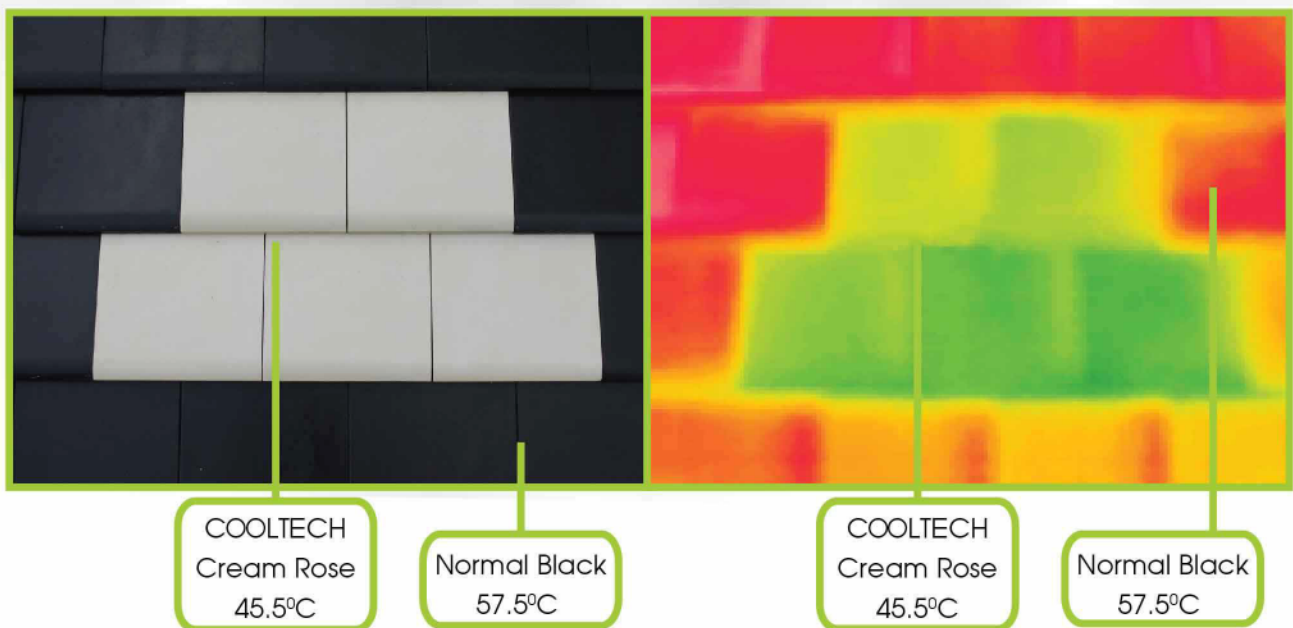
3. In order to maintain a comfortable temperature inside a hot home, the air conditioning will have to work harder with its compressor loading up often resulting in high air conditioning maintenance and electricity costs. Large amounts of greenhouse gases are contributed due to this additional energy consumed. On a 200m^2 light coloured COOLTECH roof, a saving of CO_2 emission equal to 1 ton per year may be attained. COOLTECH saves your money in electricity costs and is an indulgence to nature.



COOLTECH Thermographic Report



The above illustrates the temperature differences of 7.8°C between Lama's COOLTECH Eclipse (Black) with a Normal Black Tile after exposed to heat radiation by light for 60 minutes.

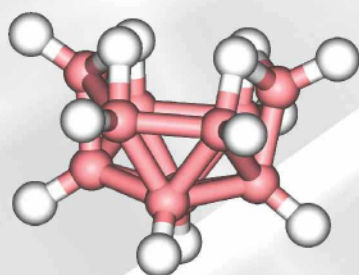


The above illustrates the temperature differences of 12°C between Lama's COOLTECH Cream Rose with a Normal Black Tile under a regular afternoon sun.

Nanotechnology



Lamano's Nanotechnology is nature in the tile surface, consisting of deeply penetrated silane which has a size of 5 - 15 nanometers making the surface alkaline resistant and hydrophobic. Dirt particles including fungi / algae with an extremely reduced contact area are picked up by water droplets or winds and are easily cleaned off the surface taking along pollutants and harmful micro-organisms with them to produce a self cleaning effect. The tile surfaces are kept aesthetically pleasing, weather resistant and hard wearing while the facade remains dry, clean and attractive. This self cleaning effect is also based on the high surface tension of water similar to what is found in nature, like lotus leaves with dew early in the morning.



