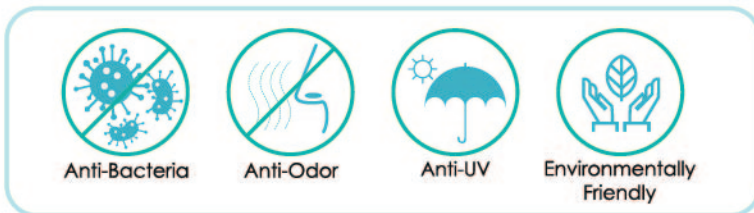


THE INNOVATION OF  
**PERMANENT**  
AND ENVIRONMENTALLY FRIENDLY  
**ANTI-BACTERIAL**  
**TEXTILES**

Product Features

Perma's textile products are researched and developed with new high-performance manufacturing technology. We use our exclusive in-house technique to combine Nano Zinc, a particle with anti-bacterial properties, directly into the fibers rather than using the textile coating method like other in the industry. This technique causes Nano Zinc to be deeply intertwined within the fibres, making it not easily detach even after many washes. On the other hand, Nano Zinc applied using the coating method is easily detached from the fibres after 15-20 washes. This results in an overall decrease in anti-bacterial properties over the expected life of the garment. The technology used in this production process still meets the conceptual requirements to be called an "Environment-Friendly Product"; having the following features:

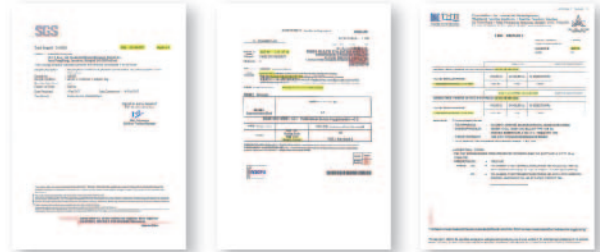


PERMA VS Coating Method

Functions	Coated Fibre	PERMA FIBRE
Anti-bacterial Qualitative Efficiency	- Unstable anti-bacterial function - Decrease when wash	- Stable anti-bacterial function for 1.0MM radiance - Never decrease when wash
Anti-bacterial Quantitative Efficiency	- Bacteriostatic Activity Valve is equal the standard = 2.0 - 2.2 (JIS 1902)	- Bacteriostatic Activity Valve is higher than the standard $\geq 5.6$ (JIS 1902)
Anti-odor Efficiency	- Anti-odor function depend on coating material - Unstable - Decrease when wash	- Anti-odor from bacteria staphylococcus aureus stable
Anti-UV Efficiency	30-40 UPF Depend on textile structure and density	> 40 UPF Depend on textile structure and density
Environmental Friendly	- Coating chemical material diluted with water when wash	- No harmful chemical material diluted with water when wash

## Product Quality Assurance

Nano Zinc extrusion technology used in Perma textile products is certified by the world's leading certification bodies, namely SGS and BOKEN, as well as holding a certification from the Thailand Textile Institute. This assures customers that perma textiles inhibits the growth of bacteria that causes unpleasant odors and many health problems.



- The anti-bacterial property of our textiles was proven by the world's leading certification body, SGS, stating that Perma textiles can inhibit the growth of harmful bacteria such as Klebsiella Pneumoniae and Staphylococcus aureus, 97.31% and 99.94% respectively.
- Test results from the Thailand Textile Institute, the institute and organization that certified Perma textile products, proved conclusively that Perma Textile products' anti-bacterial property lasts very long and is still effective after 150 washes.

## Number One Guarantee Reward

Perma Corporation Co., Ltd was awarded "number one in textile innovations." Perma was awarded the "International Innovation Awards" from the Asia Enterprise Institute, an organization that promotes and develops social and environmental responsibility to promote the potential of entrepreneurs in Asia. Perma won the prize in 2017. This prestigious award is the pride of the company as a Thai textile entrepreneur who develops products and services for Thai people and is recognized in Asia. The award is a quality guarantee of Perma to an international standard as well as being an acknowledgement of our corporate culture that runs a business while at the same time taking nature, the environment, and society into account.



1. INTERNATIONAL INNOVATION AWARDS 2017 PRODUCT CATEGORY "NUMBER ONE IN TEXTILE INNOVATIONS"
2. INTERNATIONAL INNOVATION AWARDS 2018 HEALTH PROMOTION CATEGORY "PERMA FOR BETTER QUALITY OF LIFE"

