Geomembranes
that work

Firestone

EPDM

GEOMEMBRANE

Lining in Action™

www.firestonebpe.com

Dependable performance in demanding environments

Firestone EPDM Geomembrane is a rubber liner offering a flexible and durable solution for a wide variety of agricultural, industrial and commercial applications, including:

- Irrigation reservoirs and canals
- Fire reservoirs
- Agricultural pits and ponds
- Aquaculture ponds
- Settlement lagoons
- Waste water reservoirs
- Artificial snow reservoirs
- Constructed wetlands
- Landfill capping
- Artificial lakes

Whether for critical containment applications or sizeable water features, Firestone's EPDM Geomembrane System is easy to install and built to last.

Proven product

Thousands of applications worldwide - many in demanding environments - are living proof of the exceptional performance of Firestone EPDM Geomembrane.

The first use of Firestone rubber membranes in irrigation reservoirs located in the South of Spain dates from nearly 40 years ago. Today, even after decades of service, the rubber liner continues to provide a dependable waterproof solution.

A wide variety of applications


Irrigation reservoir, New Zealand


Artificial snow reservoir, Spain

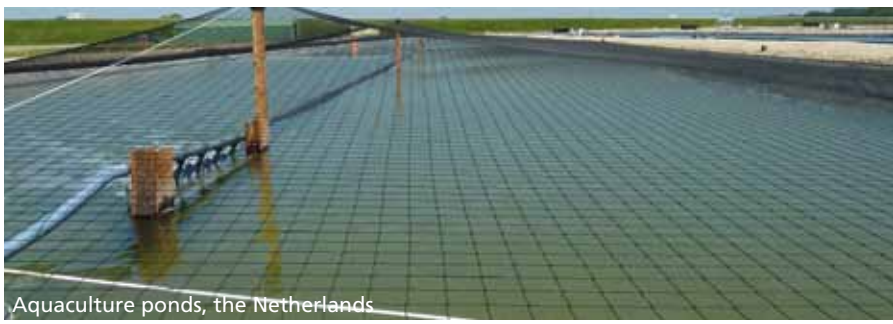

Waste water reservoir, the Netherlands


Landfill capping, France


Aquaculture ponds, USA


Dung pit, France


Constructed wetland, France


Aquaculture ponds, the Netherlands


Dung pit, Hungary


Irrigation reservoir, Turkey


Canal, Serbia


Irrigation reservoir, Spain


Golf course pond, South Korea


Fire reservoir, Germany

Unique features and benefits

Firestone EPDM Geomembrane is an elastomeric synthetic rubber membrane with a cross linked polymer structure resulting in a chemically stable membrane with unique features and benefits.

Highly flexible even at low temperatures

Firestone EPDM Geomembrane is highly flexible even at low temperatures down to -45 °C, offering year round installation. This flexibility enables the membrane to adapt to irregular shapes in the substrate and offers excellent lay flat characteristics.

High elasticity and tensile strength

Firestone EPDM Geomembrane is highly elastic and can be elongated over 300% in all directions without cracking to accommodate earth settlements.

Hydrostatic pressure resistance

Firestone EPDM Geomembrane provides almost unlimited hydrostatic pressure resistance compared to other common geomembranes allowing the membrane to be used in deep, large-sized water reservoirs.

Dimensional stability

Firestone EPDM Geomembrane can be easily deformed but will return to its original size and shape, unlike thermoplastic membranes that can undergo a permanent deformation and thickness reduction.

Long-term durability

The first Firestone rubber lining installations dating from 1973 are living proof of the membrane's long lasting performance. Firestone EPDM Geomembrane offers unmatched resistance to UV, ozone and extreme temperatures, with no change of physical properties regardless whether the membrane is exposed or covered.
It contains no plasticizers that could migrate and lead to premature membrane failure. If needed, EPDM Geomembrane can be easily repaired even after decades of service.

