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GEOSYNTHETICS

Geosynthetics and/or Geotextiles are commonly used in many civil engineering applications. Primary functions are filtration, separation and reinforcement. There are various types of Geosynthetics including nonwoven, woven, high strength and composite knitted – all of which perform various functions within different applications.

Technical data sheets are available to determine the correct type of Geotextile for your particular use.

NON-WOVEN – manufactured from continuous polyester filaments needle-punched designed for filtration, drainage, separation and reinforcement applications within and under embankments, pavements and rock. Designed to Qld main roads specifications (*MRS11.03),* manufactured from non-woven Geotextile.

MRS11.03 ***Strength Class "A"***	***MRS11.03*** ***Strength Class "B"***	***MRS11.03*** ***Strength Class "C"***	***MRS11.03*** ***Strength Class "D"***	***MRS11.03*** ***Strength Class "E"***
2m x 100m	*2m x 150m*	*2m x 100m*	*2m x 90m*	*2m x 60m*
2m x 200m	*4m x 150m*	*4m x 100m*	*4m x 90m*	*4m x 60m*
4m x 100m				
4m x 200m				

WOVEN – manufactured from polypropylene yarn. Ideal use as a separation layer in wet soils. Can reduce volume of ag required to achieve stability in wet road subgrade and extend design life by preventing deterioration of the initial strength of the pavement.

30kN	**60kN**	**80kN**
4m x 150m	5.2m x 100m	5.2m x 100m

HIGH STRENGTH – manufactured from uncoated high tenacity polyester yarns and knitted designed to reinforce soil structures subject to high load.

100/40	**100/60**	**100/100**	**200/50**	**600/50**	**330kN/m**	**880kN/m**
5.3m x 40m	5.3m x 60m	5.3m x 100m	5.3m x 80m	5.3m x 100m	4.5m x 100m	4.5m x 100m

COMPOSITE – High strength composite Geotextile offering high modulus characteristics for reinforcement for applications with high in-plane drainage capacity and high installation survivability.

Geotextile Container Groynes
1.2m diameter

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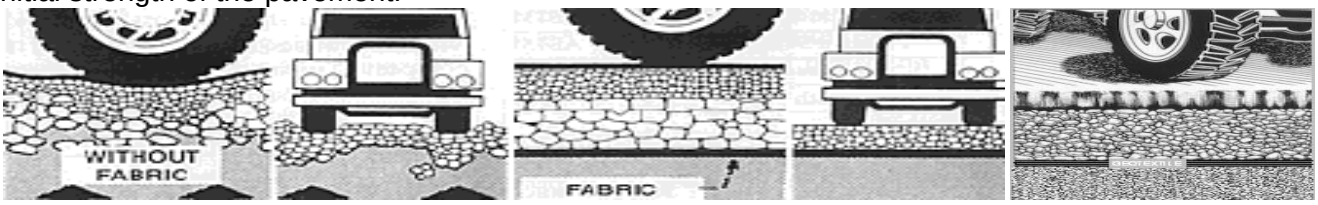
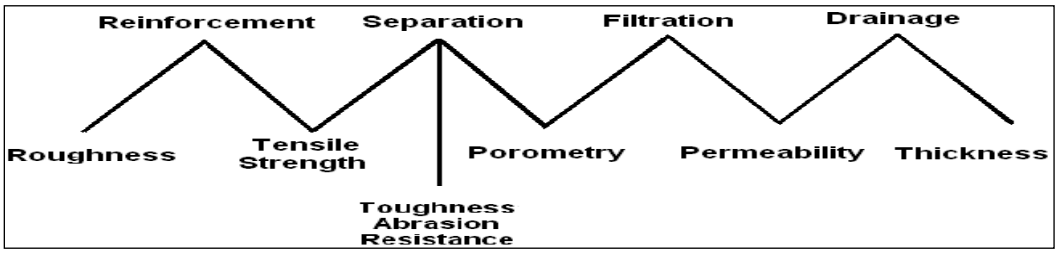
The use of Geotextiles extends the design life of the structure by preventing the deterioration of the initial strength of the pavement.



EXAMPLES OF FUNCTION PROPERTIES REQUIRED IN GEOTEXTILE

Conventional construction methods result in substantial volumes of aggregate being forced into a wet sub-base and lost, without significant stability gain. With woven fabric less aggregate is needed to achieve stability, thereby reducing construction time and costs, and allowing work to continue under wet conditions. The use of a fabric extends the design life of the structure by preventing the deterioration of the initial strength of the pavement.

HOW TO CHOOSE THE CORRECT GEOTEXTILE:



Four basic functions are defined for the Geotextile:

1. **Filtration:** Filtration functions to restrict the migration of fine soil particles from a soil mass while remaining permeable to water movement at least greater than, or equivalent to, permeability of the protected soil.
2. **Drainage:** Water is conveyed along the plane of the Geotextile due to its construction, and then to an outlet. Water may be vertically or horizontally conveyed. Drainage is related to the role of filtration, and is a function of the permeability of a Geotextile and its pore opening size or porometry.
3. **Separation:** Separation is that function which prevents two distinct soils or different materials from intermixing. The key factors for a Geotextile to satisfy this function are porometry, toughness and strength.
4. **Reinforcement:** This function involves stabilization of a soil mass by provision of tensile strength to the soil-fabric system.