

Insulating Drainage Geocomposite, (IDG)

DESCRIPTION

Furnish sheets of a laminate comprised of an insulated drainage panel with a geotextile filter fabric. Thickness to be as shown on the plans or as directed in writing by the engineer.

MATERIALS

General

Furnish sheets of IDG in 4 ft. x 4 ft. dimensions, thickness as shown on the plans¹. Geotextile filter fabric to be as recommended by the engineer to accommodate soil conditions on any specific site. The sheets shall have a size tolerance of $\pm 1/8$ inch for each dimension and meet the physical properties given in Table I.

Physical Properties of the IDG

Table I		
Specification	Property	Drainage Geocomposite
ASTM D1622	Density (Nominal)	2.0 pcf
ASTM D4716	Transmissivity	12 gpm for 4" thick sheet
ASTM C518	Thermal Conductivity	R=3.5/inch (dry)
ASTM D1621	Initial Young's Modulus	< 100 psi
ASTM D1621	Strength @ 10% Strain	< 5 psi

Physical Standards

The IDG sheets shall be produced by a manufacturer with an in-place third party certification, quality control program, which is monitored by an independent testing organization.

The IDG shall be labeled with the manufacturer's name and product type. Adhesive for installing the IDG shall be supplied by the manufacturer.

¹ Available in thicknesses ranging from 2" to 24" depending on design by the Engineer for a specific site.

The IDG will be manufactured with a standard, nonwoven geotextile that is non-biodegradable and resistant to most soil chemicals, acids and alkalis with a pH range of 3 to 12². The geotextile is manufactured to meet or exceed the requirements listed in Table 2.

Physical Properties of the Standard Geotextile

Table 2		
Property	Test Method	Minimum Average Roll Value
Tensile Strength	ASTM D 4632	90 lbs.
Tensile Elongation	ASTM D 4632	50%
Puncture Strength	ASTM D 4833	55 lbs.
Mullen Burst	ASTM D 3786	185 psi
Trapezoid Tear	ASTM D 4533	40 lbs.
A.O.S.	ASTM D 4751	70 U.S. sieve
Water Flow Rate	ASTM D 4491	155 gpm/ft ²
Permittivity	ASTM D 4491	2.1 1/sec
UV Resistance (Strength retained @ 500 hrs.)	ASTM D 4355	70%

BASIS OF ACCEPTANCE

Furnish the Engineer with two copies of third party test reports showing that the components of the IDG sheets meet the physical properties and standards listed above.

The GeoTech Insulated Drainage Panel as manufactured by licensees of GeoTech Systems Corporation, 9912 Georgetown Pike, Suite D-2, Great Falls, Virginia 22066, phone (703) 759-0300, is an approved material.

CONSTRUCTION DETAILS

General

Exercise care to prevent damage to the IDG panels during delivery, storage, and construction. Damaged panels will not be used.

² The IDG can utilize any geotextile the Engineer may design as appropriate to a specific site.

Protect the IDG panels from: (1) Organic solvents such as acetone, benzene, and paint thinner; (2) Petroleum based solvents such as gasoline and diesel fuel; (3) Open flames; (4) Prolonged exposure to sunlight (no more than 90 days) during shipping and on-site storage. Utilize reflective packaging for on-site storage to avoid damage to the material caused by the build up of heat within the packaging from sunlight.

Installation

IDG is installed with the geotextile component facing the earth. Geotextile on the drainage panel is oversized and must overlap. There must be a relief path at the bottom of the wall to allow the water which will collect in the drainage panel to be carried away. This is usually either a perimeter drain system, or weep holes through the wall which extend through the drainage panel layer. Place 3 walnut size daubs of adhesive evenly spaced across the top of the panel and press the panel against the vertical surface. Stagger panel joints. Trim the panels as necessary to maintain proper coverage throughout the panel height. Trim or cut the panels using a handsaw or an alternative cutting method approved by the Engineer.

To avoid continuous joints, place panels in a bond pattern and orient each successive panel midway over the previous panel as shown on the plans.

METHOD OF MEASUREMENT

The quantity of IDG is the number of square yards satisfactorily installed as measured in its final position.

BASIS OF PAYMENT

The unit price bid per square yard includes the cost of labor, materials, incidentals, and equipment necessary to satisfactorily install the Insulating Drainage Geocomposite (IDG).