

Avery Dennison® V2000 Engineering Grade Beaded Reflective

Permanent StaFlat

Revision: 1 Dated: 10/31/18

Uses:

Avery Dennison V2000 beaded Engineering Grade Retroreflective offers exceptional value for architectural, transportation, and general signage applications. V2000 meets ASTM D4956 Type 1.



Face: 5.5 - 6.5 mil (140 - 165 micron)
Acrylic with Glass Microspheres



Adhesive: Permanent Clear Acrylic



Liner: 90#

Application Surfaces:

Flat, Simple Curves

Notes:

- not recommended for unpainted stainless steel
- Wet method of application is not recommended

Features:

- Superior day/night color consistency
- Chemical resistant
- Good UV, temperature, humidity and salt-spray resistance
- Brilliantly bright, day and night
- Excellent conversion on CAD plotters
- Permanent adhesive

Conversion:

- Screen Printing
- Flat bed sign-cut
- Drum roller sign-cut
- Steel rule sign-cut

Common Applications:

- Indoor Signage (Wayfinding)
- Outdoor Signage
- Striping

Product Data Sheet

Page 1 of 5



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www.graphics.averydennison.com
Customer Service: 800-282-8379

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Physical Characteristics:

| Property | Measurement | Typical Value |
|------------------------------|---------------------------|--|
| Caliper, face | | 4.0 - 5.0 mil (102 - 127 µm) |
| Caliper, adhesive | | 1.3 mil (33 µm) |
| Gloss | Hunter Gloss @ 60 degrees | 82 GU |
| Adhesion SS: | 15 min 24 hr 1 week | 3.5 lbs/in (604 N/m) 3.8 lbs/in (665 N/m) 4.6 lbs/in (802 N/m) |
| Flammability | FMVSS302 | Self Extinguishing |
| Shelf-Life | | 2 years from the 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 | Up to 3 years |
| Min. Application Temperature | | 65° F (18° C) |
| Service Temperature | | -10° to 150°F (-23° to 65° C) (Reasonable range of temperatures which would be expected under normal environmental conditions). |
| Chemical resistance | | Resistant to most mild acids, alkalis, and salt solutions |
| Optical Properties | Reflective Intensity | The V2000 meets the ASTM D4956 Type 1 |

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

Product Data Sheet

Page 2 of 5



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Product Data Sheet

Page 3 of 5



Graphics
Solutions

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⚠ 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.

Colors & Expected Durability

Vertical Durability for Zone 1 vertical applications is noted in the chart below. Color samples are available from samples.graphics@averydennison.com, or through your sales or customer service contact. Reference Instructional Bulletin 1.30 for zones by geographic location.

NOTE: Some color fade may occur in severe environmental areas. Reference IB 1.30 for durability guidelines.

| V2000 Series Name | Vertical Durability Zone 1 Years |
|---------------------------|-------------------------------------|
| V2000-101-R White Perm SF | 3 |
| V2000-450-R Red Perm SF | 3 |
| V2000-750-R Green Perm SF | 3 |

| V2000 Series Name | Vertical Durability Zone 1 Years |
|----------------------------|-------------------------------------|
| V2000-250-R Yellow Perm SF | 3 |
| V2000-650-R Blue Perm SF | 3 |
| | 3 |

Typical Coefficient of Retro-Reflectivity:

COMMENTS: (based on averages of production runs, NOT for specification purposes)

Min. coefficients of retroreflection (RA) 1 per ASTM D49562 Type I

Table A.

| Observation Angle | Color | Entrance Angle | |
|-------------------|--------|----------------|-------|
| | | - 4° | + 30° |
| 0.2° | White | 70 | 30 |
| | Yellow | 50 | 22 |
| | Blue | 4 | 1.7 |
| | Green | 9 | 3.5 |
| | Red | 14 | 6 |
| 0.5° | White | 30 | 15 |
| | Yellow | 25 | 13 |
| | Blue | 2.0 | 0.8 |
| | Green | 4.5 | 2.2 |
| | Red | 7.5 | 3.0 |

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).

Product Data Sheet

Page 4 of 5



Graphics
Solutions

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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 |
| Cleaning and Maintenance of Vehicle Wraps | Instructional Bulletin #1.50 |
| Converting Tips for Sign Films | Instructional Bulletin #2.10 |
| Ink recommendations for Cast, Reflective, Calendered, and Specialty Products | Instructional Bulletin #3.00 |
| Removal Instructions | Instructional Bulletin #4.10 |
| Thermal Transfer Printing, Converting, Operating, and Product Instructions | Instructional Bulletin #5.10 |
| Reflective Films on Stainless Steel IB 6.11 | Instructional Bulletin #6.11 |

Revisions are italicized

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Product Data Sheet

Page 5 of 5



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