

## UltraPly™ TPO SA

### Item Description

### Item Number

.060" x 5' x 100' – White	W56TSA3660
.060" x 10' x 100' – White	W56TSA3699
.060" x 5' x 100' – Tan	W56TSAT660
.060" x 10' x 100' – Tan	W56TSAT699
.060" x 5' x 100' – Gray	W56TSAG660
.060" x 10' x 100' - Gray	W56TSAG699



### Product Information

#### Description:

UltraPly TPO SA with Secure Bond™ Technology is a heat weldable, flexible thermoplastic polyolefin (TPO) with a factory applied pressure sensitive adhesive. Designed to be the next generation in fully adhered roof system application, Firestone's Secure Bond Technology ensures uniform adhesion across the entire membrane, creating the most powerful bond possible. This advanced technology not only significantly improves installation speed over traditional fully adhered application, but also widens the weather window with the ability to install down to 20 °F (-7 °C). With no VOC's UltraPly TPO SA with Secure Bond Technology is the perfect solution for all your roofing needs.

UltraPly TPO SA membrane with Secure Bond technology meets or exceeds all the requirements for ASTM D6878-03. Each membrane is reinforced with a 9 x 9 1,000 denier polyester weft-inserted fabric.

UltraPly TPO SA membrane is self-adhering. No primers or adhesives needed, thus eliminating Volatile Organic Compounds (VOCs).

#### Membrane Preparation:

1. Substrates must be clean, dry and free of foreign material such as grease and any debris which could inhibit adhesion. This may require cleaning with a broom or blower.
2. Insulation must be fastened per current Firestone technical specifications to provide a proper substrate.
3. Install UltraPly TPO SA and RubberGard EPDM SA membrane only when ambient and substrate temperatures are min. 20 °F (-7 °C) and rising. Do not install UltraPly TPO SA and RubberGard EPDM SA below this minimum temperature.
4. Unroll and position the membrane over the substrate to achieve the desired alignment and overlaps. For an even better alignment and adhesion, allow membrane to relax 30 minutes before positioning and adhering. **NOTE: once membrane has relaxed, follow Method A (Steps 5-10) or Method B (Steps 5-9) to attach the membrane to the approved substrate.**

#### Method of Application:

##### Method A - Membrane Application (Steps 5 – 10):

1. Fold back one side or ½ of the membrane to expose the release liner without disturbing the original position.
2. Remove the release liner from that section of membrane starting at one end, removing at a 45° angle in one continuous motion.
3. After the release liner has been removed, mate or roll the membrane onto the substrate starting in the middle of the sheet and proceeding to the outer edges. This minimizes potential membrane wrinkles.
4. Immediately broom the installed membrane starting in the middle of the sheet towards the outer edges.
5. Roll the installed membrane with a weighted roller weighing 5 lb per lineal inch to ensure full contact with the substrate.
6. After rolling is complete, fold back the remaining half of membrane, repeat the steps outlined above, and then complete the membrane seams.

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### Method B - Membrane Application For use on ISOGARD HD and RESISTA (Steps 5 – 9):

5. Once the membrane has relaxed in place, and the seam positions are aligned, carefully fold back the leading edge of the membrane at one end to expose the release liner without disturbing the original position of the membrane.
6. Starting from the center split of the exposed release liner, remove the liner on both sides of the split at a 45 degree angle back beyond the membrane edge, making sure to have pulled enough of the release liner to hold below the membrane. Remove approximately 5' (minimum) of release liner from one end of the sheet and adhere it to the substrate. The release liner removed should be enough to extend out beyond the edge of the membrane when pulled out perpendicular in the cross direction.
7. Keeping the membrane flat and secured, and seam overlap aligned, continue removing the release liner at a 45 degree angle along the length of the sheet (up to 100'). The 2 halves of release liner can be pulled out at the same time by two people or one side at a time by one person. Keep the release liner as close to roof surface as possible during release liner removal. Pulling the release liner at a higher angle can cause the sheet to move and may trap air.
8. To initiate adhesion, use a stiff bristle broom and positive downward pressure to broom in the installed membrane. Begin brooming in the middle of the membrane working your way toward one end. Repeat the process toward the other end. Push the broom in the direction of the short dimension of the sheet to avoid creating wrinkles in the sheet. **Do not roll membrane in place with a weighted roller.**
9. After the membrane has been broomed and secured into place, complete the membrane seams, Make sure the seam overlap with the next sheet is a minimum of 2" and is clean of all dirt and contaminants and there is no moisture present on the mating surfaces. Position a new membrane panel in place and repeat steps outlined above.

