



Firestone EPDM Geomembrane

Firestone Item Number:

Various: See Attached Page

DESCRIPTION:

Firestone EPDM Geomembrane is a cured single-ply geomembrane designed to meet the tolerances of ASTM D7465. It is fish and plant friendly.

PREPARATION OF SUBSTRATES:

1. Substrates must be clean, dry, smooth and free of sharp edges, fines, loose or foreign materials, oil, grease, and other materials that may damage the geomembrane.
2. All roughened surfaces that can damage the geomembrane shall be repaired as specified to offer a smooth substrate.
3. All substrate voids greater than 6.3 mm (0.25") wide shall be properly filled with an acceptable fill material.

METHOD OF APPLICATION:

Firestone EPDM Geomembrane must be installed in accordance with current Firestone Specialty Products specifications and details.

STORAGE:

1. Store away from sources of punctures and physical damage.
2. Store away from ignition sources as geomembrane will burn when exposed to open flame.



PRODUCT DATA

PACKAGING:

Thickness	Weight
1.14 mm (0.045")	1.32 kg/m ² (0.27 lb/ft ²)
1.52 mm (0.060")	1.76 kg/m ² (0.36 lb/ft ²)

See attached page for available length and width options.

PRECAUTIONARY DATA:

1. Take care when moving, transporting, handling, etc. to avoid sources of punctures and physical damage.
2. Isolate waste products, such as petroleum products, greases, oils (mineral and vegetable) and animal fats from the geomembrane. Contact Firestone Specialty Products for specific recommendations.
3. Refer to material Safety Data Sheets (MSDS) for safety information.

LEED INFORMATION:

Post Consumer Recycled Content: 0%
 Post Industrial Recycled Content: 0%
 Manufacturing Locations: Prescott, AR

This sheet is meant only to highlight Firestones products and specifications. Information is subject to change without notice. Firestone takes responsibility for furnishing quality materials, which meet Firestones published product specification. As neither Firestone itself nor its representatives practice design, Firestone offers no opinion on and expressly disclaims any responsibility for the soundness of any project on which its products may be applied. If questions arise as to the soundness of a project, or its ability to support a planned installation properly, the Owner should obtain opinions of competent design engineers before proceeding. Firestone accepts no liability for any failure or for resultant damages, and no Firestone Representative is authorized to vary this disclaimer.

Firestone Specialty Products
 250 West 96th Street, Indianapolis, Indiana 46260
 Specialty Products (800) 428-4442
 Internet Address: <http://www.firestonesp.com>

Firestone 1.14 mm (0.045") EPDM Geomembrane

PHYSICAL PROPERTIES

Property	Test method	Units	ASTM D-7465	
			1.14 mm (0.045")	
			SI	Eng
Specific Gravity	ASTM D-792	gm/cc	1.1	1.1
Unit Weight	ASTM D-751	kg/m (lb/ft)	1.4	.29
Thickness, Type 1	ASTM D-412	mm (in)	1.02 +10/-10%	.045 +10-10%
Tensile Strength, Die C min	ASTM D-412	MPa (psi)	9.0	1305
Ultimate Elongation, Die C min	ASTM D-412	%	300	300
Tear Resistance, Die C	ASTM D-624	kN/m (lbf/in)	26.27	150
Puncture Resistance	ASTM D-4833	N (lbs)	133	30
Shore A Durometer	ASTM D-2240		65-10	65-10
Resistance to Ozone 7 days/100 @ 37.8° C (150° F) 50% ext.	ASTM D-1149		No Cracks	No Cracks
Multiaxial Elongation	ASTM D-5617	%	100	100
Oven Aging At 116° C (240° F) for 670 hours	ASTM D-573			
Tensile strength Die C	ASTM D-412	MPa (psi)	8.3	1205
Ultimate elongation, Die C	ASTM D-412	%	200	200
Tear Resistance, Die C	ASTM D-624	kN/m (lbf/in)	21.9	125
Xenon Arc for 5040 kJ/(m ² .nm) @ 340 nm @ 80°C	ASTM G-155/G-151			
Visual Inspection 7X	ASTM D-518		Pass	Pass
No cracks or crazing bent loop @ 10% strain				
Brittleness Point	ASTM D-2137		-45°C	-49°F
Water Resistance weight after immersion 166 hrs @ 70° C (158° F)	ASTM D-471	%	+8,-2	+8,-2
Water Vapor Permeability (max.)	ASTM E-96	Perm-mils	2.0	2.0
Linear Dimensional Change,max	ASTM D-1204	%	+/- 1.0	+/- 1.0
Chronic Toxicity Screening	EPA/600/4-89/ 001 ASTM E-729	Method 1000.0	passes passes	passes passes

Notes: Certified Firestone EPDM Geomembrane production materials are special order items requiring a minimum of two weeks as production lead-time

Firestone EPDM Geomembrane meets or exceeds the minimum requirements set forth by ASTM D-7465 for Type I Non-reinforced EPDM Geomembrane.

