

GSE TunnelLiner Geomembrane

GSE TunnelLiner is a highly flexible polyethylene geomembrane specially designed for high-performance tunnel lining applications. GSE TunnelLiner consists of a black core layer and two white* outer layers, which greatly facilitate visual inspection. Whether used in a new design or retrofit installation, GSE TunnelLiner provides a unique combination of security, sealing integrity and installation efficiency.



AT THE CORE:
A highly flexible high-performance geomembrane that provides advanced security, sealing integrity, and installation efficiency.

Product Specifications

Property	Unit	Test Method	Nominal Value			
Thickness ^(a)	mm	EN 1849-2	2.0	2.2	3.0	3.2
Thickness of the Signal Layer (approx.)	mm	EN 1849-2	0.2	0.2	0.2	0.2
Visual Appearance	---	EN 1850-2	Free of voids, bubbles, cracks			
Lateral Skew	mm	EN 1848-2	≤ 50	≤ 50	≤ 50	≤ 50
Waviness	mm		≤ 10	≤ 10	≤ 10	≤ 10
Density (overall)	g/cm ³	ISO 1183-1/A	0.910			
Tensile Properties (each Direction)		EN ISO 527-3 Type 5; 100 mm/min				
Stress at Break	N/mm ²	lo = 50 mm	≥ 22	≥ 22	≥ 22	≥ 22
Elongation at Break	%		≥ 700	≥ 700	≥ 700	≥ 700
Elastic Modulus ₁₂	N/mm ²	EN ISO 527-3, PK 5	≤ 100	≤ 100	≤ 100	≤ 100
Puncture Resistance	N	EN ISO 12236	2,700	2,900	4,200	4,400
Dimensional Stability (each Direction)	%	EN 1107-2 (100°C/1 h)	± 1	± 1	± 1	± 1
Appearance	---		No bubbles	No bubbles	No bubbles	No bubbles
Melt Flow Index	g/10 min	EN ISO 1133 (190°C/5.0 kg)	≤ 3.3	≤ 3.3	≤ 3.3	≤ 3.3
Multiaxial Elongation (Specimen diameter = 1,000 mm)	%	EN 14151	100	100	100	100
Seam Performance						
Shear Strength	N/mm ²	DVS 2225-5 / EN 12317-2			18	
Peel Strength	N/mm	DVS 2225-5 / EN 12316-2			12	
Performance under Hydrostatic Pressure	MPa		Watertight at 6 bar over 72 hours			
Perforation Resistance (Falling Height)	mm	EN 12691, 500 g	≥ 750	≥ 1,000	≥ 1,500	≥ 1,500
Cold Flex Performance at -20°C	---	DIN EN 495-5	no cracking			
Thermo-Oxidative Resistance (85°C / 90 d) Retained Break Strength and Elongation	%	DIN EN 14575	≥ 80			
Resistance to Leaching (8 months / 50°C)	%	SIA-V 280	≥ 75			
Retained Break Strength and Elongation	%	SIA-V 280	≥ 96			
Resistance to Aqueous Solutions / Chemicals	%	EN 14415	≥ 75			
Water (50°C / 56 d)		EN 14415	≥ 75			
Lime Milk (50°C / 56 d)		EN 1897	≥ 80			
Sulfuric Acid (23°C / 28 d)						
Environmental Sustainability	---	BbodSchV	harmless			
Fire Resistance	---	DIN EN ISO 11952 / DIN EN 13501-1	E			
Standard-Roll width ^(b,c)	m	---	1.87 / 2.5 / 3.75 / 7.5			

NOTES:

- (*): Due to the production process the brightness of the signal-layer may vary.
- (a): Tolerance ± 5%; Special thickness available upon request.
- (b): Roll widths and lengths have a tolerance of ± 1%.
- (c): Special roll width & length available upon request

GSE is a leading manufacturer and marketer of geosynthetic lining products and services. We've built a reputation of reliability through our dedication to providing consistency of product, price and protection to our global customers.

Our commitment to innovation, our focus on quality and our industry expertise allow us the flexibility to collaborate with our clients to develop a custom, purpose-fit solution.

[DURABILITY RUNS DEEP] For more information on this product and other, please visit us at GSEworld.com, call 49.40.767420 or contact your local sales office.

