

GSE Nonwoven Geotextiles

GSE NONWOVEN NEEDLEPUNCHED GEOTEXTILES

GSE nonwoven needlepunched geotextiles are manufactured at our state-of-the-art needlepunching plant in Kingstree, South Carolina. The plant has been certified according to ISO 9002 quality system.

GSE manufactures 4 to 32 oz/yd² geotextiles designated as NW4, NW6, NW8, NW10, NW12, NW16, NW20, NW24, NW28, and NW32. The most common function and usage of these products is indicated in Figure 1 below. However, the actual selection of the product depends on the specific needs of a project. For example, while NW16 is commonly used for geomembrane protection, it can also be used in filtration and separation because of specific design needs.

ASPHALT OVERLAY

It is common for asphalt pavements to crack prematurely because of design flaws, material limitations or environmental reasons. A fresh layer of asphalt is the most common remedy for this problem. However, reflective cracking – the propagation of cracks from old cracked surface into the new surface – limits the performance of the fresh asphalt overlay. To prevent reflective cracking, a nonwoven needlepunched geotextile must be placed above the cracked surface before placing the new layer. The geotextile works as a sealant and stress-absorbing layer. There are comprehensive design and construction methods available for this purpose. GSE NW4 is ideal for preventing reflective cracking. Figure 2 shows the use of geotextiles to prevent reflective cracking.

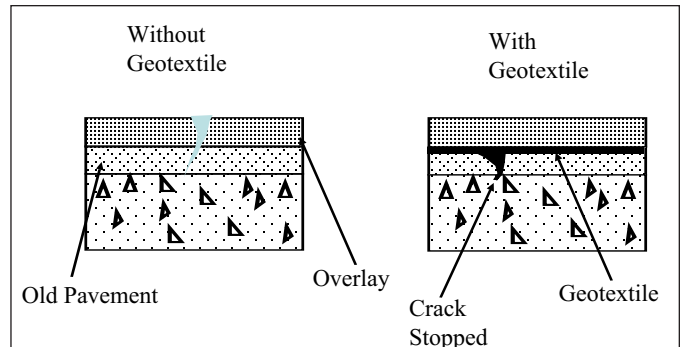


Figure 2 - Use of GSE nonwoven geotextiles to prevent reflective cracking.

deterioration of their engineering performance. For example, contamination of aggregate by fine particles always leads to a decrease in the permeability of the aggregate. The separation function refers to the use of geotextiles to maintain physical separation between two adjacent materials. This is demonstrated graphically in Figure 3. GSE geotextiles are ideal for this purpose because of their strength, durability, flexibility and a highly porous structure.

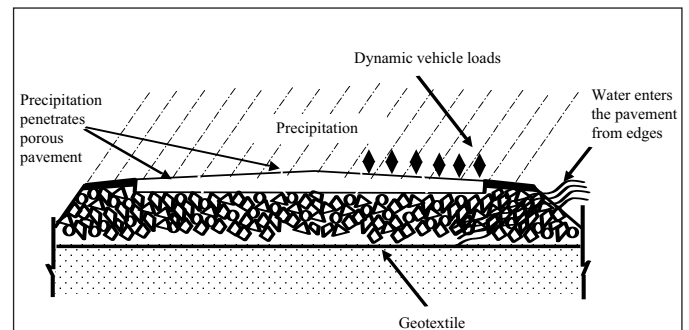


Figure 3 - Use of GSE geotextiles for separation.

FILTRATION

When used as filters, GSE nonwoven needlepunched geotextiles allow the passage of liquid while preventing the loss of soil particles. GSE offers a range of products with opening size to meet filtration needs for different types of soils. For relatively coarse soils, lower mass products – NW4, NW6 and NW8 are recommended. For fine soil particles, it is better to use heavier mass geotextiles such as NW10, NW12 or NW16. Depending on the needs of a specific project, GSE has a geotextile available which will perform the intended design function.

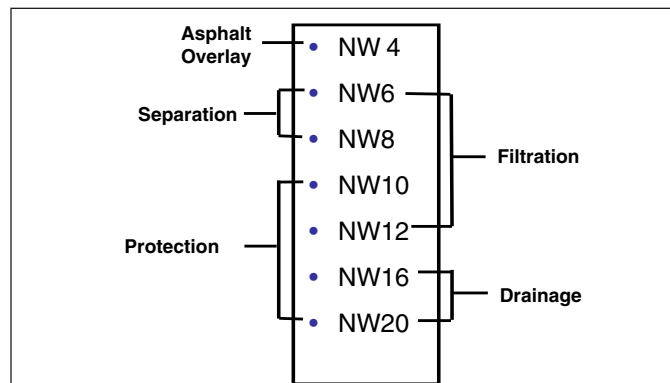


Figure 1 - Most common usage of GSE nonwoven needlepunched geotextiles.

SEPARATION

Intermixing of two dissimilar materials always leads to the

PROTECTION

Geomembrane liners are very sensitive to damage and puncture during construction as well as over the life of a project. Therefore, geomembranes must be protected both from top and bottom. GSE nonwoven needlepunched geotextiles are ideal for this purpose because of their cushioning ability. Depending on soil size and overburden loads, one of the many geotextiles offered by GSE can be selected to ensure that geomembrane performance is not compromised.



Figure 4 - Use of GSE geotextiles for geomembrane protection.

ADDITIONAL INFORMATION

If you have an upcoming project please give us a call. We will prepare a scope of work outlining the necessary materials and construction support for the effective completion of a specific project. GSE has a staff of product managers, estimators, and project managers to assist with your project from conception through project completion.

DRAINAGE

Liners are used typically to prevent infiltration of liquids into environmentally sensitive areas. In certain cases, trapped gases and vapors must be vented to prevent uplifting of the liner. GSE nonwoven needlepunched geotextiles are ideal for gas and vapor drainage from under the liners. The high porosity of GSE geotextiles facilitates drainage while providing added benefit of cushion for the liners. A general configuration of this application is provided in Figure 5 below.

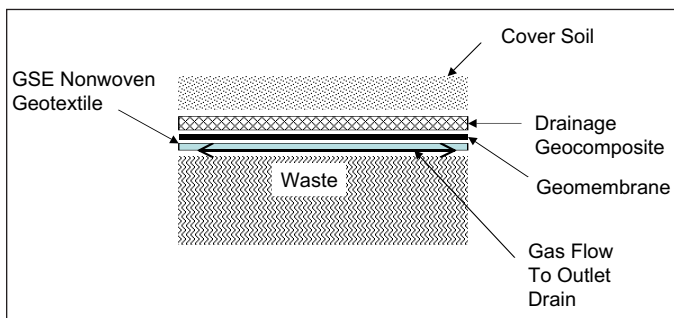


Figure 5 - Use of GSE geotextiles for geomembrane protection.

AP029 Geotextiles R03/01/06

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North America	GSE Lining Technology, Inc.	Houston, Texas	800 435 2008	281 443 8564	Fax: 281 230 8650
South America	GSE Lining Technology Chile S.A.	Santiago, Chile		56 2 595 4200	Fax: 56 2 595 4290
Asia Pacific	GSE Lining Technology Company Limited	Bangkok, Thailand		66 2 937 0091	Fax: 66 2 937 0097
Europe & Africa	GSE Lining Technology GmbH	Hamburg, Germany		49 40 767420	Fax: 49 40 7674234
Middle East	GSE Lining Technology-Egypt	The 6th of October City, Egypt		202 2 828 8888	Fax: 202 2 828 8889