CHARACTERISTICS AND ADVANTAGES OF VARIOUS GEOMEMBRANE TEXTURES

Coextruded Geomembrane Texture

Characteristics

- Produced on round die/blown film extrusion equipment.
- Rolls are cooled by chilled air.
- Pattern can varied and controlled; asperity height and texture distribution can be varied and controlled.

Benefits and Advantages

- Being able to vary the asperity height and texture distribution provides advantages in some instances. For example, during a seismic event it can assure that the appropriate side of the interface will shear, which allows for continued containment.
- Offers increased frictional performance and better adhesion against nonwoven geotextile.

Spray-On Geomembrane Texture

Characteristics

- Produced when a molten polymer mixed with hot air is sprayed onto the geomembrane at a given speed and concentration.
- Shares many of the same characteristics with coextruded: asperity and texture can be varied and controlled.
- Asperity height is slightly more limited than it is with coextruded texture.

Benefits and Advantages

- Physical properties of a spray-on textured geomembrane usually equal that of smooth sheet: higher break elongation performance, fewer stress risers.

GSE Environmental has produced and sold every variety of textured geomembrane, so we are uniquely positioned to explain the advantages and disadvantages of each.

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Structured Geomembrane Texture

**Characteristics**
- Produced on flat cast extrusion equipment.
- Fixed pattern of raised bumps or ridges.
- Rolls are cooled by contact rolls that also leave an impression on the geomembrane.
- Once established, the pattern is fixed; asperity height and texture distribution is fixed.

**Benefits and Advantages**
- Offers better performance with some non-cohesive soils.

For product interfaces with higher adhesion, the use of a rub sheet is common and slightly more time consuming for the geosynthetic installer. However, proper slope stability and sufficient interface properties that resist slides and failures have far more importance to the designer and the owner than saving a few moments of the geosynthetic installer’s time.

“As a simple rule, if you can take a piece of nonwoven fabric and essentially “polish” the surface of the textured geomembrane by hand, then it lacks the level of adhesion required for slope applications—pretty common sense among experienced designers!”