



TPI Polene

Showcasing Our Newly Patented Lightweight Fiber-Reinforced Cement

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TPI Polene - Strong Innovation Culture

Research and Development is the helix of TPI Polene's corporate DNA supported by its pool 500 or so scientists and engineers

R&D is crucial to TPI Polene maintaining market position; creating first mover advantage.

Innovation also creates competitive moats that help underpin its resilient cashflow generating ability

These competitive moats are seen in its Construction Material division but much more visible in the Power Division whereby subsidiary TPI Polene Power towers over the rest of the Renewable Power producers in Thailand, being in the top Tier 1 when comes to EBITDA margins

It is also visible in the Specialty Polymer division where by its EBITDA margin is two to three folds higher than that of its closest domestic peer



Our many firsts In Thailand include...

Having the diversified mortar portfolio

The first to produce hydraulic cement that is now the foundation of our Green Cement & Building Products that we launched to the local market in a big way back in June 2023

The first and only stucco wall producer

First and only cement producer that uses MSW as an alternative fuel

One of the very few in the region whose quarry is linked to production facility via conveyor belt that resulted in savings on diesel

The First power plant to adopt zero waste policy, that is use up all incoming waste

First power plant to use MSW (municipal garbage) as well as industrial waste (IW)

First and only WTE SPP with over 10MW capacity

First and only producer to use fly ash in the process

First fire resistant fiber cement producer in Thailand – **newly patented**

First and only furniture board and door frame producer using fiber cement – **newly patented**

First and only fast drying and odorless paints for walling and other surfaces

And the list continues to grow ... allowing TPI Polene to gain foothold in the realm of bio-organic chemicals/compound that have wide array of applications in Thai Agriculture and health care that we will show case in our next product development update

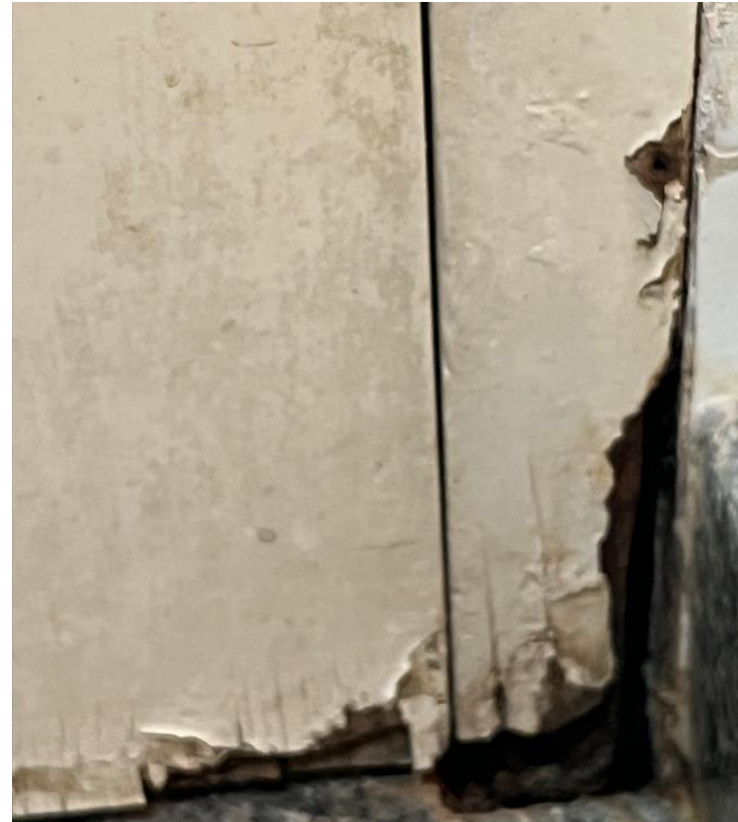
Presenting our new product patented in the US

Conventional Wood Product

The materials typically used in the manufacture of furniture for interior decoration of residences are natural wood, synthetic wood such as the medium-density fiberboard (MDF), plywood, laminated wood, particle board and many more. These are readily available, lightweight, easy to cut, easy to assemble.

However, they have short service life, not tolerant to humidity, can be destroyed by fungus, eaten by termites and also flammable...

Malformed Wooden Door Panel



Rotten by moisture



Ruined by fungus



Rotten by moisture



Eaten by termites

Presenting our new product patented in the US

... enter TPIPL's Solution



The Lightweight Fiber-reinforced Cement Product

In 29 August 2023, the product has been granted US Patent Number: 11 739 026 B2

The present invention provides a fiber-reinforced cement composition made up of: cement, fiber, filler, expanded perlite and polymer. The fiber-reinforced cement composition in this invention has low density, high toughness & flexural strength and not containing volatile compounds. When molded into a workpiece, it is lightweight, easy to cut and/or lathed into any desired shapes; drilled and fixed with screws and/or repeatedly nailed at the same position. It is tolerant to humidity, termites and insects. It is also inflammable and does not produce dust when cut, drilled and/or lathed that is hazardous to the workers. Therefore, the material is most suitable for manufacturing furniture, parts and modules.



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Our lightweight fiber-reinforced cement product



TPI WOOD WALL

TPI WOOD Wall

From new innovative fiber cement manufacturing products, TPI wood, a strength wall & floor decorative materials. Produced from non-asbestos high density fiber cement to resist heat and moisture, presented more advantages in termite resistance, no-swelling, flexibility, impact resistance and mold resistance. To integrated high resolution digital printing production to create products imitated natural wood texture.

Our lightweight fiber-reinforced cement product

... Experience the realistic modern style

Technical Information

Product Properties	Unit	Class High Density 8-12 mm.	Standard Test Method
Physical Properties			
Thickness Tolerance	mm.	± 0.2	ASTM C 1185
Density	Kg/m ³	1,600 ± 50	
Modulus of Rupture (Average two direction at wet condition)	MPa	≥ 14	
Modulus of Elasticity (At wet direction)		≥ 10,000	
Moisture Content	%	≤ 12	
Water absorption	%	25 (Max.)	
Water Tightness		Pass	
Fire Resistant Properties			
Ignitability		Pass	BS476 Part 5
Fire Propagation Index		I = 0.2	BS476 Part 6
Surface Spread of Flame		Class One	BS476 Part 7