Firestone 1.52 mm (0.060") EPDM Geomembrane

PHYSICAL PROPERTIES

Property	Test method	Units	ASTM D-7465	
			1.52 mm (0.060")	
			SI	Eng
Specific Gravity	ASTM D-792	gm/cc	1.1	1.1
Unit Weight	ASTM D-751	kg/m (lb/ft)	1.8	.40
Thickness, Type 1	ASTM D-412	mm (in)	1.52 +10/-10%	.060 +10/-10%
Tensile Strength, Die C min	ASTM D-412	MPa (psi)	9.0	1305
Ultimate Elongation, Die C min	ASTM D-412	%	300	300
Tear Resistance, Die C	ASTM D-624	kN/m (lbf/in)	40.28	230
Puncture Resistance	ASTM D-4833	N (lbs)	181.56	43
Shore A Durometer	ASTM D-2240		65-10	65-10
Resistance to Ozone 7 days/100 @ 37.8° C (150° F) 50% ext.	ASTM D-1149		No Cracks	No Cracks
Multiaxial Elongation	ASTM D-5617	%	100	100
Oven Aging At 116° C (240° F) for 670 hours	ASTM D-573			
Tensile strength Die C	ASTM D-412	MPa (psi)	8.3	1205
Ultimate elongation, Die C	ASTM D-412	%	200	200
Tear Resistance, Die C	ASTM D-624	kN/m (lbf/in)	37.32	213
Xenon Arc for 5040 kJ/(m ² .nm) @ 340 nm @ 80°C	ASTM G-155/G-151			
Visual Inspection 7X	ASTM D-518		Pass	Pass
No cracks or crazing bent loop @10% strain				
Brittleness Point	ASTM D-2137		-45°C	-49°F
Water Resistance weight after immersion 166 hrs @ 70° C (158° F)	ASTM D-471	%	+8,-2	+8,-2
Water Vapor Permeability (max.)	ASTM E-96	Perm-mils	2.0	2.0
Linear Dimensional Change,max	ASTM D-1204	%	+/- 1.0	+/- 1.0
Chronic Toxicity Screening	EPA/600/4-89/ 001 ASTM E-729	Method 1000.0	passes passes	passes passes

Notes: Certified Firestone EPDM Geomembrane production materials are special order items requiring a minimum of two weeks as production lead-time

Firestone EPDM Geomembrane meets or exceeds the minimum requirements set forth by ASTM D-7465 for Type I Non-reinforced EPDM Geomembrane.