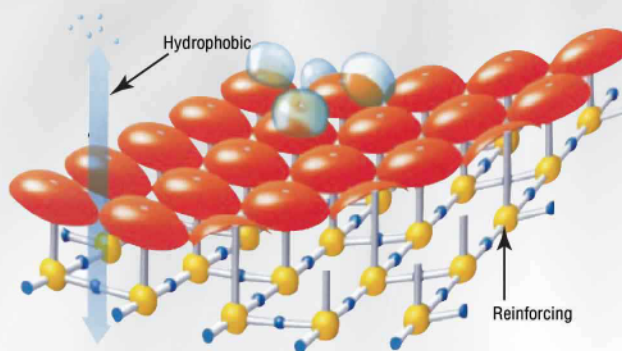
Human Hair Thickness: 50,000 - 100,000 Nanometers Across.
1 Nanometer: 10 - 15 Atoms Next To Each Other.



Hydrophobicity Of Lotus Leaves



The Nanotechnology on the surface has given a permeability property to Lamano, owing to the acrylic elastomeric resins which becomes water tight when wet and conversely the pores of the coating open up when dry to release trapped moisture allowing the tile to breath out. With low moisture, there is less mould and decay which allow your home to last longer with the gift of healthier living.



Water Based Low VOC Coating & Rain Water Tank Safe



Lamano's water based colour coating consists of less than 20 grams solvent for every litre, allowing it to be classified as a low Volatile Organic Compound (VOC) green product.

The raw materials used to manufacture Lamano tiles are non-toxic. Therefore, any water that runs off Lamano is considered safe for consumption however, other factors including atmospheric fallouts from the environment need to be considered.

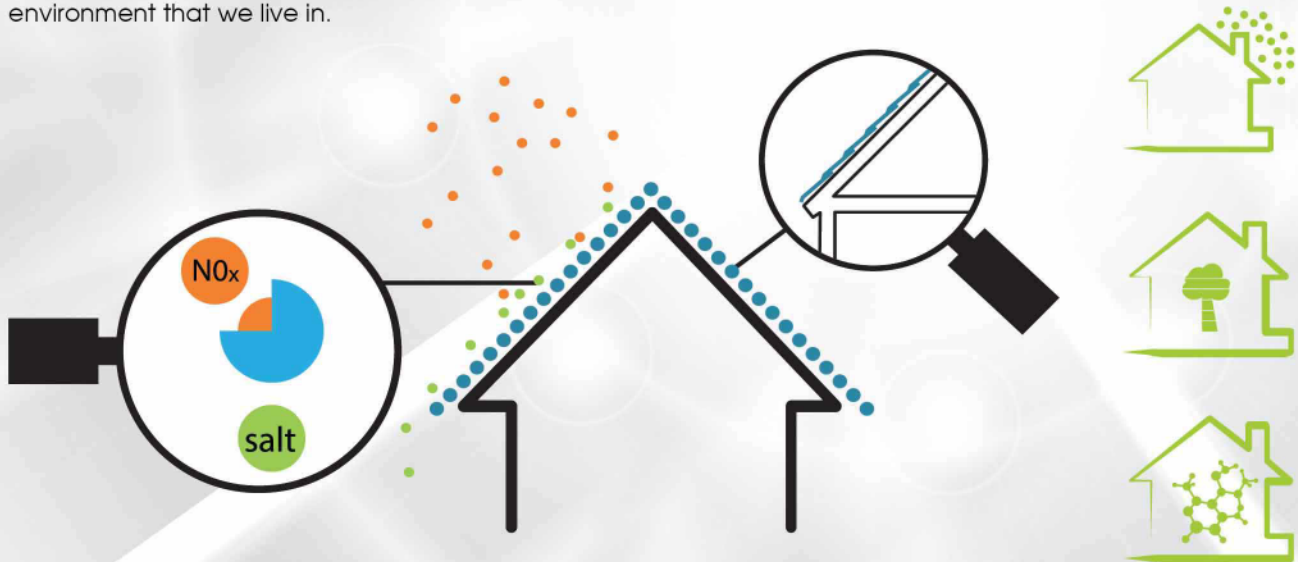




SMOG & Haze Reduction Capability



We are no longer unfamiliar with Haze given the frequent encounters we experience. On the other hand, the less encountered SMOG is a photochemical haze caused by the action of solar ultraviolet radiation on atmosphere polluted with hydrocarbons and oxides of nitrogen (NO_x) especially from automobile exhaust; which leaves all of us guilty as charged. Similar to what is being experienced in some heavy industrialised cities, SMOG may become a major and frequent problem for us if we do not start conserving and nurturing the environment that we live in.



