

## Firestone GeoGard™ EPDM

### 1. Description

The Firestone GeoGard™ EPDM geomembrane is a 100% cured lining membrane made of a synthetic rubber Ethylene-Propylene-Diene Terpolymer. It is available in a variety of panel sizes. Depending on the dimensions of the liner, the waterproofing surface may be seamless (up to 930 m<sup>2</sup>). In other situations, seams can be made using a self-adhesive tape.



### 2. Preparation

The substrate needs to be compacted, clean, smooth, dry and free of sharp edges, stones, small cavities, loose or foreign materials, vegetation, roots, oil, grease and other materials that may damage the membrane. Organic and compressive grounds will be removed. Erosive and dissolvable grounds will be avoided.

The installation of a water and a gas drainage networks are recommended. A protective geotextile will systematically be installed between the substrate and the geomembrane.

### 3. Application

Allow the membrane to relax for minimum 30 minutes before splicing. Refer to the Firestone guidelines for specific installation instructions.

### 4. Coverage

The dimensions of the membrane are calculated to cover the base of the reservoir, slopes and anchor trenches, including seam overlaps.

### 5. Characteristics

#### Physical

- Elastomeric membrane with a good combination of high elasticity and tensile strength.
- Excellent resistance to UV and ozone.
- Retains its elasticity and flexibility even at temperatures as low as -45°C.
- Resistant to temperature shocks up to 130°C.
- Excellent resistance to acid rains.
- Contact with some kind of oils, petroleum based products, grease and chlorine must be avoided.

#### Technical

- |            |                  |
|------------|------------------|
| • Base     | Synthetic rubber |
| • Color    | Black            |
| • Solvents | None             |
| • Solids   | 100 %            |
| • State    | Cured            |

## 6. Technical Specifications

Physical properties	Test method	Declared value 1,1 mm	Declared value 1,5 mm	Tolerance	Unit
Mass per unit area	EN 1849-2	1288	1695	± 5%	g/m <sup>2</sup>
Tensile strength (MD/CD)	EN 12311-2	9	10	-1	N/mm <sup>2</sup>
Elongation without yield point (MD/CD)	EN 12311-2	≥ 300	≥ 300		%
Dimensional stability	EN 1107-2	≤ 0.5	≤ 0.5		%
Flexibility at low temperature	EN 495-5	≤ -45	≤ -45		°C
Resistance to static puncture	EN ISO 12236	0.7	0.9	-0.1	kN
Distance of the plunger before puncture	EN ISO 12236	110	110	-5%	mm
Liquid tightness under high pressure application (4 bar = 40 m depth)	EN 1928:2000 (B)	Watertight	Watertight		
Water permeability (liquid tightness)	EN 14150	3.0 10 <sup>-6</sup>	3.0 10 <sup>-6</sup>	± 10 <sup>-6</sup>	m <sup>3</sup> m <sup>2</sup> /d
Methane permeability (gas tightness)	ASTM D1434	2.25 10 <sup>-3</sup>	2.25 10 <sup>-3</sup>		m <sup>3</sup> m <sup>2</sup> /d
Durability - weathering (25y)	EN 12224	Pass	Pass		
Durability - oxidation	EN 14575	Pass	Pass		
Friction angle	EN ISO 12957-2	27.5	27.5	± 1	°
Resistance to root penetration	CEN/TS 14416	Pass	Pass		

Note: As European standards continue to develop, please contact Firestone's Technical Department or visit [www.firestonebpe.com](http://www.firestonebpe.com) for the latest updates on physical properties.

## 7. Packaging / Storage / Shelf life

Thickness	Width	Length	Weight (incl. Packaging)
1.1 mm (0.045")	3.05 m (10')	30.50 m (100') 61.00 m (200')	1.41 kg/m <sup>2</sup>
	6.10 m (20')		
	7.62 m (25')		
	9.15 m (30')		
	12.20 m (40')		
	15.25 m (50')		
1.5 mm (0.060")	3.05 m (10')	30.50 m (100') 45,75 m (150') 61.00 m (200')	1,95 kg/m <sup>2</sup>
	6.10 m (20')		
	7.62 m (25')		
	9.15 m (30')		
	12.20 m (40')		
	15.25 m (50')		

Note: Not all panel widths exist in all lengths. Membranes may be available in additional panel sizes, please contact your Firestone Representative.

**Storage:** Store away from sources of punctures and physical damage. Store away from ignition sources and open flame.

**Shelf life:** Unlimited.

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