

Avery Dennison® MPI 1405 Polyurethane

Easy Apply RS

Revision: 1 Dated: 07/27/17

Uses:

Avery Dennison MPI 1405 Polyurethane Film is a premium gloss opaque film designed for use on textured wall surfaces such as brick and cinderblock as well fleet marking and vehicle wrap and corporate identity applications. MPI 1405 provides superior conformability to irregular surfaces such as compound curves and corrugations. Easy Apply™ and Easy Apply™ RS features offer the benefits of reduced wrinkling and air entrapment inherent in the application of decals. The RS feature also provides repositionability and slide-ability for exact positioning. Graphics should be overlaminated with DOL 6460 Clear Polyurethane.



Face: 2.0 mil (51 microns) high gloss polyurethane film



Adhesive: Gray Long Term Removable Acrylic



Liner: 90# Easy Apply™ RS

Application Surfaces:

Flat, Flat with Rivets, Corrugations, Complex Curves (vehicle wraps), Moderately Textured Walls

Features:

- PVC free polyurethane
- Superior conformability to irregular substrates
- The air egress technology on Easy Apply and Easy Apply RS films helps eliminate wrinkles and bubbles
- RS feature provides slide-ability allows for easy positioning
- High gloss finish
- Outstanding durability and outdoor performance
- Dimensionally stable liner for easy converting
- Excellent dimensional stability
- Long term removable provides permanent adhesion, but removes cleanly with heat
- ICC profiles available on the Avery Dennison's website (<http://avery-us.color-base.com>)
- ASTM E-84 Class 1 or A rating

Conversion:

- Latex Inkjet
- Solvent based inkjet
- UV inkjet*
- Mild/Eco Solvent inkjet

* For flat surfaces only, except for qualified flexible UV inks.

Common Applications:

- Outdoor Textured Surfaces
- Vehicle
- Fleet
- POP/ Tradeshow
- Outdoor Signage
- Hospitals

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Physical Characteristics:

Property	Measurement	Typical Value
Caliper, face		2.0 mil (51µm)
Caliper, adhesive		1.0mil (25 µm)
Dimensional stability		<0.015"(0.4mm) Note: Ink loads in excess of 250% may cause increased shrinkage and/or increased initial adhesion of the printed film
Tensile at Yield		4.0 - 8.0 lb/in (0.7–1.5 kg/cm)
Elongation		200% min.
Gloss	Hunter Gloss @ 60 degrees	90
Adhesion:	90# StaFlat RS 15 min 24 hr 1 week	2.0 lbs/in (350 N/m) 2.5 lbs/in (438 N/m) 3.5 lbs/in (613 N/m)
Flammability	Self Extinguishing	ASTM E84 Class 1 or A rating
Shelf-Life		2 years from date of manufacture (when stored at the following temperatures and humidity conditions 68°-77° F (20° - 25° C) and 50±5% R. H.)
Durability	Vertical Exposure	Unprinted – 12 years (unwarranted) Printed – <i>Up to 6 years vertical / 3 years horizontal</i> <i>Textured Surfaces 2 year indoor / 6-12 months outdoor. see ICS Performance Guarantee for printer specific information</i>
Min. Application Temperature		50° F (10° C)
Service Temperature		-50° to 180°F (-45° to 82° C) (Reasonable range of temperatures which would be expected under normal environmental conditions).
Chemical resistance		Resistant to most mild acids, alkalis, and salt solutions

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Data represents average values where applicable, and is not intended for specification purposes.