### Seaming:

1. Follow all current Firestone technical specifications for heat welding TPO membrane.
2. Side Laps – All seams (side laps) must be heat-welded. Each panel has a 2" area that is uncoated along one side of the membrane. Overlap adjoining sheets and heat weld the 2" uncoated area to create a minimum 1½" welded monolithic seam.
3. End Laps – Because the pressure sensitive adhesive extends the entire length of the roll, all adjoining rolls must be butted together (*not lapped*), and stripped in. Strip in all butted end laps by centering 6" wide strip of UltraPly TPO membrane and heat welding the membrane strip along all edges. Apply UltraPly TPO Cut Edge Sealant to all exposed scrim areas of the membrane strip.

### Storage:

- Warehouse membrane in a clean dry location.
- Membrane stored on jobsite must be kept dry.
- Material must be a minimum of 20 °F (-7 °C) prior to installation.
- Store away from sources of punctures and physical damage.
- Make certain the structural decking will support the loads incurred by material when stored on rooftop. The deck load limitations should be specified by the project designer.
- Store away from ignition sources.

### Shelf Life:

18 Months when stored between 60 °F (16 °C) and 80 °F (27 °C) out of direct sunlight

### Precautions:

- Take care when moving, transporting and handling to avoid sources of punctures and physical damage.
- Removal of the plastic release liner from the adhesive backing may create a static electric charge; care should be used when removing and handling the release liner.
- Refer to Safety Data Sheets (SDS) for additional safety information.

# TECHNICAL INFORMATION SHEET



## UltraPly™ TPO SA

### LEED® Information:

Post Consumer Recycled Content: 0%  
 Post Industrial Recycled Content: 3-5%  
 Manufacturing Location: Tuscumbia, AL  
**NOTE:** LEED® is a registered trademark of the U.S. Green Building Council.



### Typical Properties

Property	Test Method	Units	Performance Minimum	Typical Performance 60 mil
Overall Thickness	D 751	in (mm)	0.039 (0.54)	0.060 (1.15)±10
Coating over Scrim	D 7635	in (mm)	0.015 (0.39)	0.021 (0.54)
Breaking Strength	D 751 Grab Method	lb (N)	220 (979)	390 (1,735)
Elongation at Reinforcement Break	D 751 Grab Method	%	15	30
Tearing Strength	D 751	lb (N)	55 (245)	156 (694)
Brittleness Point	D 2137	°F ( °C)	-40 (-40)	-40 °F (-40 °C)
Ozone Resistance, No cracks	D 1149	---	Pass	Pass
Properties After Heat Aging (Retained Values) (ASTM D 573 670 h at 240 °F (116 °C)):				
Retention of Breaking Strength	D 751 Grab	%	90	>90
Retention of Elongation at Break	Method D 751 Grab	%	90	>90
Retention of Tearing Strength	Method D 751	%	60	>60
Weight of Change	D 1204, 6h at 158 °F (70 °C)	%	±1 max	<0.02
Linear Dimension Change	D 1204	%	<1	<1
Water Absorption	D 471	%	±3, maximum	<1.2
Weather Resistance, 80 °C Black Panel, no cracking, crazing when wrapped around a 3" mandrel and inspected at 7x magnification	G 155	kJ/m <sup>2</sup>	10,080 minimum	>20,160
Puncture Resistance	FTM 101C, Method 2031	lbf (N)	---	300 (1,334)
Dynamic Puncture Resistance MD	D 5635	---	Pass (20 J)	Pass (40 J)
Dynamic Puncture Resistance CD	D 5635	---	Pass (35 J)	Pass (50 J)
Static Puncture Resistance	D 5602	---	Pass (25 kg)	Pass (25 kg)
Air Permeance (Material)	E 2178*	ft <sup>3</sup> /ft <sup>2</sup> (L/(s·m <sup>2</sup> ))	<0.004 (0.02)	Pass

\*The ASTM 2178 values listed are for the air permeance of the UltraPly TPO SA membrane component only. For use of the product as a component in an air barrier assembly, please consult your Firestone Building Systems Advisor (BSA), Code Agency or Authority having Jurisdiction (AHJ) for the acceptable air barrier assembly details.