Firestone EPDM Geomembrane Panel Sizes

Firestone EPDM Geomembrane- 1.14mm (0.045") Thickness

Dimensions		Packaging Type	Part Number	Coverage		Weight (typical max weight)	
SI Units (Meters)	Eng Units (Feet)			SI Units (Sq Meters)	Eng Units (Sq Feet)	SI Units (kg)	Eng Units (lbs)
3.05 x 30.48	10 x 100	Roll	W56GM41010	92.90	1,000	155	342
3.05 x 60.96	10 x 200	Roll	W56GM41020	185.81	2,000	310	684
4.57 x 30.48	15 x 100	Roll	W56GM41510	139.35	1,500	233	513
4.57 x 60.96	15 x 200	Roll	W56GM41520	278.71	3,000	466	1027
6.10 x 30.48	20 x 100	Roll	W56GM42010	185.81	2,000	310	684
6.10 x 45.72	20 x 150	Roll	W56GM42015	278.71	3,000	466	1027
6.10 x 60.96	20 x 200	Roll	W56GM42020	371.61	4,000	621	1369
7.62 x 30.48	25 x 100	Roll	W56GM42510	232.26	2,500	388	856
7.62 x 60.96	25 x 200	Roll	W56GM42520	464.52	5,000	776	1711
7.62 x 121.92	25 x 400	Roll	W56GM42540	929.03	10,000	1552	3422
9.14 x 30.48	30 x 100	Roll	W56GM43010	278.71	3,000	466	1027
9.14 x 45.72	30 x 150	Roll	W56GM43015	418.06	4,500	698	1540
9.14 x 60.96	30 x 200	Roll	W56GM43020	557.42	6,000	931	2053
10.67 x 30.48	35 x 100	Roll	W56GM43510	325.16	3,500	543	1198
10.67 x 45.72	35 x 150	Roll	W56GM43515	487.74	5,250	815	1797
10.67 x 60.96	35 x 200	Roll	W56GM43520	650.32	7,000	1087	2395
12.19 x 30.48	40 x 100	Roll	W56GM44010	371.61	4,000	621	1369
12.19 x 45.72	40 x 150	Roll	W56GM44015	557.42	6,000	931	2053
12.19 x 60.96	40 x 200	Roll	W56GM44020	743.22	8,000	1242	2738
13.72 x 30.48	45 x 100	Roll	W56GM44510	418.06	4,500	698	1540
13.72 x 45.72	45 x 150	Roll	W56GM44515	627.10	6,750	1048	2310
13.72 x 60.96	45 x 200	Roll	W56GM44520	836.13	9,000	1397	3080
15.24 x 30.48	50 x 100	Roll	W56GM45010	464.52	5,000	776	1711
15.24 x 45.72	50 x 150	Roll	W56GM45015	696.77	7,500	1164	2567
15.24 x 51.82	50 x 170	Roll	W56GM45170	789.68	8,500	1319	2909
15.24 x 53.34	50 x 175	Roll	W56GM45175	812.90	8,750	1358	2995
15.24 x 60.96	50 x 200	Roll	W56GM45020	929.03	10,000	1552	3422

Firestone EPDM Geomembrane- 1.52mm (0.060") Thickness

Dimensions		Packaging Type	Order Number	Coverage		Weight (typical max weight)	
SI Units (Meters)	Eng Units (Feet)			SI Units (Sq Meters)	Eng Units (Sq Feet)	SI Units (kg)	Eng Units (lbs)
3.05 x 30.48	10 x 100	Roll	W56GM61010	92.90	1,000	214	472
3.05 x 60.96	10 x 200	Roll	W56GM61020	185.81	2,000	428	944
6.10 x 30.48	20 x 100	Roll	W56GM62010	185.81	2,000	428	944
6.10 x 60.96	20 x 200	Roll	W56GM62020	371.61	4,000	856	1888
9.14 x 30.48	30 x 100	Roll	W56GM63010	278.71	3,000	642	1416
9.14 x 60.96	30 x 200	Roll	W56GM63020	557.42	6,000	1285	2832
12.19 x 30.48	40 x 100	Roll	W56GM64010	371.61	4,000	856	1888
12.19 x 60.96	40 x 200	Roll	W56GM64020	743.22	8,000	1713	3776
15.24 x 30.48	50 x 100	Roll	W56GM65010	464.52	5,000	1070	2360
15.24 x 45.72	50 x 150	Roll	W56GM65015	696.77	7,500	1606	3540



Firestone Reinforced EPDM Geomembrane

Firestone Item Number

- W57SI41020:** 3.05 m (10.0') x 60.96 m (200')
1.14 mm (0.045")
- W57SI41010:** 3.05 m (10.0') x 30.48 m (100')
1.14 mm (0.045")
- W57SI61010:** 3.05 m (10.0') x 30.48 m (100')
1.52 mm (0.060")

DESCRIPTION:

Firestone Reinforced EPDM Geomembrane is an internally reinforced cured single-ply geomembrane that features a 9 x 9, 1,000 denier polyester weft inserted reinforcing scrim.

PREPARATION OF SUBSTRATES:

1. Substrates must be clean, dry, smooth, and free of sharp edges, fines, loose or foreign materials, oil, grease, and other materials that may damage the geomembrane.
2. All roughened surfaces that can damage the geomembrane shall be repaired as specified to offer a smooth substrate.
3. All substrate voids greater than 0.25" (6.3 mm) wide shall be properly filled with an acceptable fill material.

METHOD OF APPLICATION:

Firestone Reinforced EPDM Geomembrane must be installed in accordance with current Firestone Specialty Products specifications and details.

