

porelle[®] membranes

Introduction

Porelle membranes are a range of waterproof breathable films 12 – 55 µm in thickness. The porelle membrane range has been engineered for extreme, high performance outerwear requiring maximum waterproofness, breathability, durability and protection.

Porelle membranes are manufactured by PIL Membranes with over 30 years' experience in the market place. Probably the world's most diverse membrane manufacturer – with a range of membranes encompassing:

- **microporous polyurethane membranes,**
- **hydrophilic polyurethane membranes,**
- **PTFE bicomponent membranes,**
- **cross-linked polyurethane membranes,**
- **gas/air permeable membranes,**
- **fire retardant membranes,**
- **anti-static membranes.**

Market Applications

Porelle membranes are now used in a multitude of garment applications where performance combined with cost effectiveness is vital. They have been designed for lamination to create high performance fabrics for a range of different market applications that include:

- **Military:** Probably the most extreme performance requirements. Porelle membranes are used by numerous military organisations worldwide.
- **Emergency Services:** The front-line requirements for emergency services are varied. For general use, waterproofness and breathability is important for day-to-day comfort. However, the front-line can face many potential hazards against which the user needs protection. Porelle membranes can be designed with a range of performance benefits including viral and blood borne pathogen resistance, chemical resistance and flame resistance.
- **Fire-fighters:** Fire-fighters meet a number of potential hazards. From fighting fires, dealing with chemical spillages, or rescue operations, the requirements are numerous and many. The garments not only have to protect, they also have to withstand the conditions to which they are subjected. Porelle membranes have been widely used in fire-fighting apparel to provide additional levels of protection matched by high durability in use.
- **Industrial/Institutional:** Our extensive and adaptable range will meet demanding application requirements, particularly for protection against extreme weather conditions. Used by the postal service, rail service, road contractors, forestry, oil industry, private security and the chemical industry. Porelle membranes are engineered for high performance outerwear.
- **Medical:** Porelle membranes are used in surgeons' garments to provide protection against viral and blood borne pathogens. However, it is the unique ability of porelle membranes to withstand steam sterilisation through numerous recycles that sets it apart.
- **Sports & Leisure:** Porelle's stretch, low noise and superb handle and drape combined with high performance and durability make it an ideal choice for sporting applications.
- **Footwear:** Extensively used throughout the footwear industry to manufacture waterproof and breathable footwear linings.
- **Glove and Hat inserts:** Our extensive high performance range of glove inserts are used globally by leading manufacturers in fire-fighters, military, search & rescue, police, industrial and sport & leisure gloves. We also offer a range of inserts for use in hats designed to provide protection against wind, rain and snow in extreme weather conditions.



waterproof



chemical resistant



viral resistant



breathable



durable

porelle[®]
fire-fighters

porelle[®]
military

porelle[®]
ems

porelle[®]
medical

porelle[®]
industrial

porelle[®]
inserts

porelle[®]
sport

Global market requirements

The global market for fabric laminates utilising a membrane technology is driven by different customer requirements or testing criteria. These are typically set out in international standards such as those covered by ISO, EN, and NFPA norms. Because of the broad range of global standards and testing criteria, no single membrane technology is able to meet all requirements. The aim of PIL membranes is to help our customers to compete in the global market. We have set out to do this by:

- *developing our core capability in membrane technology,*
- *engineering our own unique polymer systems designed to meet specific membrane performance requirements,*
- *the design and development of purpose built plant and manufacturing facilities for both polymer and membrane production.*

It is this approach that enables us to offer a diverse range of membrane technologies rather than only promoting the benefits of one membrane system. With this background in membrane technology we also have a specialist knowledge of how different membrane systems perform and compare with each other.

Performance benefits

The Porelle range offers membranes with a number of performance benefits that can include a combination of:

- *high flexibility,*
- *soft and quiet,*
- *durability and abrasion resistance,*
- *extremely breathable,*
- *high waterproofness,*
- *windproofness,*
- *viral and blood borne pathogen resistance,*
- *chemical resistance,*
- *flame resistance,*
- *high temperature wash resistance,*
- *steam sterilisable,*
- *dry clean resistance.*

Performance standards

When tested in a laminate Porelle membranes are compliant with a number of performance standards. Examples include:

- *NFPA 1971 – fire-fighter garments and gloves,*
- *EN 469 – fire-fighter garments,*
- *EN 659 – fire-fighter gloves,*
- *EN 368 – resistance penetration by chemical liquids,*
- *ASTM F 903 – resistance penetration by liquid chemicals,*
- *ASTM F 1671 – resistance to penetration by viral & blood borne pathogens,*
- *EN 532/ ISO 15025 – limited flame spread,*
- *EN343 – protection against foul weather,*
- *EN 471 – high visibility,*
- *waterproof in excess of 10,000 mm water column after washing,*
- *Ret breathability data < 1 for membrane,*
- *Ret data breathability < 4 for 2 ply laminate,*
- *Ret breathability data < 8 for 3 ply laminate,*

and many other standards...

Membrane selection

Whatever your application, it is probable that we have achieved similar specifications and can advise on a membrane system that best meets your requirements. Our global support team can advise on performance standards and many other aspects of performance outerwear. Our QA laboratory is internationally recognised and can carry out a wide range of tests on membranes and laminates for all applications

If you think our technical capabilities might fit your requirements then please contact us.



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