



Surface Protection Window Films

Protection for glass and rigid plastic glazing



Safety

Avery Dennison® Surface Protection Window Films ensure cost-effective protection of valuable glass and rigid plastic substrates, safeguarding glazing systems in vulnerable public areas from vandalism and damage. A tough, invisible layer resists vandals and helps to protect against spray paint, pen, scratches and etchings.

The wipe-clean, protective sacrificial films are engineered to prolong the service life of glazing systems. High-performance adhesion technology enables simple installation, along with clean and easy removal/replacement without leaving a residue.

Clear Poly i™ 4 mil interior films suit **plastic glazing systems** in busy areas such as transportation shelters, walkways, acoustic barriers, stadiums and train windows. **Clear Poly X™** films suit exterior application and are available in 4 & 6 mil thicknesses.

AG Clear ix™ films can be applied internally or externally on most **glass glazing systems**. Convenient and clean removal facilitates residue-free removal - available in 4 & 6 mil thicknesses.

Features and Benefits

- > **UV block, limiting fading and sun damage (99% for Clear Poly i and up to 97% for AG Clear ix)**
- > **Compatible with most plastic glazing systems* (Clear Poly i, Clear Poly X) and most glass glazing systems (AG Clear ix)**
- > **Hard film surface provides wipe-clean surface protection from graffiti**
- > **Fast, clean and easy replacement without leaving an adhesive residue**
- > **A cost-effective alternative to replacing damaged glazing**

*See The Avery Dennison Poly Films Installation and Maintenance Guide for complete details.

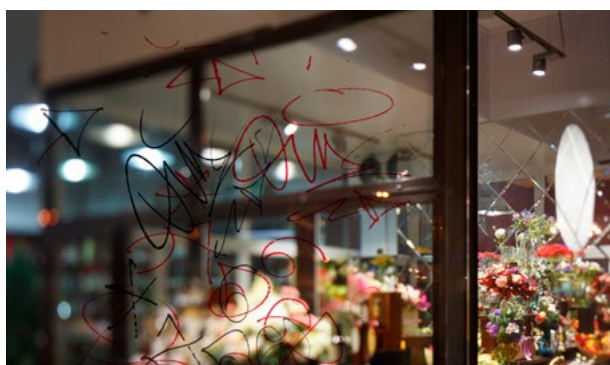


Inspired Brands.
Intelligent World.™

graphics.averydennison.eu

| Optical and Solar Properties** | Clear Poly i™ 4 mil | Clear Poly X™ 4 mil | Clear Poly X™ 6 mil | AG Clear ix™ 4 mil | AG Clear xi™ 6 mil |
|------------------------------------|---------------------|---------------------|---------------------|--------------------|--------------------|
| Pane | Single | Single | Single | Single | Single |
| Visible Light Transmitted | 88% | 88% | 88% | 90% | 90% |
| Visible Light Reflected (Interior) | 13% | 10% | 10% | 11% | 12% |
| Visible Light Reflected (Exterior) | 12% | 10% | 10% | 11% | 12% |
| Ultra Violet Block | 99% | 99% | 99% | 92% | 97% |
| Mechanical Properties | | | | | |
| Thickness (mil) | 4 | 4 | 6 | 4 | 6 |
| Tensile Strength at Break (PSI) | 28,500 | 28,500 | 28,000 | 28,500 | 28,500 |
| Break Strength (lb/inch) | 112 | 112 | 125 | 112 | 125 |
| Elongation at Break (%) | 125 | 125 | 150 | 125 | 125 |
| Peel Strength (lb/inch) | 7 | 1-2 | 1-2 | 2-3 | 2-3 |

**Performance results are calculated on 3 mm glass using NFRC methodology and LBNL Window 5.2 software, and are subject to variations in process conditions within industry standards. Performance calculations should only be used for estimating purposes.



