



**1. Product Name**

GenFlex Heat-Welded Reinforced TPO Membrane

**2. Manufacturer**

GenFlex Roofing Systems

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**3. Product Description**

**BASIC USE**

GenFlex TPO is a reinforced thermoplastic polyolefin roofing membrane designed for use on commercial, industrial and institutional buildings. The TPO compound is resistant to a wide variety of common rooftop contaminants and is highly ozone resistant. Heat welded seams are strong and continuous.

Additional system components include insulation, plates, fasteners, adhesive, sealant, coated metal, flashing, and applicable roof-top accessories.

GenFlex requires components to be products of GenFlex Roofing Systems.

The GenFlex TPO system may be installed as a Ballasted, Mechanically Attached or Fully-Adhered design for either new or reroof applications.

**COMPOSITION & MATERIALS**

Fused, non-halogenated thermoplastic, scrim-reinforced polyolefin membrane, plasticizer-free ethylene propylene rubber (EPR) based. Two layers of TPO are fused with an inner layer of polyester reinforcement during the manufacturing process.

**COLOR**

CharCool Black, White or Grey

**SIZE**

GenFlex TPO is available in 74" (1.9 m), 8' (2.4m), 10' (3.0m) and 12.3' (3.6m) wide by 100' (30.5 m) long. GenFlex TPO is available in two thicknesses, 45 and 60 mil (1.1 and 1.5 mm).

**WEIGHT**

- 45 mil membrane – .21 psf (1.1 kg/m<sup>2</sup>)
- 60 mil membrane – .30 psf (1.6 kg/m<sup>2</sup>)
- Ballast – Minimum 10 psf (48.8 kg/m<sup>2</sup>); additional where required

**INSTALLATION SYSTEMS**

Ballasted System – Economical and fast installation on structures able to support system weight. Maximum slope is 2 in 12. Insulation and membrane are loose laid with membrane fastened at perimeter. Seams are adhered using GenFlex approved heat welding equipment. Approved ballast is smooth, rounded, washed river rock 3/4" – 1 1/2" (19 – 38 mm) in diameter.

Fully Adhered System – Installs quickly with no mechanical penetration of the membrane. Smooth appearing system is particularly useful where roof surface is visible. Seams are welded using GenFlex approved heat welding equipment.

Medhanically Attached Seam System – GenFlex plates are located on printed layout marks and fastened at a spacing determined by local building codes. Seams are welded using GenFlex approved heat-welding equipment.

**LIMITATIONS**

See Part 7. Warranty, for additional warranty limitations.

- GenFlex TPO must be installed under environmental conditions specified by the manufacturer.
- The system may only be installed over GenFlex-approved substrates.
- Only compatible materials furnished or approved by GenFlex may be used.
- The system must be installed in accordance with the *GenFlex TPO Specifications Manual*.
- GenFlex TPO may only be installed by GenFlex authorized contractors.
- Consult GenFlex Roofing Systems for membrane compatibility with acids, animal fats, grease, chemicals, solvents and oils.

**4. Technical Data**

**APPLICABLE STANDARDS**

American Society for Testing & Materials (ASTM)

- ASTM D570 – *Water Absorption of Plastics*

- ASTM 0471 - *Rubber Property Effect of Liquids*
- ASTM 0573 - *Deterioration in Air Oven*
- ASTM D638 – *Tensile Properties of Plastics*
- ASTM D751 – *Test Methods for cocked fabrics*
- ASTM D1149 – *Rubber Deterioration - Surface Ozone Cracking in a Chamber*
- ASTM D1204 – *Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature*
- ASTM D2136 – *Coated Fabrics - Low-Temperature Bend Test*
- ASTM D2565 – *Operating Xenon Arc-Type Light-Exposure Apparatus With and Without Water for Exposure of Plastics*
- ASTM D3045 – *Heat Aging of Plastics Without Load*
- ASTM E96 – *Water Vapor Transmission of Materials*
- ASTM G21 – *Determining Resistance of Synthetic Polymeric Materials to Fungi*
- ASTM G155 - *Xeon Arc Light Apparatus for Exposure of Non-Metallic Materials*
- ASTM G151 - *Exposing Non-Metallic Materials in Accelerated Test Devices that use Laboratory Light Sources*

**PHYSICAL/CHEMICAL PROPERTIES**

Refer to Table 1 for test properties.