Lamano's photocatalytic feature starts to leave a green footprint when the sun irradiates upon it with the presence of humidity which is both perfectly in abundance where we are. Light is absorbed by the adsorbed substrate and catalysed to transform harmful oxides of nitrogen particles from air pollution such as SMOG or haze (NO_x), found commonly in burnt fossil fuels, into harmless nitrates (NO₃) which eventually falls or washes off to the ground. If Lamano is used over an exposed area of 1,000 m², you will be able to clean the air off NO_x particles corresponding to approximately 30,000 kilometers of driving annually for many years.

International Energy Agency (IEA) 2014 - GLOBAL WARMING

Towards 2040, the global energy demand will increase by 37 percent and we would have exhausted the CO₂ quota which the United Nations has set as a limit to how much we can reduce if we wanted to maintain a temperature increase of maximum +20C by year 2100. This quota sounds of 2,900 gigatons by 2100 and we have already emitted 1,900 gigatons; with half of it during the past 40 years. The global temperatures will rise in an average of 3.60C by 2100 if the politicians do not come up with new initiatives.



Steven Chu, U.S. Secretary of Energy and Nobel price-winning scientist.

"Cool roofs are one of the quickest and lowest cost ways we can reduce our global carbon emissions and begin the hard work of slowing climate change," & "By demonstrating the benefits of cool roofs on our facilities, the federal government can lead the nation toward more sustainable building practices, while reducing the federal carbon footprint and saving money for taxpayers."



Los Angeles Becomes First Major City To Require 'Cool Roofs'

On 17th December 2013, the Los Angeles City Council in the USA unanimously passed a building code update that will require all new and refurbished homes to have cool roofs, which use sunlight-reflecting materials. Los Angeles is the first major city to require such a measure, which was pushed for by the local organization Climate Resolve. Climate Resolve works throughout Southern California to prepare the region for the impacts of climate change.





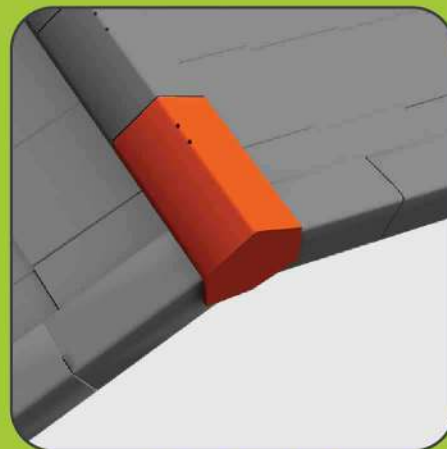
Accessories



Lamano Ridge



Lamano Hip Starter



Lamano Ridge Tile End



Lamano 3-Way



Lamano 4-Way



Lamano Gable End



Lamano Gable End Tile End



Required for the first Lamano tile laid on every roof pane.

Lamano Tile Starter Bracket

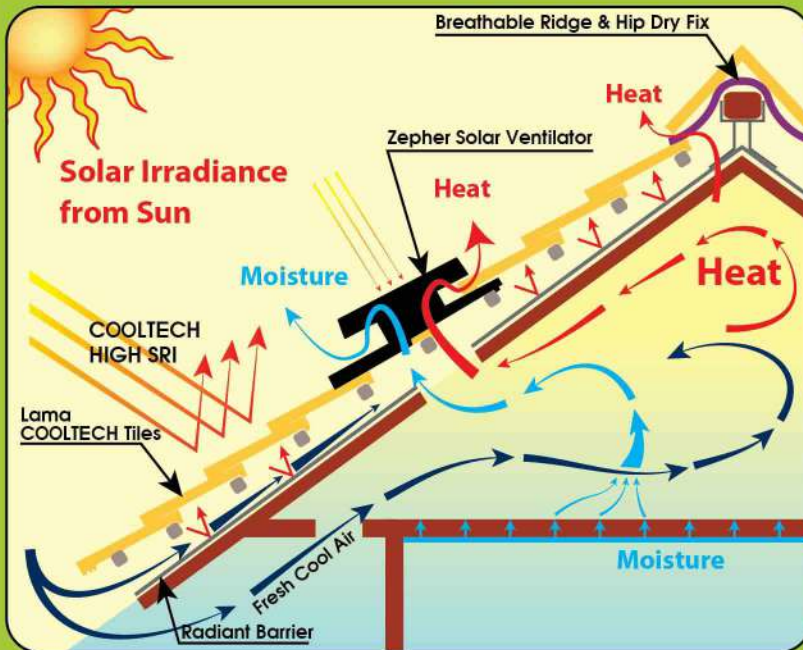
Note: All accessories are dual textured.

