

## Chemical Resistance of Thermoplastic Membranes

### MEMBRANE CHEMICAL RESISTANCE CONSIDERATIONS

For certain projects, roof membranes may be exposed to chemicals, oils, greases, and/or other potentially deleterious substances. In these instances, selection of the correct membrane type is crucial for longevity and performance. Therefore, chemical resistance must be balanced against other key factors in order to meet all project-specific requirements. Examples of additional factors for consideration include UV resistance, heat resistance, ease of installation, the requirement (or not) for heat-welded seams, flashing conditions, warranty requirement, or other.

### THERMOPLASTIC MEMBRANE TYPES & ATTRIBUTES

Three of the most prevalent thermoplastic membranes and their main attributes are as follows:

- TPO (Thermoplastic Polyolefin) – A highly-versatile “all-around” membrane
- PVC (Polyvinyl Chloride) – A flexible, higher-performing membrane
- KEE (Ketone Ethylene Ester) – The highest-performing thermoplastic membrane

When considering thermoplastic single-ply membranes, PVC and KEE types are widely regarded as having the best chemical resistance. Because they resist a broad range of chemicals and solutions, there are inherently top-choices for applications that will experience chemical exposure. However, the degree, area, and frequency of chemical exposure will all determine the ultimate ability of the membrane to resist chemical attack. The chart below dives deeper into this relationship between membrane type, chemical type, and a qualitative resistance rating.

### THERMOPLASTIC MEMBRANE CHEMICAL RESISTANCE CHART

The following chart provides qualitative guidelines on the chemical resistance of thermoplastic single-ply membranes, using the following codes:

- A = Negligible Effect (The membrane should be suitable)
- B = Limited Absorption or Effect (The membrane should be suitable for most applications. However, staining may occur and/or there may be reduced resistance to heat and UV exposure)
- C = Extensive Absorption and/or Rapid Degradation possible (Membrane may be suitable for applications where only intermittent contact will occur, and contact with the membrane is for short periods of time)
- NR = Not Recommended (The membrane may disintegrate and weather resistance may be severely reduced)

NOTE: The chemical resistance chart published herein is for informational purposes only, and is not a substitute for independent testing and verification by the building owner or their consultants. It is the owner’s (and/or, their consultants’) responsibility to determine the suitability of a particular membrane with certainty, based on the particular requirements of their building(s).

Tremco Roofing & Building Maintenance makes no representation or warranty (express or implied) as to the chemical-resistance of single-ply membranes. Tremco Roofing’s warranties do not cover damages resulting from chemical attack on the membrane, including exposure to grease, oil, or other chemicals. For substances not listed below, please contact Tremco Technical Services for guidance before proceeding.

Chemical	TPO	PVC	KEE
De-icing Salts/Fluids	A	A	A
Dilute Acids	NR	C	B
Strong Acids	NR	NR	NR
Grease	B	C	A
Oils	C	C	B
Vegetable Fats	B	C	B
Animal Fats	B	C	B
Diesel & Jet Fuels	C	C	B
Solvents	C	NR	C