Easy to install

Firestone EPDM Geomembrane is available in large seamless panel sizes up to 15 m wide and 61 m long (930 m^2) resulting in short installation times and fewer field seams for large surfaces. Additionally, Firestone's QuickSeam™ Tape System provides a proven field seaming solution without requiring special tools.

Chemical resistance

Firestone EPDM Geomembrane exhibits high resistance to alkali and acid rain, nitrates and phosphates in solution, alcohols, soil chemicals and micro-organisms. Contact with hydrocarbons, petrol, hot bitumen, grease, oils and chlorine must be avoided.

Environmentally friendly

Firestone EPDM Geomembrane is a chemically stable membrane without environmental pollutants. The membrane's long life expectancy and recycling options, combined with its use for water conservation and environmental protection, make it a green geomembrane solution. Furthermore, Firestone's commitment to the environment has lead to numerous initiatives throughout the company including an ISO 14001 certified Environmental Management System at its EPDM manufacturing facilities.

Firestone GREEN ONE TEAM, ONE PLANET

Fully engineered system

Firestone has developed a full range of accessory products for its EPDM Geomembrane that function together as a complete watertight system: QuickSeam Tape, QuickSeam FormFlash, adhesives and sealants.
Each component of Firestone's EPDM Geomembrane System has been carefully designed and thoroughly tested in the company's R&D department.

Reliable seaming method

Multiple Firestone EPDM Geomembrane panels can be assembled on site using the Firestone QuickSeam Tape System. This technology is based on a self-adhesive EPDM/butyl tape used in combination with Firestone QuickPrime Plus primer. This tape seaming technique is quick and easy without the use of special tools and it provides excellent constant seam strength. Installation method, speed and quality are independent of membrane thickness. Since its first application in 1987, millions of linear meters of Firestone QuickSeam Tape have been successfully installed.

Installation details

Flashing of pipes, other penetrations, inside and outside corners is fast and easy with use of Firestone QuickSeam FormFlash, an uncured EPDM flashing laminated to a self-adhesive QuickSeam Tape. Firestone QuickSeam FormFlash can be easily molded to adapt to any shape.

Quality installation

The performance of a Firestone EPDM Geomembrane System is subject to quality installation by approved lining contractors who share our commitment to excellence. Firestone offers contractors educational programs covering all aspects of an EPDM Geomembrane System installation. The company's installation support extends on the job site where field technicians offer training, professional assistance and quality inspection of finished installations. Firestone's installation standards are specified in a comprehensive installation guide including detail drawings.