The use of Lama's Roofing Solution Products is compulsory for the installation of Lamano luxury tiles.

In no event shall conventional metal flashings be used for the side or top abutments of a Lamano installation otherwise, leakages may occur.

Technical information required for roof design and installation such as roof pitches, tile headlap, rafter and batten spacings can be found on Product Features page.

The home is one of the greatest investment one will make during their lifetime. The roof is one of the largest visible part of the house and is fundamental in providing you the shelter and comfort you and your loved ones needs. The selection and combination of roofing materials will reward you by adding not only the aura of beauty to the home but also its value and your living harmony. Some roofing materials may not be practical or cannot be added on at a later stage, therefore, a wise decision may be required prior to the installation of the roof.



Combining Lama's COOLTECH roofing tiles and Radiant Barriers to reflect the heat back to the atmosphere, together with Lama's Zepher solar powered roof ventilation / heat extraction system and "Breathable" Ridge & Hip Dry Fix to remove any remaining penetrated heat in the roof, KOOL@ROOF is Lama's answer to the Ultimate Cool Roofing Solution as well as a High Energy Efficient Roof System.

KOOL@ROOF BENEFITS

Low Maintenance: An install and forget roof system with zero RMS life cycle running cost.

Reduction In Roof Space Temperature: A cooler home all year round.

Reduction In Electricity Expense: Save RMS through less electricity consumed for air conditioning cooling and maintenance costs.

Increased Ventilation Benefits: Renewed fresh air above the ceiling a few times every hour during the day.

Increased Moisture Control In Wet Weather: Lower roof moisture and temperatures promotes longer home and roof structure lifespans and slows down any decomposition.

Increased Living Space Comfort: The pleasure of freshness and moderated lower temperatures in a quieter home.

Healthier Living: Lower moisture in the home discourages the growth of pathogens such as mould or fungi.

Lamano COOLTECH Tiles	Radiant Barrier/ Roofing Foils	Zepher	Ridge and Hip Dry Fix
Lama's luxury flat roof tiles with high Solar Reflectivity Index (and many other features) that is able to reflect heat from the sun back to the atmosphere.	Lama's Radiant Barrier installed in between the battens and rafters beneath the roof tiles, that reflects radiant heat from the tile underside, back towards the roof.	Lama's Solar Powered roof ventilator which harnesses free energy from the sun to extract hot air out of the roof.	Lama's Ridge & Hip fixing replacing traditional wet cement mortar fixing that allows hot air trapped under the roof to exit while preventing water from seeping in.

Manufactured By
LAMA GROUP OF COMPANIES

LAMA TILES (Head Office)
No. 435 & 436 (1st Floor), Jalan Tun Dr. Ismail
70200 Seremban, Negeri Sembilan, Malaysia
Tel: (+60 6) 7625 886, 7626 351, 7639 651
Fax: (+60 6) 7636 989
Email: query@lamatiles.com.my

Central Production Plant
LAMA TILE-WORKS (SEREMBAN) SDN. BHD.(5665-P)
4th Mile, Jalan Jelebu, 70100 Seremban
Negeri Sembilan, Malaysia
Tel: (+60 6) 7624 566, 7623 104
Fax: (+60 6) 7623 199
Email: query@lamatiles.com.my

Northern Office & Production Plant
LAMA TILE (UTARA) SDN. BHD. (2060-T)
Lot 704, Jalan Kebun Bunga, MK 13, Juru
14000 Bukit Mertajam, Seberang Perai Tengah
Pulau Pinang, Malaysia
Tel: (+60 4) 5016 161, 5016 163
Fax: (+60 4) 5016 168
Email: lamautara@lamatiles.com.my

East Coast Office & Production Plant
LAMA TILE (UTARA) SDN. BHD. (Kota Bahru Branch)
Lot 6977 T/S Kawasan Perindustrian Apam
Lubok Jong
17070 Pasir Mas, Kelantan, Malaysia
Tel: (+60 12) 9417 122, (+60 12) 5377 122
Email: lamakb@lamatiles.com.my

Vietnam Office & Production Plant
LAMA INDUSTRIES VIETNAM CO. LTD.
Lot B8, Dat Cuoc Industrial Park
Dat Cuoc Commune, Bac Tan Uyen District
Binh Duong Province, Vietnam
Tel: (+848) 3717 8580
Fax: (+848) 3717 8579
Email: lamahcmc@lamatiles.com.my
lamahcmc@lamatiles.com.vn

WEBSITE
www.lamatiles.com



FACEBOOK
Malaysia: Lama Group Of Companies
Vietnam: Ngoi Mau Lama Malaysia