Warranty:

This Warranty applies to the Product listed in this Data Sheet. All statements, technical information (including physical and chemical characteristics) and recommendations about Avery Dennison products are based upon tests believed to be reliable but do not constitute a guarantee or warranty. All Avery Dennison products are sold subject to the Purchaser's assent and agreement that Purchaser is responsible for, and has independently determined, the suitability of such products for its purposes or its customer's purposes. Avery Dennison products are warranted to be free from defects in material and workmanship (i) for two years from the date of manufacture, or (ii) from the date of manufacture until the expiration of the period stated on the specific Product Data Sheet in effect at the time of delivery. Such time periods are subject in either case to the proper storing and application of said product, and the failure to properly store or apply the product, including without limitation the failure to follow any applicable Instructional Bulletin, negates any warranty. It is expressly agreed and understood that Avery Dennison's sole obligation and Purchaser's exclusive remedy under this warranty, under any other warranty, express or implied, or otherwise, shall be limited exclusively to: (a) repair or replacement of defective product without charge at Avery Dennison's plant or at the location of the product (at Avery Dennison's election), or (b) in the event repair or replacement are not commercially practical, a credit amount up to the price of the product taking into account the defect in the product in Avery Dennison's sole discretion.

THE WARRANTY EXPRESSLY SET FORTH ABOVE IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR USE AND/OR NON-INFRINGEMENT. SELLER SPECIFICALLY DISCLAIMS AND EXCLUDES ALL OTHER SUCH WARRANTIES. NO WAIVER, ALTERATION, ADDITION OR MODIFICATION OF THE FOREGOING CONDITIONS SHALL BE VALID UNLESS MADE IN WRITING AND MANUALLY SIGNED BY AN OFFICER OF AVERY DENNISON.

AVERY DENNISON'S LIABILITY FOR DEFECTIVE PRODUCTS SHALL NOT EXCEED THE PURCHASE PRICE PAID THEREFORE BY PURCHASER AND IN NO EVENT SHALL AVERY DENNISON BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES WHETHER FORESEEABLE OR NOT, CAUSED BY DEFECTS IN SUCH PRODUCT, WHETHER SUCH DAMAGE OCCURS OR IS DISCOVERED BEFORE OR AFTER REPLACEMENT OR CREDIT, AND WHETHER OR NOT SUCH DAMAGE IS CAUSED BY AVERY DENNISON'S NEGLIGENCE.

All sales and contracts for sale of Products are subject to Purchaser's assent and agreement to this Warranty. Avery Dennison hereby objects to any terms or conditions contained in any purchase order or other communication of any kind from the Purchaser that is conflicting, inconsistent or additional to this Agreement.

Related Documents:

The following Avery Dennison literature will provide complete information to the user for proper application, storage, and other requirements and is available upon request from your Avery Dennison representative or from the Avery Dennison website (www.graphics.averydennison.com).

⚠ WARNING

Failure to install the film in full compliance with Avery Dennison's installation instructions may result in personal injury or property damage. Read and follow all instructions when installing the film.

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Document Title	Reference Number
Substrate Cleaning and Preparation	Instructional Bulletin #1.10
Storage, Maintenance, and Cleaning of PVC Films	Instructional Bulletin #1.20
Warranty of Avery Dennison Films	Instructional Bulletin #1.30
Application of Avery Dennison SuperCast Films on Irregular Substrates	Instructional Bulletin #4.07
Multi Purpose Ink Jet OEM Qualification Matrix, Durability Reference, & Troubleshooting Guide	Instructional Bulletin #5.80
Premask Recommendations	Instructional Bulletin #5.50
Removal Instructions	Instructional Bulletin #4.10
Wall Graphics	Instructional Bulletin #6.50

Application:

Avery Dennison MPI 1405 Series is designed for application onto solid surfaces such as passenger vehicles, buses, trains, and watercraft. To ensure color consistency when wrapping a vehicle, ensure the material used is from one production lot # of material.

Important Note: Never use a wet application method to apply this film.

- Some slight color shift may occur between rolls or lots, therefore, minimizing the mixing of rolls/lots on a specific vehicle is encouraged. If multiple rolls are needed be sure to use only rolls from the same production lot.
- All vehicle substrates must be cleaned according to Avery Dennison recommended cleaning practices as outlined in IB # 1.10 "Substrate Cleaning and Preparation".
- See IB 4.07 "Application Avery Dennison SuperCast films on Irregular Substrates" for complete application recommendations. For cleaning and care recommendations see IB 1.50.
- See IB 6.50 "Printing, Processing and Application Instructions for Wall Graphics" for textured wall application recommendations.

