

AUTOMOTIVE PROTECTION GUIDE

Comparing TPU and TPH Paint Protection Films

Choosing the right Paint Protection Film (PPF) is essential for preserving a vehicle's aesthetic and resale value. Below is a technical breakdown of the two most common materials used in the industry today.

TPU (Thermoplastic Polyurethane)

The Gold Standard. TPU is a high-performance polymer characterized by its incredible elasticity and self-healing capabilities.

- **Longevity:** 5-10 years.
- **Clarity:** Superior optical transparency.
- **Resistance:** Highly resistant to UV yellowing and chemicals.

TPH (Thermoplastic Hybrid)

The Economy Choice. TPH is a hybrid material that uses PVC as a base but is enhanced with plasticizers to mimic the properties of TPU.

- **Longevity:** 2-3 years.
- **Cost:** Significant savings upfront.
- **Stiffness:** More rigid, making complex installs harder.

Technical Comparison

Feature	TPU (Premium)	TPH (Economy)
Material Base	100% Polyurethane	PVC Hybrid
Self-Healing	Advanced (Heat-activated)	Minimal
UV Resistance	Excellent (Anti-yellowing)	Moderate (Tends to yellow)
Flexibility	High (Easy stretching)	Low (May crack/brittle)

Feature	TPU (Premium)	TPH (Economy)
Adhesive	Removable, no residue	Can be aggressive/staining

Installation Considerations

While TPU is more expensive, it is significantly easier to install around complex curves like side mirrors and bumpers due to its high tensile strength. TPH, being stiffer, requires more heat and effort during application and may lift at the edges over time as the plasticizers evaporate.

Pro Tip: If you are protecting a long-term investment or a vehicle with high exposure to direct sunlight, TPU is the recommended choice to avoid the "yellowing" effect common in cheaper films.