

## TECHNICAL DATA SHEET

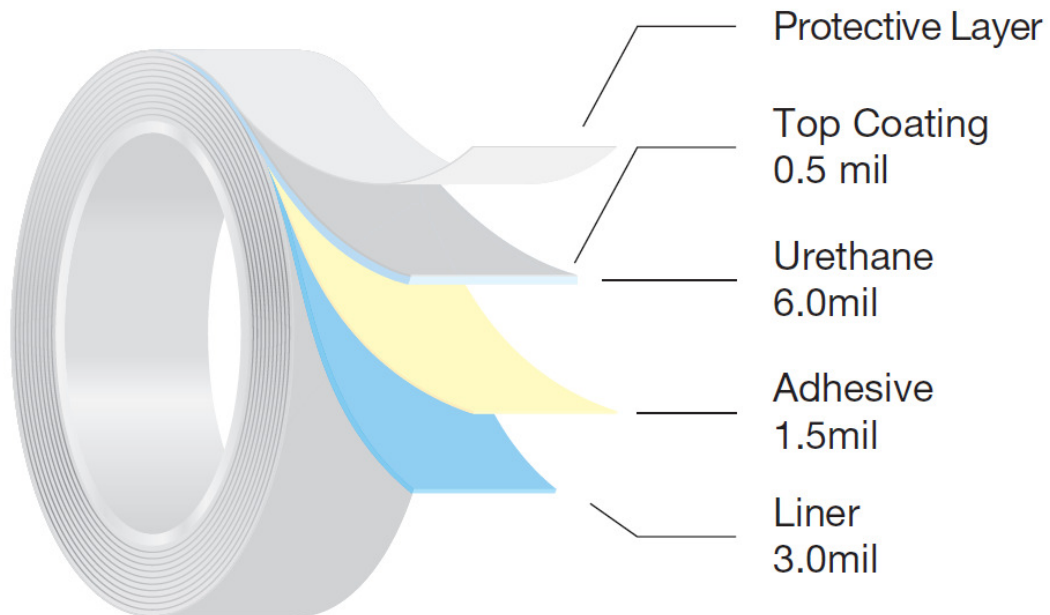
### Avery Dennison SPF-XIII Paint Protection Film

Updated: 05/20/2019

#### Introduction

Avery Dennison® SPF-XIII Paint Protection Film is premium grade clear top-coated aliphatic polyurethane film designed to protect automotive paint surfaces. The excellent performance against stone-chipping, scratching and abrasion effectively prevent damage and corrosion on the paint surface.

#### Product Construction



#### Paint Protection Film- Features & Advantage

- Excellent transparency & clarity
- Excellent UV-light, humidity and chemical resistance
- A proprietary, heat healing top-coating that is scratch and crack resistant
- Excellent paint protection performance in low temperature environment
- Special top coating on film surface, Provides invisible protection from damage caused by rocks, salt, insects, and other road debris.
- Ultra clear adhesive, no obvious adhesive lines during application, ultra clear polyester protective film on surface will protect face film of finish product
- Repositionable, low initial tack adhesive system, easy to install
- Excellent dimensional stability with low risk of shrinkage
- High gloss level without orange peel

**Paint Protection Film- Application**

- For optimal application performance, the substrate and ambient temperature should be within 15°C to 35°C
- Recommended installation solution: Use distilled water containing a very limited quantity of dishwasher rinse agent or baby shampoo
- Recommended install on automotive, motorcycle, RV, bicycle and most model of transportation
- For detailed product information and installation video & bulletin of Super Paint Protection Film visit our website: [graphics.averydennison.com.cn](http://graphics.averydennison.com.cn)

**Paint Protection Film- Product characteristics**

**Physical properties**

Features	Test method	Results
Caliper, face film	ISO534	6.5mil
Caliper, face film+ adhesive	ISO534	8.0mil
Tensile strength	DIN 53455	3,000 N/m
Elongation at break	DIN 53455	300%
Mil. spec. shrinkage <sup>1)</sup>	FTM-14 <sup>1)</sup>	< 0.5%
Gravel-o-meter	SAE J400 <sup>2)</sup>	Pass

<sup>1)</sup> Shrinkage is measured on a 150 x 150 mm aluminum panel to which the specimen has been applied. After 72 hrs @ 23°C + 1 week 70°C the shrinkage is measured.

