



**1. Product Name**

GenFlex TPO Single-Ply Roof Membranes

**2. Manufacturer**

GenFlex Roofing Systems  
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**3. Product Description**

**BASIC USE**

GenFlex TPO Roofing Membranes consist of a flexible sheet made from a thermoplastic polyolefin (TPO) compound and is reinforced with a polyester scrim or fabric. The TPO membrane is intended for use as a single-ply roofing membrane on commercial, industrial and institutional buildings.

Additional system components may include insulation, seam and cover tapes, primers, seam and bonding adhesives, sealants, membrane flashings and other related roof accessories.

GenFlex requires all components of the roofing assembly to be products supplied by GenFlex Roofing Systems or approved by GenFlex.

GenFlex TPO roofing membranes can be installed in mechanically attached, fully adhered or ballasted systems in either new or reroof applications.

**COMPOSITION & MATERIALS**

TPO is a thermoplastic membrane made from polyolefin (TPO) intended for use in single-ply roofing membranes exposed to the weather.

**COLOR** White, Grey or Tan

**SIZES**

GenFlex TPO is available in factory manufactured rolls in widths up to 12' (3.7 m) and lengths up to 100' (30.5 m). GenFlex Peel & Stick™ TPO (HW) is available in 6.25' (1.9 m) and 10' (3.0 m) widths and a length of 100' (30.5 m).

Peel & Stick™ TPO (SA) is available in a width of 6.25' (1.9 m) and lengths of 50' (15.2 m) or 100' (30.5 m). GenFlex TPO membranes are available 45 mil (1.14 mm), 60 mil (1.52 mm) and 80 mil (2.03 mm) thicknesses.

**WEIGHTS (TYPICAL)**

45 mil membrane – 0.21 lb/ft² (1.03 kg/m²)  
 60 mil membrane – 0.29 lb/ft² (1.41 kg/m²)  
 80 mil membrane – 0.37 lb/ft² (1.81 kg/m²)

**INSTALLATION SYSTEMS**

Mechanically Attached Systems

Offer exceptional performance in high wind conditions at a very low installed cost. Our complete line of fastening accessories assures the right attachment for the right condition.

Mechanically Attached Dual-Weld

Offers even higher wind-uplift performance than single-weld seams, which create unequal, or asymmetrical, loading in the attachment area. GenFlex's patented Dual-Weld technology balances the wind load throughout the seam area, eliminating the stress around the fasteners and along the seams. By directly transferring the load to the in-seam fastening system, performance and uplift ratings improve.

Fully Adhered System

Ideal for roofs with unusual or odd-shaped contours, where mechanical penetration of the membrane is not desirable, yet exceptional wind performance is needed. The back of the membrane and the substrate are coated with GenFlex Bonding Adhesive, allowed to dry, carefully rolled back into position and broomed into place.

Peel & Stick™ TPO Fully Adhered System

Suitable for new construction or reroofing. Engineered with pre-applied adhesive, Peel & Stick TPO (HW) and (SA) systems can cut labor costs and installation time by as much as 50%. With Peel & Stick products, you get higher performance, not just of the TPO membrane but also flashings, pipe boots, seam tape and cover tape that all go down quickly, cleanly, easily and accurately.

Ballasted System

Perfect when a job needs to be done fast and inexpensively. Insulation and membrane are loose-laid with the membrane fastened only at the perimeter. Recommended ballast is ASTM #4 ballast, i.e. smooth, water-worn rocks. Substrate must be capable of supporting the dead load of the system.

**LIMITATIONS**

- GenFlex TPO may be installed in environmentally acceptable conditions as specified in GenFlex current technical specifications.
- Only compatible materials furnished or approved by GenFlex may be used.
- The system may only be installed over GenFlex approved substrates.
- The system must be installed in accordance with GenFlex's current TPO Technical Specifications.
- Consult GenFlex Roofing Systems for membrane compatibility with foreign chemicals.