Certified quality Geomembrane

Technical Specifications
Firestone EPDM Geomembrane 1.1 mm and 1.5 mm

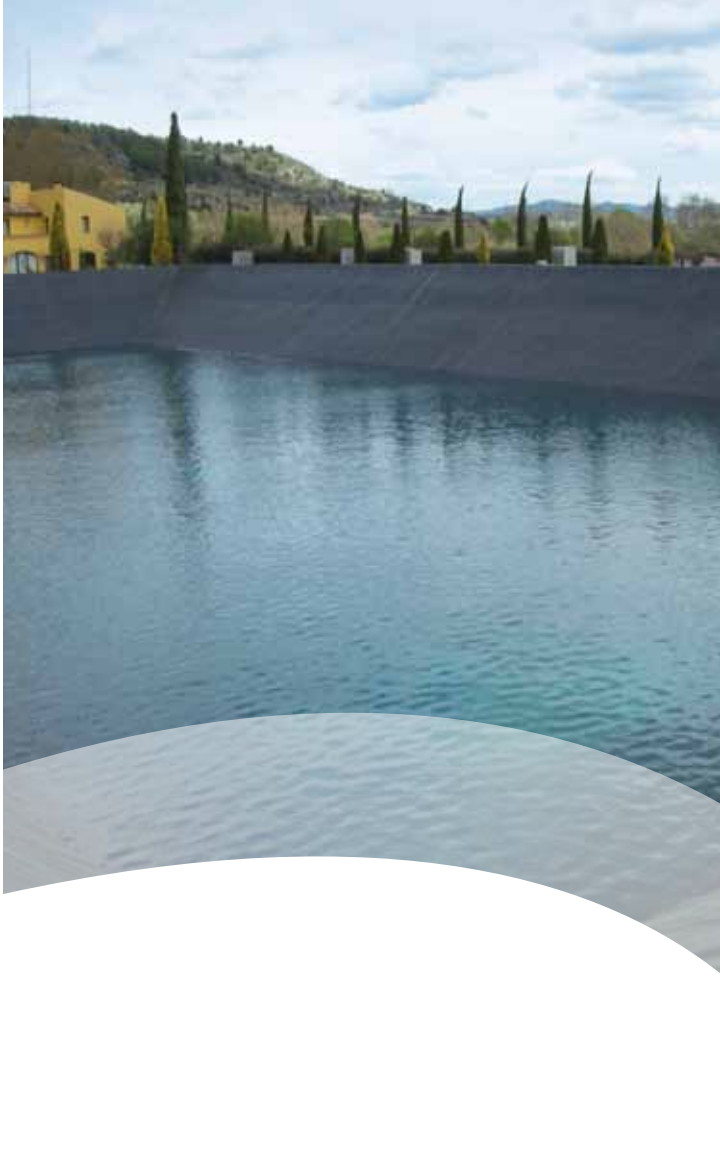
Physical Properties	Standard	Declared Value 1.1 mm (.045")	Declared Value 1.5 mm (.060")	Tolerance	Unit
Mass per unit area	EN 1849-2	1288	1695	± 5%	gr/m²
Tensile strength (MD/CD)	ISO R 527	9	10	-1	N/mm²
Elongation (MD/CD)	ISO R 527	≥ 300	≥ 300		%
Dimensional stability	EN 1107-2	≤ 0,5	≤ 0,5		%
Foldability low temperature	EN 495-5	≤ -45	≤ -45		°C
Resistance to static puncture	EN ISO 12236	0,7	0,9	-0,1	kN
Liquid tightness under high pressure application (4 bar = 40 m depth)	EN 1928:2000 Method B	Watertight	Watertight		
Water permeability (Liquid tightness)	EN 14150	$3,0\ 10^{-6}$	$3,0\ 10^{-6}$	$\pm 10^{-6}$	m³/m²d
Methane permeability (Gas tightness)	ASTM D1434	$2,25\ 10^{-3}$	$2,25\ 10^{-3}$		m³/m²d
Durability - weathering (25 y)	EN 12224	Pass	Pass		
Durability - oxidation	EN 14575	Pass	Pass		
Friction angle	EN ISO 12957-2	27,5	27,5	±1	°
Resistance to roots penetration	CEN/TS 14416	Pass	Pass		

Please visit our website **www.firestonebpe.com** for the most current product and technical information.

Product certification

Firestone EPDM Geomembrane has obtained the CE-marking. In addition, Firestone EPDM Geomembrane has been tested and certified to various international and national standards for physical properties and seam strength, including the French ASQUAL certification.

CE ASQUAL



Over a century of rubber experience

Firestone has been a world-recognized leader in rubber polymer technology for over 100 years. Building on this broad legacy, Firestone Building Products has become a global leading manufacturer of rubber roofing and waterproofing systems. Firestone Building Products is a division of Firestone Diversified Products, LLC, part of the Bridgestone Corporation, the world's largest tire and rubber company.

Quality manufacturing and services

Firestone Building Products is dedicated to carry on the quality tradition in rubber technology established by Harvey S. Firestone in 1900. The company's state-of-the-art EPDM manufacturing facilities based in North America follow stringent quality control guidelines from raw material selection to finished product testing. Our operations have also been certified according to ISO 9001 and ISO 14001.

Firestone's proven products are further backed by a professional level of service including assistance with specification development, ongoing technical counsel, training, technical field support and quality inspection of finished installations.

BSI REGISTERED
ISO 9001
FM 81489

BSI REGISTERED
ISO 14001
EMS 85828

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