11.1050 DITEST SMARTGeoTex FABRIC

Fiber optic combined temperature & strain sensing cable and geo-textile



GENERAL DESCRIPTION

Geo-textile structures, beside reinforcing capability in the field of geotechnical engineering, can be also equipped with FO sensors for monitoring purposes. Thus DiTeSt SMARTGeoTex Fabric becomes an innovative solution that combines the benefits of using geosynthetic materials with the sensing capabilities of FO for geotechnical applications and structural health monitoring.

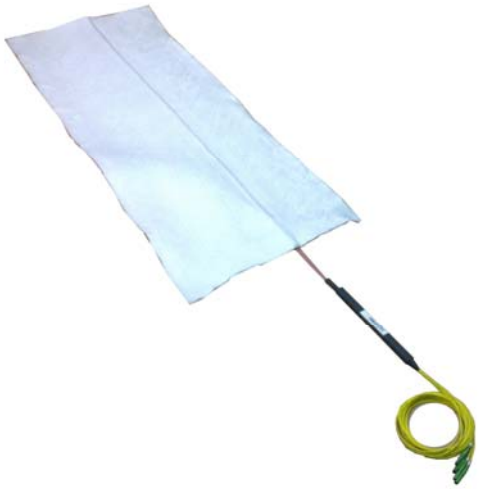
The DiTeSt SMARTGeoTex Fabric, based on the Brillouin scattering technology, combines strain and temperature sensors with geosynthetic material and are designed for distributed deformation (average strain) and temperature monitoring over long distances.

The geosynthetic provides filtering capability in order to prevent scouring phenomena around the sensor and increase the surface of contact hence improving the mechanical coupling with the surrounding soil.

The DiTeSt SMARTGeoTex Fabric sensor is especially suitable for ground settlements and displacements detection in geotechnical structures such as dams, dikes, levees, embankments, road, ladfills and slopes.

The DiTeSt SMARTGeoTex Fabric integrates SMARTEC Strain and Temperature Distributed Sensor: SMARTprofile and SMARTube (see respective data-sheets for sensors details).

The DiTeSt SMARTGeoTex Fabric sensor is fully compatible with DiTeSt® system. It is delivered on customized spools and with all the necessary accessories.



FEATURES

- Distributed temperature & strain sensing
- Sensor integration in geo-textiles for in-field geotechnical application
- Good mechanical coupling with the surrounding soil thanks to filtering capabilities of the geo-textile
- DiTeSt® compatible
- Mechanically reinforced
- Chemically resistant
- Easy and rapid installation
- Light weight and small dimensions

PERFORMANCES

DiTeSt SMARTGeoTex Fabric	Test Method	Units		Typical Values
Tensile strength	ASTM D 4595	kN/m	MD/CD	37 / 12 [1]
Elongation at maximum strength	ASTM D 4595	%	MD/CD	11.5 / 85
Tensile strength at 2% strain	ASTM D 4595	kN/m	MD	7.5
Tensile strength at 5% strain	ASTM D 4595	kN/m	MD	14
Friction properties in contact with sand (40°)	ASTM D 5321	degrees		30°
Puncture resistance (CBR)	ASTM D 6241	kN		2.4
In-the plane water flow capacity @ 20 KPa	ASTM D 4716	$m^3/s/m$		$20\ 10^{-7}$
Weight per unit area (without FO sensors)	ASTM D 5261	g/m^2		290
Standard width (other on demand)[2]		m		1
Standard length (other on demand)[2]		m		100-600

MD: Machine direction, also direction of the FO sensors
CD: Cross direction
[1] Higher strength on demand
[2] Custom roll sizes available

ORDERING INFORMATION

DiTeSt-DiTemp Temperature Sensing Cable

DiTeSt SMARTprofile Sensor

DiTeSt SMARTube Sensor

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