## UltraPly™ TPO SA

### Typical Properties- Pressure Sensitive Adhesives:

Property	Test Method	Units	Performance Minimum	Typical Values
Color	---	---	---	clear
Nominal Thickness	ASTM E 408-71	in (mm)	N/A	0.008 (0.18mm)
Weight	---	lbf (kg/m <sup>2</sup> )	---	0.04 (.020)
Permeability	ASTM E 96	Perms	N/A	0.6
Specific Gravity	ASTM D 71	---	N/A	0.93

### Substrates

Acceptable Substrates	Primer Req'd	Application Method	Acceptable Application Temperatures	Special Application Considerations / Notes
ISOGARD™ HD	No	B	20 - 120 °F (-7 - 49 °C)	
RESISTA™	No	B	20 - 120 °F (-7 - 49 °C)	
Poured in Place or plank Gypsum	No	A	20 - 120 °F (-7 - 49 °C)	
Structural Concrete	No	A	20 - 120 °F (-7 - 49 °C)	must be clean, dry and properly cured prior to application
Lightweight Concrete	No	A	20 - 120 °F (-7 - 49 °C)	use on clean, dry and properly cured cellular lightweight concrete only, not acceptable with lightweight aggregate concrete
Poly ISO 95+ G/L	No	A	20 - 120 °F (-7 - 49 °C)	
DensDeck*	No	A	20 - 120 °F (-7 - 49 °C)	
DensDeck Prime	No	A	20 - 120 °F (-7 - 49 °C)	
Securock**	No	A	20 - 120 °F (-7 - 49 °C)	
5/8" Type X Gypsum	No	A	20 - 120 °F (-7 - 49 °C)	
DexCell***	No	A	20 - 120 °F (-7 - 49 °C)	
Plywood	No	A	20 - 120 °F (-7 - 49 °C)	check local code for acceptance of direct application
OSB Board	No	A	20 - 120 °F (-7 - 49 °C)	check local code for acceptance of direct application
CMU/Masonry Block	No	A	20 - 120 °F (-7 - 49 °C)	must be clean, dry and properly cured prior to application

\*DensDeck is a registered trademark of the G-P Gypsum Corporation

\*\*Securock is a registered trademark of the USG Corporation

\*\*\*DexCell is a registered trademark of the National Gypsum Company

## UltraPly™ TPO SA

Reflectivity	Initial	Weathered	#
Solar Reflectance	0.74	0.59	---
Thermal Emittance	0.84	0.84	---
SRI	90	69	---
CRRC Rated Product ID	---	---	0033
CRRC Licensed Manufacturer ID	---	---	0608
Classification	Production Line	---	---

Compliance	Test Method	White	Tan	Gray
Solar Reflectance	ASTM E903	0.81	0.63	0.37
Thermal Emittance	ASTM E408	0.95	0.95	0.95
Solar Reflectance Index (SRI)	ASTM E1980	102	77	43

Energy Star®	White	Tan	Gray
Initial Solar Reflectance	0.79	0.60	---
Aged Solar Reflectance (3 years)	0.58	---	---
Cleaned prior to aged test?	No	---	---
Initial Emittance	0.84	---	---



\*ENERGY STAR is only valid in the United States

Please contact Quality Building Solutions Technical Department at 1-800-428-4511 for further information.

*This sheet is meant to highlight Firestone products and specifications and is subject to change without notice. Firestone takes responsibility for furnishing quality materials which meet published Firestone product specifications. Neither Firestone nor its representatives practice architecture. Firestone offers no opinion on and expressly disclaims any responsibility for the soundness of any structure. Firestone accepts no liability for structural failure or resultant damages. Consult a competent structural engineer prior to installation if the structural soundness or structural ability to properly support a planned installation is in question. No Firestone representative is authorized to vary this disclaimer.*