DISCLAIMER - All Avery Dennison statements, technical information and recommendations are based on tests believed to be reliable but do not constitute a guarantee or warranty. All Avery Dennison products are sold with the understanding that purchaser has independently determined the suitability of such products for its purposes. All Avery Dennison's products are sold subject to Avery Dennison's general terms and conditions of sale, see <http://terms.europe.averydennison.com>

©2019 Avery Dennison Corporation. All rights reserved. Avery Dennison and all other Avery Dennison brands, this publication, its content, product names and codes are owned by Avery Dennison Corporation. All other brands and product names are trademarks of their respective owners. This publication must not be used, copied or reproduced in whole or in part for any purposes other than marketing by Avery Dennison.

PRODUCT DATA SHEET

Avery Dennison® Universal Anti Graffiti Films

Issued: 10/2021

Introduction

Avery Dennison® Universal Anti Graffiti Films special, scratch resistant coating shrugs off most spray, paint and pen, and wipes clean with basic cleaning materials. Removing and replacing etched or scratched film is fast and simple, thanks to the film's easy-removal adhesive.

The anti-graffiti film is an efficient alternative to a costly, time-consuming glass replacement.

Conversion

For conversion information please review the Technical Bulletin "Avery Dennison® Solar Window Films Interior".

Recommendations

- » Avery Dennison® AG Clear 4 mil ix: 4 mil universal film for interior or exterior installation. Enhanced capability ensures tagging can be removed by simple cleaning: surface etching and gouging requires film replacement, the glass itself generally remaining unharmed.
- » Avery Dennison® AG Clear 6 mil ix: 6 mil film with a special coating originally developed to tackle the daily graffiti abuse of metros. Excels in spray resistance and wipe ability.

Features

- » Wipe-clean coating to shrug off mist sprays and paints
- » Quick-release adhesive for speedier film removal and replacement
- » Substrate compatibility with glass or mirrors

Fire Certification: B-s1, d0 (DIN EN 13501-1)

¹⁾ Warranted Durability

The durability is based on middle European exposure conditions. Actual performance life will depend on substrate preparation, exposure conditions and maintenance of the marking. For instance, in the case of signs facing south; in areas of long high temperature exposure such as southern European countries; in industrially polluted areas or high altitudes, exterior performance will be decreased. With regard to Avery Dennison Architectural Window Film Products, the durability shall not differ between the climatic zones, but the same durability shall apply to all climatic zones.



Face Film

AG Clear 4 mil ix; AG Clear 6 mil ix; Exterior durable AG hard coat special PS adhesive developed for rigid plastic substrates



Adhesive

Pressure sensitive Removable – Solvent based acrylic



Backing

PET



Durability

2 years vertical (10 years interior) / 2 years (horizontal/sloped)¹⁾



Shelf Life

When stored in original packaging upon arrival at the customer: 2 years. Recommended Storage conditions are 20 °C (± 2 °C) with 50 %RH (± 5%).

Physical Characteristics

Mechanical Properties:

| | AG Clear 4 mil ix | AG Clear 6 mil ix |
|---------------------------|-------------------|-------------------|
| Thickness | 4 mil | 6 mil |
| Tensile Strength at Break | 28,500 PSI | 28,500 PSI |
| Break Strength | 112 lb/inch | 112 lb/inch |
| Elongation at Break | 125% | 125% |
| Peel Strength | 4-5 lb/inch | 3-4 lb/inch |

Optical & Solar Properties:

| | AG Clear 4 mil ix Single Pane | AG Clear 6 mil ix Single Pane |
|----------------------------------|----------------------------------|----------------------------------|
| Visible Light Transmitted % | 90 | 88 |
| Visible Light Reflected (Int) % | 11 | 10 |
| Visible Light Reflected (Ext) % | 11 | 10 |
| U V Block % | 93,68 | 99,90 |
| Total Solar Energy Reflected % | 10 | 9 |
| Total Solar Energy Transmitted % | 82 | 79 |
| Total Solar Energy Absorbed % | 8 | 12 |
| Shading Coefficient | 0,97 | 0,95 |
| Total Solar Energy Rejected % | 16 | 18 |
| Solar Heat Gain Coefficient | 0,84 | 0,82 |
| Emissivity (Room side) | 0,84 | 0,84 |
| U-Value Winter | 1,04 | 1,07 |
| K-Value Winter | 5,91 | 6,05 |
| Glare Reduction % | 0 | 2 |
| Luminous Efficacy | 0,93 | 0,93 |