This sheet is meant only to highlight Firestone's products and specifications. Information is subject to change without notice. Firestone takes responsibility for furnishing quality materials, which meet Firestone's published product specification. As neither Firestone itself nor its representatives practice design, Firestone offers no opinion on and expressly disclaims any responsibility for the soundness of any project on which its products may be applied. If questions arise as to the soundness of a project, or its ability to support a planned installation properly, the Owner should obtain opinions of competent design engineers before proceeding. Firestone accepts no liability for any failure or for resultant damages, and no Firestone Representative is authorized to vary this disclaimer.



PRODUCT DATA

PACKAGING:

Thickness	Widths	Lengths	Weight
1.14 mm (0.045")	2.29 m (7.5')	30.48 m (100')	1.6 kg/m ² (0.32 lb/ft ²)
	3.05 m (10.0')	30.48 m (100')	
	3.05 m (10.0')	60.96 m (200')	
1.52 mm (0.060")	2.29 m (7.5')	30.48 m (100')	2.0 kg/m ² (0.42 lb/ft ²)
	3.05 m (10.0')	30.48 m (100')	

STORAGE:

1. Store away from sources of punctures and physical damage.
2. Store away from ignition sources as geomembrane will burn when exposed to open flame.

PRECAUTIONARY DATA:

1. Take care when moving, transporting, handling, etc. to avoid sources of punctures and physical damage.
2. Isolate waste products, such as petroleum products, greases, oils (mineral and vegetable) and animal fats from the geomembrane. Contact Firestone Specialty Products for specific recommendations.
3. Refer to Material Safety Data Sheets (MSDS) for safety information.

LEED INFORMATION:

Post Consumer Recycled Content: 0%
 Post Industrial Recycled Content: 0%
 Manufacturing Locations: Prescott, AR

Firestone Specialty Products
 250 West 96th Street, Indianapolis, Indiana 46260
 Specialty Products (800) 428-4442
 Internet Address: <http://www.firestonesp.com>

Firestone 1.14 mm (0.045") Reinforced EPDM Geomembrane

PHYSICAL PROPERTIES

Property	Test Method	Units	ASTM D- 7465	
			1.14 mm (0.045")	
			SI	Eng
Specific Gravity	ASTM D-792	Gm/cc	1.1	1.1
Unit Weight	ASTM D-751	kg/m ² (lb/ft ²)	1.6	.32
Thickness	ASTM D-751	mm (in)	1.14 +15/-10%	.045 +15/-10%
Coating over the scrim or fabric ³	D-751 Type II	mm (in)	0.38	0.015
Break Strength, min Grab Method	ASTM D-7004	N (lbf)	711	160
Tear Strength, min B-Tongue Tear	ASTM D-7004	N (lbf)	315	70
Puncture Resistance, min	ASTM D-4833	N (lbs)	337.5	75
Shore A Durometer	ASTM D-2240		65-10	65-10
Ozone Resistance	ASTM D-1149		No Cracks	No Cracks
Ultimate Elongation , min	ASTM D--412	%	250 ^A	250 ^A
Heat Aging	ASTM D-573			
Breaking Strength, min Grab	ASTM D-7004	N (lbf)	356	80
Ultimate Elongation, min	ASTM D-7004	%	200 ^A	200 ^A
Linear dimensional change,max%	D-1204	%	+/- 1	+/- 1
Accelerated Aging: Xenon Arc	ASTM G-155/151		Pass	Pass
Brittleness Point, Max °C (°F)	ASTM D-2137		-45°C	-49°F
Water Absorption ^A	ASTM D-471	%	+8,-2	+8,-2
Water Vapor Permeability, max	ASTM E-96	Perm mils	2.0	2.0
Chronic Toxicity Screening	EPA/821-R-02-013/ ASTM E-729	Method 1000.0	passes /passes	passes /passes

^ASpecimens to be prepared from coating rubber compound, vulcanized in a similar method to the reinforced products.

Notes:

1. Certified Firestone Reinforced EPDM Geomembrane production materials are special order items requiring a minimum of two weeks as production lead-time.
2. Following all testing conditions outlined in the standards document, Firestone Reinforced EPDM Geomembrane meets or exceeds the minimum requirements set forth by ASTM D-7465 for Type II scrim-reinforced EPDM Geomembranes.
3. For coating over the scrim measurements, follow appendix in ASTM D-7465.