<sup>2)</sup> Use gravel instead sand according to ASTM D968 & SAE-J400.

**Adhesive properties**

Peel Adhesion	FINAT FTM1	
	30 min	400 N/m
	24 Hours	600 N/m
	1 week ,70°C	600 N/m <sup>3)</sup> <sup>4)</sup>
	250 hrs, 40° C, 98% R.H.	500 N/m <sup>3)</sup> <sup>4)</sup>
	250 hrs ,water immersion	500 N/m <sup>3)</sup> <sup>4)</sup>
	Heat cycle test (10 Cycles)	600 N/m <sup>3)</sup> <sup>4)</sup> <sup>5)</sup>
	Waxing / De-waxing	400 N/m <sup>3)</sup> <sup>4)</sup> <sup>6)</sup>

<sup>3)</sup> Test initiated after 48 hrs bonding time

<sup>4)</sup> No significant change in color, gloss or dimensions

<sup>5)</sup> 1 cycle : 3hrs @ 70°C + 1H @ 23°C + 3hrs @ -40°C+ 1H @ 23°C + 16hrs @ 40°C/98%RH

<sup>6)</sup> Sample is waxed with automotive grade wax. After 48 hrs, the wax is removed by immersion for 5-10 min. in turpentine. The surface has to be cleaned with cloth or tissue before test.

**Durability**

Heat aging	3 weeks @ 80°C	No significant change
Water Immersion	400 hr@40°C	No significant change
Boiling water resistance	5 min in boiling water	No significant change
Shelf life	Stored at 22° C/50-55 % RH	12 months
Durability	Vertical application	10 years
Service Temp.		-45°C to 80°C

<sup>7)</sup> Cycle: 2 hrs. light (102 min. 50%RH, 18 min. + specimen spray.)

Conditions: Light intensity 0.51W/m2 at 340 nm: black panel temperature = 70°C. Chamber Air temperature =38°C

**Chemical Resistance properties**

**1) Visual inspection after exposure to following test fluids**

Gasoline, 30 minutes	No significant change
Carwash solution, 1 hour	No significant change
Antifreeze, 1 hour	No significant change
0.5mol/L Hydrochloric acid, 4 hrs.	No significant change

**2) Visual inspection after drip test**

ASTM – B fluid <sup>8)</sup>	No significant change
Diesel	No significant change
50% isopropyl alcohol/50% water	No significant change

<sup>8)</sup>25 mm wide strip mounted on a panel, Bonding Time: 24 hrs.  
5 ml. of fluid is dripped over the film + edge. The test is repeated twice at 24 hr. intervals.

**Important**

Information on physical and chemical characteristics is based upon tests we believe to be reliable. The values listed herein are typical values and are not for use in specifications. They are intended only as a source of information and are given without guarantee and do not constitute a warranty. Purchasers should independently determine, prior to use, the suitability of this material to their specific use. All technical data are subject to change.

**Warranty**

Avery Dennison® branded materials are manufactured under careful quality control and are warranted to be free from defect in material and workmanship. Any material shown to our satisfaction to be defective at the time of sale will be replaced without charge. Our aggregate liability to the purchaser shall in no circumstances exceed the cost of the defective materials supplied. No salesman, representative or agent is authorized to give any guarantee, warranty, or make any representation contrary to the foregoing. All Avery® branded materials are sold subject to the above conditions, being part of our standard conditions of sales, a copy of which is available on request.