Important

Information on physical and chemical characteristics and values in this document are based upon tests we believe to be reliable and do not constitute a warranty. 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. In case of any ambiguities or differences between the English and foreign versions of this document, the English version shall be prevailing and leading.

Avery Dennison warrants that its Products meet its specifications. Avery Dennison gives no other express or implied guarantees or warranties with respect to the Products, including, but not limited to, any implied warranties of merchantability, fitness for any particular use and/or non infringement. All Avery Dennison products are sold with the understanding that the purchaser has independently determined the suitability of such products for its purposes. The period of warranty is one (1) year from the date of shipment unless expressly provided otherwise in the product data sheet. All Avery Dennison's products are sold subject to Avery Dennison's general terms and conditions of sale, see <http://terms.europe.averydennison.com>.

Avery Dennison's aggregate liability to Purchaser, whether for negligence, breach of contract, misrepresentation or otherwise, shall in no circumstances exceed the price of the defective, non-conforming, damaged or undelivered Products which give rise to such liability as determined by net price invoices to Purchaser in respect of any occurrence or series of occurrences. In no circumstances shall Avery Dennison be liable to Purchaser for any indirect, incidental or consequential loss, damage or injury, including without limitation, loss of anticipated profits, goodwill, reputation, or losses or expenses resulting from third party claims.

© 2021 Avery Dennison Corporation. All rights reserved. Avery Dennison and all other Avery Dennison brands, this publication, its content, product names and codes are owned by Avery Dennison Corporation. All other brands and product names are trademarks of their respective owners. This publication must not be used, copied or reproduced in whole or in part for any purposes other than marketing by Avery Dennison.

PRODUCT DATA SHEET

Avery Dennison® Poly Films

Issued: 10/2021

Introduction

Avery Dennison® Poly range is engineered to extend the substrate lifetime, and enhance its performance. A novel adhesive formulation ensures compatibility with plastic substrates and enables clean removal while exceptional hard coats deliver improved functionality, excellent outdoor resistance and an extended lifetime.

Conversion

For conversion information please review the Technical Bulletin "Avery Dennison® Poly Films".

Recommendations

Protecting polycarbonate and PMMA from graffiti, vandalism and everyday wear and tear. Avery Dennison® Poly Clear films provide the ideal solution for plastic glazing applications in busy areas:

- » Bus/transport shelters
- » Walkways
- » Acoustic barriers
- » Stadiums
- » Train windows

Features

- » UV Block
- » Protects skin
- » Inhibits fading
- » Anti-graffiti
- » Protects surface
- » Clean and easy removal Anti-graffiti



Face Film

Poly Clear 4 mil i; Poly Clear 4 mil X; Poly Clear 6 mil X



Adhesive

Solvent based acrylic pressure sensitive for rigid plastic substrate



Backing

PET



Durability

See below



Shelf Life

When stored in original packaging upon arrival at the customer: 2 years. Recommended Storage conditions are 20 °C (± 2 °C) with 50 %RH (± 5%).