Firestone 1.52 mm (0.060") Reinforced EPDM Geomembrane

PHYSICAL PROPERTIES

Property	Test Method	Units	ASTM D- 7465	
			1.52 mm (0.060")	
			SI	Eng
Specific Gravity	ASTM D-792	Gm/cc	1.1	1.1
Unit Weight	ASTM D-751	kg/m ² (lb/ft ²)	2.0	.42
Thickness	ASTM D-751	mm (in)	1.8 +15/-10%	.060 +15/-10%
Coating over the scrim or fabric ³	D-751 Type II	mm (in)	0.38	0.015
Break Strength, min Grab Method	ASTM D-7004	N (lbf)	888.9	200
Tear Strength, min B-Tongue Tear	ASTM D-7004	N (lbf)	315	70
Puncture Resistance, min	ASTM D-4833	N (lbs)	337.5	75
Shore A Durometer	ASTM D-2240		65-10	65-10
Ozone Resistance	ASTM D-1149		No Cracks	No Cracks
Ultimate Elongation , min	ASTM D--412	%	250 ^A	250 ^A
Heat Aging	ASTM D-573			
Breaking Strength, min Grab	ASTM D-7004	N (lbf)	888.9	200
Ultimate Elongation, min	ASTM D-7004	%	200 ^A	200 ^A
Linear dimensional change, max%	D-1204	%	+/- 1	+/- 1
Accelerated Aging: Xenon Arc	ASTM G-155/151		Pass	Pass
Brittleness Point, Max °C (°F)	ASTM D-2137		-45°C	-49°F
Water Absorption ^A	ASTM D-471	%	+8,-2	+8,-2
Water Vapor Permeability, max	ASTM E-96	Perm mils	2.0	2.0
Chronic Toxicity Screening	EPA/821-R-02-013/ ASTM E-729	Method 1000.0	passes /passes	Passes/ passes

^ASpecimens to be prepared from coating rubber compound, vulcanized in a similar method to the reinforced products.

Notes:

1. Certified Firestone Reinforced EPDM Geomembrane production materials are special order items requiring a minimum of two weeks as production lead-time.
2. Following all testing conditions outlined in the standards document, Firestone Reinforced EPDM Geomembrane meets or exceeds the minimum requirements set forth by ASTM D-7465 for Type II scrim-reinforced EPDM Geomembranes.
3. For coating over the scrim measurements, follow appendix in ASTM D-7465.



Firestone EPDM Geomembrane (Platinum)

Firestone Item Number:

W56GM91010: 3.05 m (10.0') x 30.48 m (100.0')
2.28 mm (0.090")

DESCRIPTION:

Firestone EPDM Geomembrane Platinum is a 2.28 mm (0.090") synthetic rubber geomembrane designed for long-term waterproofing performance.

PREPARATION OF SUBSTRATES:

1. Substrates must be clean, dry, smooth, and free of sharp edges, fines, loose or foreign materials, oil, grease, and other materials that may damage the geomembrane.
2. All roughened surfaces that can damage the geomembrane shall be repaired as specified to offer a smooth substrate.
3. All substrates voids greater than 6.3 mm (0.25") wide shall be properly filled with an acceptable fill material.

METHOD OF APPLICATION:

Firestone EPDM Geomembrane Platinum must be installed in accordance with current Firestone Specialty Products specifications and details.

STORAGE:

1. Store away from sources of punctures, and physical damage.
2. Store away from ignition sources as geomembrane will burn when exposed to open flame.

This sheet is meant only to highlight Firestone's products and specifications. Information is subject to change without notice. Firestone takes responsibility for furnishing quality materials, which meet Firestone's published product specification. As neither Firestone itself nor its representatives practice design, Firestone offers no opinion on and expressly disclaims any responsibility for the soundness of any project on which its products may be applied. If questions arise as to the soundness of a project, or its ability to support a planned installation properly, the Owner should obtain opinions of competent design engineers before proceeding. Firestone accepts no liability for any failure or for resultant damages, and no Firestone Representative is authorized to vary this disclaimer.