**APPROVALS**

Status of approvals varies with roof construction used. The following and other agencies will provide approvals on GenFlex TPO systems. See agency publications and manufacturer 's literature:

- Building Officials and Code Administrators International (BOCA)
- Factory Mutual – 1-60, 1-90 wind uplift classifications
- International Conference of Building Officials (ICBO)
- Metropolitan Dade County, Florida
- Southern Building Code Congress International (SBCCI)
- Underwriters Laboratories Inc. – Classification, hourly rating

**5. Installation**

**PREPARATORY WORK**

The dead load capacity of the deck and supporting structure must be sufficient to support the load of the system. The deck

GenFlex Roofing Systems

must be designed and constructed to provide the removal of all water within 48 hours after a rainfall. Substrate must be smooth, level and clean. All gravel on existing roofs must be removed.

**INSULATION INSTALLATION**

Insulation fastening must be to GenFlex Roofing Systems specifications

**MEMBRANE INSTALLATION**

Position GenFlex TPO membrane over approved substrate. Position membrane so that the top sheet edge is in alignment with the premarked lines on the bottom sheet. Allow membrane to relax approximately 1/2 hour prior to any welding, attachment, or flashing.

**FLASHINGS & 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 roof top units, hatches, access doors, and roof top ladders.

**METHODS OF ATTACHMENT**

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

**6. Availability & Cost**

**AVAILABILITY**

Available nationwide through a network of distributors and agents, for sale to authorized GenFlex Roofing Systems applicators.

**COST**

For cost information, contact the nearest distributor or agent, or contact GenFlex.

**7. Warranty**

GenFlex projects must be inspected by a GenFlex representative to be eligible for a GenFlex warranty. Components must be supplied by GenFlex. Warranty covers GenFlex-supplied materials only. Meeting the limitations in Part 3 is a condition for warranty approval. Sample warranties are available upon request.

**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 the roof system may accumulate, e.g., oil, grease, freon, acids, solvents. 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 in-house to answer telephone questions or approve details by mail, fax or e-mail. The *GenFlex TPO Specifications Manual* is available upon request for specifiers and roofing contractors.

**10. Filing Systems**

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

TABLE 1 PHYSICAL PROPERTIES OF GENFLEX TPO MEMBRANE

Physical Properties	Specification	Typical Values
Thickness, nominal, ASTM D751	.045" (1.1 mm)	± 10%
	.060" (1.5 mm)	± 10%
Breaking Strength, min., ASTM D751	225 lpf (1.0kN)	330 lpf (1.5kN) Typ.
Elongation, Ultimate, %, ASTM D412	500	500
Tearing Strength, min., ASTM D751	55 lpf (245N)	156 lpf (694N)
Brittleness Point, max., ASTM D2137	-40°F (-40°C)	-49°F (-45°C)
Ozone Resistance, no cracks, ASTM D1149	Pass	Pass
Water absorption, max., ASTM D471	± 4%	± .1%
<b>Properties After Heat Aging ASTM D573</b>		
Breaking Strength, min., ASTM D751	225 lpf (1.0kN)	330 lpf (1.5kN) Typ.
Tearing Strength, min., ASTM D751	55 lpf (245N)	156 lpf (694N)
Linear Dimensional Change, ASTM D1204	± 2%	>1%
Weather resistance ASTM G26, G53	Pass	Pass
Emmaqua, ASTM E838	—	3,000,000 Langleys
<b>Properties after Weathering</b>		
Breaking Strength ASTM D751	225 lpf (1.0kN)	330 lpf (1.5kN) Typ.
PRFSE, unreinforced, ASTM D751	70	97