Physical Characteristics

Warranted Durability¹⁾:

| | Poly Clear 4 mil i | Poly Clear 4 mil X | Poly Clear 6 mil X |
|-------------------|--------------------|--------------------|--------------------|
| Vertical | 5 years | 4 years | 4 years |
| Horizontal/Sloped | 5 years | 3 years | 3 years |

Fire Certification: B-s1, d0 (DIN EN 13501-1)

| Mechanical Properties: | Poly Clear 4 mil i | Poly Clear 4 mil X | Poly Clear 6 mil X |
|-------------------------------|---------------------------|---------------------------|---------------------------|
| Thickness | 4 mil | 4 mil | 6 mil |
| Tensile Strength at Break | 28,500 PSI | 28,500 PSI | 28,000 PSI |
| Break Strength | 112 lb/inch | 112 lb/inch | 125 lb/inch |
| Elongation at Break | 125% | 125% | 150% |
| Peel Strength | 1-2 lb/inch | 1-2 lb/inch | 1-2 lb/inch |

| Optical & Solar Properties: | Poly Clear 4 mil i | Poly Clear 4 mil X | Poly Clear 6 mil X |
|--|---------------------------|---------------------------|---------------------------|
| | Single Pane | Single Pane | Single Pane |
| Visible Light Transmitted % | 88 | 88 | 88 |
| Visible Light Reflected (Int) % | 13 | 10 | 10 |
| Visible Light Reflected (Ext) % | 12 | 10 | 10 |
| U V Block % | 99 | 99 | 99 |
| Total Solar Energy Reflected % | 11 | 10 | 9 |
| Total Solar Energy Transmitted % | 80 | 80 | 80 |
| Total Solar Energy Absorbed % | 9 | 10 | 11 |
| Shading Coefficient | 0,95 | 0,96 | 0,95 |
| Total Solar Energy Rejected % | 18 | 17 | 18 |
| Solar Heat Gain Coefficient | 0,82 | 0,83 | 0,82 |
| U-Value Winter | 1,03 | 1,04 | 1,07 |
| K-Value Winter | 5,85 | 5,91 | 6,05 |
| Glare Reduction % | 2 | 2 | 2 |

¹⁾ Warranted Durability

The durability is based on middle European exposure conditions. Actual performance life will depend on substrate preparation, exposure conditions and maintenance of the marking. For instance, in the case of signs facing south; in areas of long high temperature exposure such as southern European countries; in industrially polluted areas or high altitudes, exterior performance will be decreased. With regard to Avery Dennison Architectural Window Film Products, the durability shall not differ between the climatic zones, but the same durability shall apply to all climatic zones.

Important

Information on physical and chemical characteristics and values in this document are based upon tests we believe to be reliable and do not constitute a warranty. 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. In case of any ambiguities or differences between the English and foreign versions of this document, the English version shall be prevailing and leading.

Avery Dennison warrants that its Products meet its specifications. Avery Dennison gives no other express or implied guarantees or warranties with respect to the Products, including, but not limited to, any implied warranties of merchantability, fitness for any particular use and/or non infringement. All Avery Dennison products are sold with the understanding that the purchaser has independently determined the suitability of such products for its purposes. The period of warranty is one (1) year from the date of shipment unless expressly provided otherwise in the product data sheet. All Avery Dennison's products are sold subject to Avery Dennison's general terms and conditions of sale, see <http://terms.europe.averydennison.com>.

Avery Dennison's aggregate liability to Purchaser, whether for negligence, breach of contract, misrepresentation or otherwise, shall in no circumstances exceed the price of the defective, non-conforming, damaged or undelivered Products which give rise to such liability as determined by net price invoices to Purchaser in respect of any occurrence or series of occurrences. In no circumstances shall Avery Dennison be liable to Purchaser for any indirect, incidental or consequential loss, damage or injury, including without limitation, loss of anticipated profits, goodwill, reputation, or losses or expenses resulting from third party claims.

© 2021 Avery Dennison Corporation. All rights reserved. Avery Dennison and all other Avery Dennison brands, this publication, its content, product names and codes are owned by Avery Dennison Corporation. All other brands and product names are trademarks of their respective owners. This publication must not be used, copied or reproduced in whole or in part for any purposes other than marketing by Avery Dennison.