PRODUCT DATA

PACKAGING:

<u>Thickness</u>	<u>Widths</u>	<u>Lengths</u>	<u>Weight</u>
2.28 mm (0.090")	3.05 m (10.0')	15.24 m (50.0')*	2.7 kg/m ² (0.56 lb/ft ²)
2.28 mm (0.090")	3.05 m (10.0')	30.48 m (100.0')	2.7 kg/m ² (0.56 lb/ft ²)

*Packaged 2 panels per roll.

PRECAUTIONARY DATA:

1. Take care when moving, transporting, handling, etc. to avoid sources of punctures and physical damage.
2. Isolate waste products, such as petroleum products, greases, oils (mineral and vegetable) and animal fats from the geomembrane. Contact Firestone Specialty Products for specific recommendations.
3. Refer to Material Safety Data Sheets (MSDS) for safety information.

LEED INFORMATION:

Post Consumer Recycled Content: 0%
Post Industrial Recycled Content: 0%
Manufacturing Location: Prescott, AR

Firestone Specialty Products
250 West 96th Street, Indianapolis, Indiana 46260
Specialty Products (800) 428-4442
Internet Address: <http://www.firestonesp.com>

Firestone EPDM Geomembrane (Platinum)

PHYSICAL PROPERTIES

<u>Property</u>	<u>Test Method</u>	<u>Minimum ASTM Performance</u>	<u>Typical Values</u>
Tensile Strength	ASTM D-412 (Die C)	9.0 MPa (1305 psi)	9.8 MPa (1425 psi)
Factory Seam Strength	ASTM D-816 (Modified)	9 kN/m (51 lbf/in) or Sheet Failure	Sheet Failure
Elongation	ASTM D-412 (Die C)	300%	450%
Puncture Resistance	ASTM D-120	NA	.085 kN (19.2 lbf)
Tear Resistance	ASTM D-624 (Die C)	26.3 kN/m (150 lbf/in)	35.0 kN/m (200 lbf/in)
Shore A Durometer	ASTM D-2240	65 +/- 10	62
Ozone Resistance	ASTM D-1149	No Cracks	No Cracks
Heating Aging	ASTM D-573		
Tensile Strength	ASTM D-412 (Die C)	8.3 MPa (1205 psi)	9.7 MPa (1415 psi)
Elongation	ASTM D-412 (Die C)	200%	290%
Tear Resistance	ASTM D-624 (Die C)	21.9 kN/m (125 lbf/in)	31.5 kN/m (180 lbf/in)
Linear Dimensional Change, max, %	ASTM D-1204	+/- 1.0	<1.0
Brittleness Temp.	ASTM D-746	-45° C (-49° F)	-53° C (-63° F)
Water Absorption	ASTM D-471	+8, -2	+1.73
Water Vapor Permeability, max.	ASTM E-96	2.0	1.93
Tolerance on Nominal Thickness, %	ASTM D-412	+/- 10	+/- 10
Chronic Toxicity Screening	EPA/821-R-02-013 ASTM E-729 Method 1000.0	Passes	Passes

Notes:

1. Firestone EPDM Geomembrane Platinum production materials are special order items requiring a minimum of two weeks as production lead-time
2. Following all testing conditions outlined in the standards document, Firestone EPDM Geomembrane Platinum meets or exceeds the minimum requirements set forth by ASTM D-4637 for Type I non-reinforced EPDM single-ply membranes.



TPO Geomembrane

Firestone Item Number

- W56TPMPL99:**
(Patina Green) 3.04 m x 60.96 m (10' x 200') rolls
- W56TPM3L99G:**
(White) 3.04 m x 60.96 m (10' x 200') rolls
- W56TPMTL99G:**
(Tan) 3.04 m x 60.96 m (10' x 200') rolls

DESCRIPTION:

Firestone TPO Geomembrane is a flexible thermoplastic polyolefin membrane that is produced with polyester weft inserted reinforcement. This heat weldable TPO membrane is suitable for a variety of exposed geomembrane applications. It is available in a 1.5 mm (60 mil) thickness and in a 3.05 m (10' width). The membrane is available in patina green, white and tan

PREPARATION OF SUBSTRATES:

- Substrates must be dry, smooth, free of sharp edges, loose or foreign materials, oil, grease, and other materials which may damage the geomembrane.
- All rough surfaces or voids which could damage the geomembrane shall be repaired prior to installing the geomembrane, as specified.