Important Note: Only use Avery Dennison recommended cleaning products and solutions (noted in IB 1.50). Cleaning and maintenance products should conform to the following:

- Free from abrasive components
- Ideally pH balanced, thus not highly acidic or alkaline (pH level between 5 and 9)
- Free from alcohols (including isopropyl), acids, ammonia, chlorine, glycol ethers, harmful detergents, petroleum distillates, and phosphates

Unsuitable Uses:

This Avery Dennison product is not designed or recommended for the following uses. Unsuitable applications or exposure conditions include:

- Graphics exposed to oil, harsh chemical, or gasoline vapors or spills
- Paint that is not thoroughly cured or dried
- Low surface energy substrates (i.e. Tedlar® coatings)
- Substrate surfaces that are not properly cleaned
- Painted substrates with poor paint-to-substrate, or paint-to-paint bond
- Film applied to non-Avery Dennison Films
- Watercraft below the static water line

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- Watercraft which are not edge sealed
- Non-OEM painted vehicles
- Graphic removal from paint with poor adhesion or existing graphics
- Graphics where application tape must adhere to liner
- Plotter cut text where the minimum size of the text or dimension of the object is less than 2 in (51 mm)

Elements that Affect Performance Life of a Graphic on Textured Surfaces

- Improper Installation will result in poor adhesion, edge lift or curl
- Poor initial adhesion. Test prior to installation to ensure the film has sufficient adhesion to the textured surface.
- Exposure to water. Graphics exposed to water from rain, irrigation systems or other elements can trap water which will lead to loss of adhesion/lifting and mold.
- Recessed areas are susceptible to lift at elevated surface temperatures. In particular, surface temperatures above 135° F (57°C) may cause lifting in recessed areas such as mortar joints.
- Textured substrates with variations greater than 1/8" including mortar joints may experience lifting in these areas.
- For exterior textured masonry walls without an effective moisture barrier, water vapor can be transmitted from warmer, moister interior areas to the exterior surface. If a graphic is applied on such an exterior wall, freeze/thaw cycles can accelerate moisture transmission and allow moisture to be trapped between the graphic and the wall. If this occurs, the graphics may be susceptible to lifting and spalling may occur in or on the wall.
- Removal of graphics may cause damage to flawed substrates and paint, as well as textured wallboard or wallpaper.

Removability:

The removability listed in the features section "Clean removability" means removable with less than 20% adhesive residue when using appropriate heat and chemical removal methods. See Instructional Bulletin 4.10 for removal instructions. Avery Dennison will reimburse a reasonable portion of extra removal costs, not to exceed the cost of the film used on the application.

Avery Dennison does not warrant removability from the following substrates:

- **Surfaces with poor paint-to-substrate adhesion**
- **Wallboard (painted or unpainted)**
- **Pre existing graphics that must remain intact; damage to existing graphic when film is removed**
- **Improperly cured paint**
- **Oxidized or chalked substrates**
- **Horizontally exposed outdoor applications (as defined in Instructional Bulletin 1.30).**
- **Stainless Steel**

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Avery Dennison makes no warranty for:

- **Paint Staining:** Avery Dennison does not warrant vehicle paint staining that may be visible after removing material which has cracked or discolored. To reduce the risk of this problem, always remove the graphic at the first sign of a change in the surface of the material.
- **Ease or speed of removal of any graphic**
- **Removal from automotive paint that is greater than 5 years old.**
- **Removal from paint that is improperly cured**
- **Removal from aged paint or metals, surface oxidation or chalking; user must test, approve and accept liability for such applications.**
- **Removal from horizontally-exposed outdoor applications.**

Additional Notes:

Avery Dennison does not warrant damage to the interior wall surface caused by removing film even if a removable adhesive was used. Removing a graphic can cause damage to the wall. Due to the variety of wall surfaces Avery Dennison cannot guarantee damage free removal. The amount of damage can be reduced or eliminated by following the inspection, cleaning and preparation guidelines provided in Instructional Bulletin #6.50.

Revisions are italicized

Patent Registration:

US6,630,049, US7,060,351, US7,344,618, EP1276605, EP1282472

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