Sealmac® nonwoven paving fabrics manufactured from continuous polyester fibre have been widely utilised in the maintenance and rehabilitation of pavement surfacing in both Australia and New Zealand. Sealmac® paving fabrics incorporated into new spray seals and asphalt overlays ensure prevention of infiltration of moisture through surface cracks, into the structural road pavement layers. Moisture weakens the shear strength of pavement layers, which with the combination of time and traffic, leads to surface deformation (rutting) and loss of bonding at the surfacing interface. Sealmac® provides an effective, inexpensive method of waterproofing and stress alleviation, mitigating the effects of reflective cracking in pavements, while extending pavement life. Performance assessment and cost comparisons of various treatments show that Sealmac® can provide up to 100% longer life for up to 30% additional investment. Sealmac® paving fabrics range consists of a PF1 grade suitable for spray seal and asphalt maintenance applications and a PF2 grade for additional waterproofing and low volume special application roads. A variety of different roll widths and lengths are available.

FUNCTIONS

**Stress Relief**
Sealmac® acts as a stress absorbing membrane interlayer at the new overlay interface. Its purpose is to reduce tensile stresses in the new pavement originating from cracks in the existing pavement surface. Stress cracking in pavements are caused by reactive subgrades, differential vertical movement, bending caused by deflection and thermal induced movement.

**Waterproofing**
Waterproofing maintains the structural integrity of the pavement base layers, Sealmac® preventing the ingress of water by sealing existing cracks in the road surface. Sealmac® paving fabric acts as an interlayer impregnated with bitumen, preventing penetration of surface water and oxygen into the road pavement layers, maintaining strength to provide extended performance life.

**High Temperature Resistance**
Sealmac® is made from Polyester and achieves the functions of stress relief and waterproofing from its ability to resist installation temperatures from asphalt and bitumen. With compatibility for temperatures up to 240°C, Sealmac® paving fabrics are specifically designed to resist shrinkage and maintain consistent bitumen absorption, to provide confidence in the design and installation of the road surfacing.
**APPLICATIONS**

**SPRAYED BITUMEN RESEALS (PF1)**

Sealmac® incorporated into reseals for maintenance are laid over the existing surface to provide waterproofing and stress alleviation in cracked pavements. Sealmac® prevents premature pavement failure due to reactive subgrades, high pavement moisture conditions and fatigued surfacing (refer figure 1).

Single coat seals should be used only for specific applications with pavement seal design based on expert advice.

**SPRAYED BITUMEN SEALS ON STABILISED OR MODIFIED BASES (PF1, PF2)**

Stabilised or modified pavement base courses are used to provide a semi-rigid pavement over clay and black soil subgrades. Surface cracking associated with thermal effects, cement curing shrinkage and pavement fatigue can be alleviated using a paving fabric incorporated into sprayed reseals (refer to figure 2).

**ASPHALT OVERLAYS (PF1, PF2)**

Asphalt seals incorporating Sealmac® are laid with a bond coat over new pavement base course or existing fatigued and cracked asphalt surfacing, for maintenance applications. A minimum thickness of 40 mm ensures that residual heat will draw the underlying bitumen bond coat into the fabric to provide a waterproofing and stress alleviating pavement interlayer (refer figure 3).

**ULTRA THIN ASPHALT OVERLAYS (PF1, PF2)**

Sealmac® provides an economic interlayer to existing surfaces where thin asphalt pavement surfaces are utilised. Applied with a bond coat to the existing surface, the fabric is overlaid with 10 mm stone seal followed by a thin asphalt surfacing. Ultra thin asphalt overlays are designed to perform at a maximum thickness of 20 mm with the paving fabric providing a bitumen reservoir, further providing a strengthened waterproofed pavement interlayer (refer to figure 4).

**SPRAY SEALED LOW VOLUME ROADS (PF2)**

Sealmac® paving fabric is often applied on existing pavement formations utilising local natural materials including clay. Re-worked and compacted existing base course eliminates material and haulage costs of structural pavement courses and when combined with Sealmac®, provides a waterproof pavement that maintains an equilibrium moisture condition, providing long life integrity (refer to figure 5).

**OTHER APPLICATIONS**

Applications for Sealmac® paving fabrics are not limited to roads and highways. Sealmac® can be applied to airport runways, bridges, carparks and other traffic areas.
## ADVANTAGES OF SEALMAC® PAVING FABRICS

| Reduced Risk | Sealma® paving fabrics are produced to strict Manufacturing Quality Assurance. All testing is carried out by a NATA accredited geosynthetics laboratory, ensuring consistent quality for the entire road project. Laboratory support is provided for the construction QA process for Sealma® paving fabrics. |
| Enhanced Performance and Reliability | Sealma® paving fabrics have been manufactured in Australian and installed to meet Australian specifications and conditions for over 25 years. Sealma® paving fabrics are proven to mitigate crack reflection through effective stress alleviation and provide a waterproof interlayer to maintain pavement integrity and strength, extending pavement life. |
| Cost Benefits | Sealma® paving fabrics provide additional surface life to pavements, providing choice of extended life over sound pavements and holding treatments for poor pavements. Life cycle costing benefits provide options for alternative investment of funds as Sealma® paving fabrics can provide additional surfacing life of 5-10 years. |

## SEALMAC® PAVING FABRIC RESEARCH AND DEVELOPMENT

Geofabrics is committed to pursuing research and development of Sealma® paving fabrics in testing and performance in various insitu environments. For technical information or a tour of our Albury manufacturing plant or the Geosynthetics Centre of Excellence please contact your closest Geofabrics office or email technica@geofabrics.com.au

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