METHOD OF APPLICATION:

- Firestone TPO Geomembrane is installed as a continuous geosynthetic layer. Rolls are overlapped (Side Laps and End Laps) prior to the heat welding of the seam areas.
- All cut scrim areas must be sealed with Firestone extrusion weld bead.
- Install Firestone TPO Geomembrane in accordance with current Firestone Specialty Products specifications and details.

This sheet is meant only to highlight Firestone's products and specifications. Information is subject to change without notice. Firestone takes responsibility for furnishing quality materials, which meet Firestone's published product specification. As neither Firestone itself nor its representatives practice design, Firestone offers no opinion on and expressly disclaims any responsibility for the soundness of any project on which its products may be applied. If questions arise as to the soundness of a project, or its ability to support a planned installation properly, the Owner should obtain opinions of competent design engineers before proceeding. Firestone accepts no liability for any failure or for resultant damages, and no Firestone Representative is authorized to vary this disclaimer.



PRODUCT DATA

Gauge	Width	Length
1.5 mm (0.060")	3.05 m (10.0')	60.1 m (200')

STORAGE:

- Store away from sources of punctures and physical damage.
- Store away from ignition sources as geomembrane will burn when exposed to open flame.

PRECAUTIONARY DATA:

- Take care when moving, transporting, handling, etc. to avoid sources of punctures and physical damage.
- Isolate waste products, such as petroleum products, greases, oils (mineral and vegetable) and animal fats from the geomembrane. Contact Firestone Specialty Products for specific recommendations regarding chemical compatibility.
- Refer to Material Safety Data Sheets (MSDS) for safety information.

LEED INFORMATION:

Post Consumer Recycled Content: 0%
 Post Industrial Recycled Content: 15%
 Solar Reflective Index
 Manufacturing Locations:

Wellford, SC
 Las Vegas, NV
 Tuscumbia, AL



Subject to the conditions of Approval when installed as described in the current edition of the FM Approval Guide



Cool Roof Rating Council Product
 Identification Number: 0608-0008
 (For White Membrane)



Membrane for Roofing Systems
 As to an External Fire Exposure Only
 61P2
 See UL Directory of Products
 Certified for Canada
 And UL Roofing Materials
 And Systems Directory
 R9516

Firestone Specialty Products

250 West 96th Street, Indianapolis, Indiana 46260
 Specialty Products (800) 428-4442
 Internet Address: <http://www.firestonesp.com>

Firestone TPO Geomembrane

PHYSICAL PROPERTIES PER ASTM D 6878

<u>Physical Property</u>	<u>Test Method</u>	<u>Nominal</u>
<u>UNAGED PROPERTIES:</u>		
Thickness, min. in (mm) Sheet Overall	ASTM D 751	0.060" (1.52 mm) +/- 10%
Thickness Over Scrim: 1.5 mm (0.060") Membrane	ASTM D 4637 (optical method)	0.609 mm (0.024")
Breaking Strength	ASTM D 751	1560 N (350 lbf)
Elongation at Reinforcement break	ASTM D 751	30%
Tearing Strength	ASTM D 751 20.32 cm x 20.32 cm (8" x 8") specimen	382 N (86 lbf)
Brittleness Point	ASTM D 2137	-46°C (-50°F)
Linear Dimension Change	ASTM D 1204 6 hrs @ 70° C (158° F)	±0.15%
Ozone Resistance	ASTM D 1149	PASS (no cracks)
Factory Seam Strength	ASTM D751	289 N (65 lbf)
Puncture Resistance	FTM 101C Method 2031	1174 N (265 lbf)
<u>HEAT AGED PROPERTIES:</u>		
Breaking Strength	ASTM D 751	1628 N (366 lbf)*
Elongation at Reinforcement break	ASTM D 751	30%*
Tearing Strength	ASTM D 751 20.32 cm x 20.32 cm (8" x 8") specimen	382 N (86 lbf)*
Weight Change (Membrane)	ASTM D 471	1% (change in mass)
*ASTM D 6878 requires retained values of 90% or original breaking strength and elongation and 60% for tearing strength.		
<u>AGED PROPERTIES:</u>		
Ozone Resistance	ASTM D 1149	PASS (No cracks)
Weather resistance (Retained Values)	ASTM G 151/ G 154	
Visual Inspection		PASS
Breaking Strength, % min.		90 % retained
Elongation at Reinforcement Break	ASTM D 751	90 % retained
Resistance to Xenon-Arc Weathering	ASTM G 151/ G 155	PASS