**4. Technical Data**

**APPLICABLE STANDARDS**

American Society for Testing & Materials:

- ASTM C 1371 – *Emissivity*
- ASTM C 1549 – *Reflectivity*
- ASTM D 471 – *Rubber Property – Effect of Liquid*
- ASTM D 573 – *Deterioration in Air Oven*
- ASTM D 751 – *Test Methods for cocked fabrics*
- ASTM D1149 – *Rubber Deterioration–Surface Ozone Cracking in a Chamber*
- ASTM D 1204 – *Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature*
- ASTM D 1980-01 – *Solar Reflectance Index*
- ASTM D 2137 Method B – *Brittleness Point*
- ASTM D 5602 – *Static Puncture Resistance*
- ASTM D 5635 – *Dynamic Puncture Resistance*
- ASTM D 6878 Annex A1 – *Thickness Over Scrim*
- ASTM E 96 – *Water Vapor Transmission of Materials*
- ASTM FTM 101 Method 2031 – *Puncture Resistance*





GenFlex Roofing Systems

TABLE 1 PHYSICAL PROPERTIES OF GENFLEX TPO MEMBRANE		
Property	Test method	GenFlex TPO Typical Value
Thickness Over Scrim	ASTM D 6878,	
45 mil (1.14 mm) Membrane	Annex A1	15 mil (0.38 mm)
60 mil (1.52 mm) Membrane		21 mil (0.53 mm)
80 mil (2.03 mm) Membrane		30 mil (0.76 mm)
Breaking Strength, Min	ASTM D 751	330 lbf (1500 N)
Elongation at Reinforcement Break, Min	ASTM D 751	30%
Tearing Strength, Min	ASTM D 751	156 lbf (964 N)
Brittleness Point, Max	ASTM D 2137 Method B	-49 °F (-45 °C)
Ozone Resistance, No Cracks	ASTM D 1149	Pass
Properties After Heat Aging (Retained Values)	ASTM D 573	
Breaking Strength, Min	ASTM D 751	90%
Elongation at Reinforcement Break, Min	ASTM D 751	90%
Tearing Strength, Min	ASTM D 751	60%
Weight Change (Mass), Max	ASTM D 751	-0.02%
Linear Dimensional Change, Max	ASTM D 1204	-0.01%
Water Absorption, Max, Mass	ASTM D 471	+1.2%
Factory Seam Strength	ASTM D 751	75 lbf (330 N)
Weathering Resistance – Visual Inspection	ASTM G 155	Pass
Weathering Resistance – Breaking Strength, Min	ASTM G 155	90%
Weathering Resistance – Elongation at Reinforcement Break, Min	ASTM G 155	90%
Water Vapor Permeance – Perm	ASTM E 96	0.0122
Static Puncture Resistance	ASTM D 5602	33 lb (15 kg)
Dynamic Puncture Resistance	ASTM D 5635	20 J
Puncture Resistance	ASTM FTM 101C Method 2031	337 lbf (1500 N)
Reflectivity	ASTM C 1549	
White		77%
Grey		47%
Tan		65%
Emissivity	ASTM C 1371	
White		0.87
Grey		0.87
Tan		0.87
Solar Reflectance Index	ASTM D 1980–	
White	01	95
Grey		53
Tan		78
Recycled Content – Post Consumer	—	0%
Recycled Content – Post Industrial	—	3 to 5%
Manufacturing Location	—	Tuscumbia, AL

- ASTM G 155 – *Xeon Arc Light Apparatus for Exposure of Non-Metallic Materials*

APPROVALS

Status of code approvals varies with roof construction used. The following and other agencies will provide approvals on GenFlex TPO systems. See agency publications and manufacturer’s current literature for up-to-date approvals.

- Building Officials and Code Administrators International (BOCA)
- Factory Mutual (FM)
- Underwriters Laboratories (UL)
- International Conference of Building Officials (ICBO)
- Southern Building Code Congress International (SBCCI)
- Metropolitan Dade County, Florida

PHYSICAL/CHEMICAL PROPERTIES

Refer to Table 1 for test properties.

5. Installation

PREPARATORY WORK

The dead load capacity of the deck and structure must be sufficient to support the load of the stored roofing materials and installed roofing system. The deck must be designed and constructed to provide removal of all water within forty-eight (48) hours after a rainfall. Substrate must be smooth, level and clean. Loose gravel on existing roofs must be removed.

INSULATION INSTALLATION

Insulation securement must be to current Genflex Roofing Systems’ Technical Specifications.

MEMBRANE INSTALLATION

Unroll and position the TPO membrane over the approved substrate. Overlap the membrane panels so that the top sheet edge is in alignment with the pre-marked lines on the bottom sheet. Be certain the seaming area of the membrane is laying flat without wrinkles and positioned as required to achieve the desired seam width. Allow the membrane to relax for a minimum of thirty (30) minutes prior to hot air welding the laps or seams.

Set up the automatic welder in accordance with the start-up settings listed in GenFlex’s Welding Equipment Guide. Test welds should be performed



on scrap material at the beginning of every day and again following each break in welding in excess of thirty (30) minutes.

