



Brad Hays



SBC Roof Series TPO Roof System

A fully adhered roof system is a type of roofing installation method where the roofing material is directly attached to the roof substrate using adhesives. This method is commonly used with single-ply membranes such as EPDM, TPO, or PVC. In fully adhered roof system, the membrane is glued to the insulation or roof deck, creating a strong and watertight seal. This method is preferred for its ability to resist wind uplift, and it can be a suitable choice for roofs with irregular shapes or complicated layouts. Additionally, adhered roof systems are known for their ease of installation and ability to accommodate thermal movement.

Components of a TPO roof system typically include:

- 1. TPO membrane:** A single-ply membrane made of thermoplastic olefin, available in various thicknesses and widths. TPO material is typically available in a range of thicknesses, commonly ranging from 45 mil to 80 mil (1 mil equals 0.001 inches). As for widths, TPO membranes are often available in standard widths such as 10 feet, 12 feet, and sometimes wider, depending on the manufacturer. The specific thickness and width options can vary based on the supplier and the requirements of the roofing project.
- 2. Insulation:** Provides thermal insulation and helps improve energy efficiency. The type of insulation commonly used underneath a TPO roof system is rigid board insulation. This material provides thermal insulation for the building and is compatible with the TPO membrane installation. Common types of rigid board insulation used with TPO roofing include extruded polystyrene (XPS), polyisocyanurate, and expanded polystyrene (EPS). These materials offer various R-values and have different strengths and moisture resistance properties, so the selection depends on the specific requirements of the building and the local building codes.
- 3. Adhesives:** Used for seaming and attaching the TPO membrane to the roof substrate. These adhesives are important components of the TPO installation process, and their selection and application are crucial for the overall performance and longevity of the roof system. Adhesives used with TPO roof systems typically include:
 - 1. TPO bonding adhesive:** This type of adhesive is specifically designed for bonding TPO membrane to various substrates, including insulation boards or roof decks. It provides a strong, durable bond when installing TPO roofing.
 - 2. TPO seam adhesive:** Seam adhesive is used for heat-welding or bonding TPO membrane seams together, creating a watertight seal. This adhesive is crucial for ensuring that the TPO roofing system effectively repels water and provides long-term protection.
- 4. Fasteners:** Secure the insulation and membrane to the roof deck.
In a TPO roof system, different types of fasteners and sizes may be used depending on the specific requirements of the installation. Common fasteners used with TPO roofing include:



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1. **Screws:** Typically made of corrosion-resistant materials such as stainless steel, these screws are used to secure insulation boards or other components to the roof deck.
2. **Plates:** These are used in conjunction with screws to secure the TPO membrane and insulation to the roof deck. They provide a stable attachment point for the roofing system.

The sizes and types of fasteners used will depend on factors such as the thickness of the insulation and the design of the roof assembly. Proper selection and installation of fasteners are essential to ensure the integrity and weather resistance of the TPO roof system.

5. **Flashing:** Protects roof edges, penetrations, and corners from water intrusion. In a TPO roof system, various types of flashings are used to provide waterproofing and protection at critical points where the roof membrane meets other architectural elements. Common types of flashings used with TPO roofing include:

1. **Wall flashings:** These are installed along parapet walls or other vertical surfaces to form a watertight seal between the TPO membrane and the wall.
 2. **Edge metal flashings:** Used along roof edges to protect the membrane and provide a clean, finished appearance. This includes drip edges and other metal profiles designed to direct water away from the roof system.
 3. **Penetration flashings:** These are installed around roof penetrations such as pipes, vents, and HVAC units to seal and protect the TPO membrane at these vulnerable points.
6. **Roofing accessories:** Such as walkway pads, pipe boots, and termination bars for added protection and functionality. Some common types of roof accessories for a TPO roof system include:
1. **Walkway pads:** These are used to create designated paths for maintenance or foot traffic on the roof, helping to protect the TPO membrane from damage.
 2. **Pipe boots:** These accessories are installed around pipes and other roof penetrations to create a waterproof seal and protect the TPO membrane.
 3. **Roof drains and scuppers:** These components are essential for proper drainage on the roof, helping to channel water away from the building and prevent ponding.
 4. **Roof hatches and access doors:** These provide safe and convenient access to the roof for maintenance and inspection purposes.



* Check with a licensed roofing contractor for additional information.