



Building Products

April 2004

20 year Warranty Design Criteria for UltraPly TPO Membrane Mechanically Attached Systems

General Requirements

Slope Requirements

Minimum 1/8" slope recommended to promote positive drainage. Firestone recommends a minimum of 1/4" slope.

Acceptable Decks

Refer to the Firestone Technical Manual for minimum pullout requirements.

1. 22 gauge Steel or heavier
2. 3,000 psi Structural Concrete
3. Minimum 1/2" Plywood
4. Wood Planks with min. 1" Thickness
5. Contact Firestone for decks not listed.

Building Height Limitations

20 year systems are restricted to building heights of 120 feet or less (Maximum building height of 60 feet for TPO 120 Systems).

Membrane Requirements

Minimum .060" UltraPly TPO membrane. "T" joints must be sealed with Firestone "T" joint covers or unsupported flashing membrane.

Construction Type

New, Tear off or Retrofit provided all wet material is removed.

Use of Air Barrier

An air barrier is required for projects with large wall openings that are greater than 10% of the total wall area that can be left open in a storm. Criteria to be determined based upon Firestone's Review.

Edge Metal Systems

1. Firestone EdgeGard system.
2. Firestone Coated Metal as allowed by Firestone listed details.

Other Requirements

1. As-Built Projects not permitted. Firestone requires all projects to be reviewed prior to installation.
2. System installation per Firestone Technical Manual.
3. Welded Details only.
4. The Firestone Warranty does not cover products not supplied by Firestone Building Products.

Mechanically Attached Systems

Membrane Attachment	Perimeter Requirements
Firestone TPO 96 panels attached with 2 3/8" HD Seam Plates and HD fasteners at 12" o.c. Firestone TPO 120 panels attached with 2 3/8" HD Seam plates and HD fasteners at 12" o.c	55 mph warranty: Refer to Firestone Wind Design Guide for perimeter attachment. For warranty speeds in excess of 55 mph contact Firestone Technical Services

Insulation Attachment for Mechanically Attached Systems

ISO 95+ Insulation Thickness (Top Layer)	New Construction with No Air Barrier or recover over BUR, Modified, or Adhered Single-Ply systems	New Construction with Air Barrier or recover over existing Ballasted or Mechanically Attached Systems
1.0"-1.4"	5 per 4'x 8' Board	16 per 4'x 8' Board
1.5"-1.9"	5 per 4'x 8' Board	12 per 4'x 8' Board
2.0"-4.0"	5 per 4'x 8' Board	8 per 4'x 8' Board

This sheet is intended to be a summary guide for the installation of a roofing system that will qualify for a 20 year Firestone Red Shield Limited Warranty with a 55 mph wind speed coverage. Refer to the Firestone Technical Manual for specific requirements regarding installation of this roof system. Installation specifications are subject to change. Review Firestone website and Technical Bulletins for current updates.



Building Products

October 2003

20 year Warranty Design Criteria for UltraPly TPO Membrane Fully Adhered Systems

General Requirements

Slope Requirements

Minimum 1/8" slope recommended to promote positive drainage. Firestone recommends a minimum of 1/4" slope.

Acceptable Decks

Refer to the Firestone Technical Manual for minimum pullout requirements.

1. 22 gauge Steel or heavier
2. 3,000 psi Structural Concrete
3. Minimum 1/2" Plywood
4. Wood Planks with min. 1" Thickness
5. Fibrous Cement and Gypsum
6. Contact Firestone for decks not listed.

Building Height Limitations

20 year systems are restricted to building heights of 250 feet or less.

Membrane Requirements

Minimum .060" UltraPly TPO membrane. "T" joints must be sealed with Firestone UltraPly TPO "T" joint covers or unsupported flashing membrane.

Construction Type

New, Tear off or Retrofit provided all wet material is removed.

Use of Air Barrier

An air barrier is required for projects with large wall openings that are greater than 10% of the total wall area that can be left open in a storm. Criteria to be determined based upon Firestone's Review.

Edge Metal Systems

1. Firestone EdgeGard system.
2. Firestone Coated Metal as allowed by Firestone listed details.

Other Requirements

1. As-Built Projects not permitted. Firestone requires all projects to be reviewed prior to installation.
2. System installation per Firestone Technical Manual.
3. Welded Details only.
4. The Firestone Warranty does not cover products not supplied by Firestone Building Products.

Fully Adhered Systems	
Membrane Attachment	Perimeter Requirements
Firestone UltraPly Bonding Adhesive applied at the appropriate coverage rates as indicated in the Firestone Technical Manual	For warranty speeds in excess of 55 mph contact Firestone Technical Services.

Insulation Attachment for Fully Adhered Systems (Heavy Duty Fasteners With Insulation Plates Required)		
ISO 95+ Insulation Thickness (Top Layer)	New Construction with No Air Barrier or recover over BUR, Modified, or Adhered Single-Ply systems	New Construction with Air Barrier or recover over existing Ballasted or Mechanically Attached Systems
1.0"-1.45"	16 per 4'x 8' Board	16 per 4'x 8' Board
1.5"-1.95"	12 per 4'x 8' Board	12 per 4'x 8' Board
2.0"-4.0"	8 per 4'x 8' Board	8 per 4'x 8' Board

This sheet is intended to be a summary guide for the installation of a roofing system that will qualify for a 20 year Firestone Red Shield Limited Warranty with a 55 mph wind speed coverage. Refer to the Firestone Technical Manual for specific requirements regarding installation of this roof system. Installation specifications are subject to change. Review Firestone website and Technical Bulletins for current updates.