



# Non-Heating Bituminous Waterproofing Coating

**SP** Singapore  
Polytechnic

Technology Licensing Opportunity

## Technology Overview

Bitumen is used as an essential binder for many applications due to its excellent adhesive properties, waterproofing and high durability. Conventional application of bitumen involves on-site melting at high temperature of more than 250°C, which must be poured quickly onto the surface with additional torch-on, causing complication during the application. To make matter worse, melting of bitumen releases harmful and pungent gases which contains hydrogen sulphide and volatile organic compounds (VOCs), endangering neighbouring areas and workers. Considering the hazards associated with the melting of bitumen, there is a need to develop a less hazardous form of bitumen which does not compromise on material performance.

This technology transforms solid bitumen into single-component liquid bituminous coating at room temperature via a simple and low-cost formulation using solvents, fillers and additives. The single-component liquid bituminous coating may contain fillers made from waste materials such as food waste. Such fillers are sustainable and found to be comparable in terms of material performance to industrial fillers.

One application of the proposed technology includes a roof waterproofing system which fulfil Singapore standards SS133:2017 and/or SS374:1994 (2023). This high-performance bituminous coating has excellent workability at room temperature, fast drying, and easy production without the need to heat. Hence, the proposed technology omits the hazards associated with conventional application of bitumen and is energy saving.

## Potential Applications

- Primer & paint
- Waterproofing coating
- Adhesives and sealants
- Additive with various substrates including cement, concrete, metal structures, and castings

## Commercialization / R&D Opportunities

- ✓ Ready for commercialization
- ✓ Looking collaborators for further development / to develop new applications
- ✓ Available for licensing
- ✓ Accepting business plans from interested parties

## Intellectual Property -

- Patent pending

## Technology Features & Specifications

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- Free of smoke and fumes
- Ease of application with excellent coverage
- Simple production process
- Energy saving (no heating required)
- Water-resistant
- Corrosion-resistant
- UV-resistant
- Fast-drying
- Can be applied by brush, spray, squeegee or trowel
- Can be applied on horizontal and vertical surfaces without substantial rundown
- Can be applied to either dry or damp surfaces
- Compatible with various substrates and structures
- Odourless when dried
- Option to incorporate sustainable fillers
- Fulfil SS133:2017 and/or SS374:1994(2023)

## Unique Value Proposition

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- The global bitumen market size was valued at USD 103.94 billion in 2022 and is expected to expand at a compound annual growth rate (CAGR) of 4.36% from 2022 to 2030, to reach USD 146.21 billion (Precedence Research, 2022).

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## Disclaimer

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