It is recommended that all laps be cleaned using GenFlex Cleaner and cotton rags prior to hot air welding. GenFlex TPO T-Joint Covers are required over all intersections where multiple layers of 60 or 80 mil (1.52 or 2.03 mm) membrane intersect. Please contact GenFlex Technical Services for additional information.

### SEAM TAPE SPLICES

Refer to GenFlex's current application instructions for splicing with GenFlex TPO 3" Seam Tape.

**IMPORTANT:** Ensure both mating surfaces are free of dirt and debris and no moisture is present on the splicing surfaces.

Position the top membrane to overlap the bottom membrane by a minimum of 3" (76 mm). Mark the bottom membrane with a pen 1/2" (13 mm) from the edge of the top membrane to allow for 1/4" (6.4 mm) of the tape to be exposed. Without creasing the membrane, fold the top membrane back 12" to 15" (305 mm to 381 mm) in order to apply Clear Primer and tape.

Thoroughly mix GenFlex Clear Primer. **DO NOT THIN!** A minimum of two (2) minutes of vigorous hand mixing with a wooden paint stirrer or its equivalent is required. All sources of ignition should be eliminated; adequate ventilation should exist.

Clean all surfaces with a clean cotton rag, removing excess contamination prior to application of the primer.

With a scrub pad and handle, apply firm pressure, and use continuous back and forth strokes to apply GenFlex Primer to the membrane along the bonding area until no streaks or puddling occurs.

Allow GenFlex Clear Primer to dry until slightly tacky to a dry finger touch.

Unroll seam tape along the marks on the bottom membrane for the entire length of the seam. **NOTE: DO NOT REMOVE THE RELEASE PAPER FROM THE SEAM TAPE AT THIS TIME.**

With the release paper still on the tape, hand-roll the entire strip of seam tape, using a silicone coated or rubber roller,

ensuring good contact between the membrane and seam tape.

Allow the top membrane to fall freely onto the bottom membrane. Pull the release paper from the tape away from the seam at a 45° angle, ensuring contact first by brushing your hand across the top membrane at a right angle.

Hand-roll the entire splice, first at a right angle toward the outer edge and then along the length of the splice. Use a silicone coated or rubber roller to ensure good contact between the membrane and the seam tape.

### FLASHING AND ATTACHMENTS

Attach the membrane at roof perimeter, curb flashing, skylight, expansion joint and roof penetration using standard GenFlex TPO Details. GenFlex TPO walkway pads are required at all high traffic points, such as rooftop units, hatches, access doors, and rooftop ladders.

### METHODS OF ATTACHMENT

GenFlex TPO may be Mechanically Attached, Fully Adhered or Ballasted. Mechanically Attached Systems must be attached with GenFlex fastener accessories and GenFlex Fasteners along the entire length of each seam. Additional attachment is required at perimeters and corners.

### 6. Availability & Cost

#### AVAILABILITY

GenFlex products are made available nationwide through a network of GenFlex Distributors.

#### COST

For cost information, please contact the nearest GenFlex Distributor or GenFlex Roofing Systems.

### 7. Warranty

- Projects requiring roofing system warranties must be installed by a GenFlex licensed contractor.
- GenFlex projects must be inspected by a GenFlex representative to be eligible for a GenFlex roofing system warranty.
- GenFlex offers limited membrane only warranties, which are available for

residential and commercial projects. These warranties may be obtained by any installer, and an inspection by a GenFlex representative is not done.

- Sample warranties are available from the manufacturer upon request.
- Components must be supplied by or approved by GenFlex.
- Warranty covers GenFlex-supplied materials only.
- Limitations in Part 3, Product Description, are required for warranty.

### 8. Maintenance

Periodic inspection of the roof system and cleaning of drains is recommended to allow proper water run-off, avoiding overloading roof with ponded water. Regular cleaning must be done in areas where contaminants potentially harmful to roof system may accumulate, e.g., oil, grease, Freon, acids, solvents, etc. Inform all tradespeople servicing the roof equipment that it is a single-ply roof and that they must proceed accordingly. Contact GenFlex Roofing Systems in writing for approval before making alterations on, adjacent to, or through the roof system.

### 9. Technical Services

GenFlex technical personnel are available to answer telephone questions or approve details. Refer to manufacturer's contact information referenced in section 2.0 for contact information. GenFlex Technical Specifications are available at [www.genflex.com](http://www.genflex.com).

### 10. Filing Systems

- Architects' First Source for Products
- Sweet's Catalog Files
- SweetSource
- Additional product information is available from the manufacturer.