Avery Dennison
Graphics Solutions
Product Overview

Australia & New Zealand

# Avery Dennison Reflective Film Guide




AVERY DENNISON

Spicers
Creating Solutions Together

# Our Story

The Avery Dennison story begins in 1935, with just a few spare parts, one very bright idea and a $100 loan. Ray Stanton (“Stan”) Avery, a clerk in Los Angeles, invented a smarter way for stores to price their products, then went on to pioneer the labeling industry. With a few simple materials - primarily used machine parts and a saber saw - Stan created and patented the first self-adhesive, die-cut labeling machine. His practical genius would ultimately yield eighteen patents and establish Avery Adhesives as the company that could transform how brands land businesses deliver information.






# Avery Dennison Reflective Film Guide

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Avery Dennison has been manufacturing reflective solutions for almost 100 years when the innovative J.C.Stimson began applying glass prismatic elements onto wooden road signs. Since this point Avery Dennison has continued to grow and evolve; bringing new, innovative micro prismatic and omni directional retroreflective technologies to the industry.

Today Avery Dennison is a preferred supplier to sign manufacturers worldwide with a comprehensive range of reflective films for essential traffic, vehicle and safety applications.

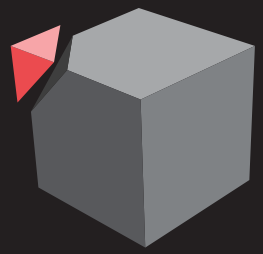


# Class System - Retroreflective Materials in Australia & New Zealand

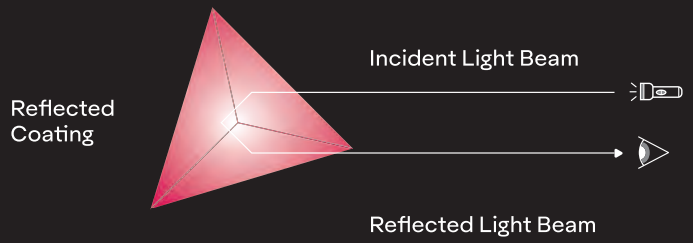
| Current Class (AS/NZS 1906.1:2017) | Former Class (AS/NZS 1906.1:2007) | Technology | Retroreflective Requirement | Applications |
|---|---|---|---|---|
| Class 1100 | Class 1X | Full-Cube Micro Prismatic Technology | Exhibits a high level of photometric performance (intensity of light retroreflected), with both long viewing distance and wide observation angle. | Regulatory signage for critical applications requiring long-distance retro-reflectivity and wide angles of reflection.<br>• Highway Signage<br>• Intersection/pedestrian Signage<br>• Sharp-turn Signage |
| Class 400/400T | Class 1/1W | High Intensity Prismatic High Intensity Micro Prismatic Technology (HIP) ic (Retroreflective) | Exhibits an intermediate level of photometric performance and strong durability. | Signage requiring strong retroreflective performance where signage is close to the road and long-distance viewing is not required.<br>• All other general traffic signage, including corner signage |
| Class 100 | Class 2 | Glass Bead Technology (Engineer Grade) | Exhibits a basic level of photometric performance and standard durability. | Signage requiring moderate levels of retroreflectivity<br>• Commercial signage<br>• Parking Lot Signage<br>• Any non-critical signage |

# Retroreflectivity Explained

Retroreflection, in its simplest form, is when light is reflected in the direction it came from. Retroreflectors are devices that are designed to send light back to its source; such as a sign mounted with an Avery Dennison reflective film. When used in traffic applications, retroreflective films are used to send light back towards the headlights of a vehicle to alert and inform the driver of the conditions ahead. There are two fundamental technologies for achieving retroreflection: glass beads and prisms. Prisms are the most efficient technology, being used in most standard retroreflectors. These prisms look like the corner of a cube; they have three sides and use “total internal reflection” for efficient retroreflection.

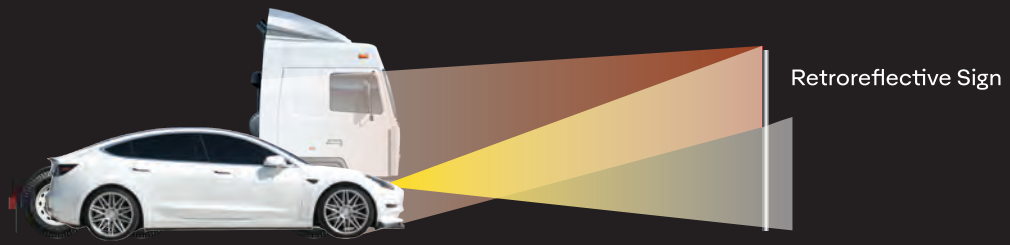


**Cube Corner**




**Retroreflective Prism - Total Internal Reflection**

The performance of a retroreflector can vary by the intensity of light returned and the viewing angle of the light returned, also known as the cone of retroreflectivity. A retroreflective film, such as Avery Dennison Omnicube, efficiently returns light back towards a light source with a wide cone of retroreflectivity allowing for long-distance visibility at night for all vehicle types. In the illustration below light is sent out by the headlights of the car and truck. Some of the light reaches the sign, where it is retroreflected by the retroreflective film. A wide cone of light is then sent back towards the car and truck allowing for visibility for both drivers.




BAY RD
entre
antle
IT
ST
West Perth
EXIT ONLY
MITCHEL FWY
Joondalup
Farmer Fwy
60
Charles St
RIGHT LANE
BUS LANE ONLY
weodeide

# Class 1100

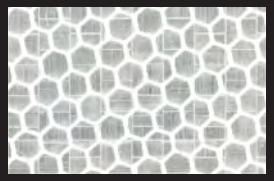
## Previously Class 1X

## T-1100 Omnicube

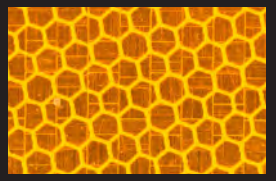
Avery Dennison OmniCube T-11000 Microprismatic Retroreflective Film takes full-cube reflective sheeting to a new level. OmniCube T-11000 is a unique OmniDirectional micro prismatic film that incorporates tiles of full-cube micro prisms arranged in multiple orientations offering uniform Class 1100 retroreflectivity at all sign face orientations.

## Key Features & Technology

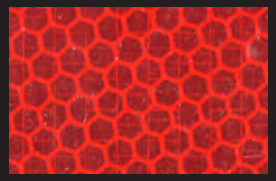
- **Smart at Every Angle** - OmniCube full-cube prism technology is the only film that provides uniform visual reflectivity at all sign-face orientations. This provides sign consistency, increases your yield and reduces waste.
- **100 Percent Efficiency** – OmniCube full-cube prisms are 100 per cent retroreflective, returning up to 50% more light to the light source compared to competitor films.
- **Intelligent Cube technology** - Ominicube's wide cone of retroreflecitvity returns light to drivers of all vehicles.
- **Superior finish** - Omnicube has a high-gloss finish, is conformable to simple curves and has excellent adhesion to aluminium sheeting.
- **Extreme Durability** - Field-proven UV stability with durability up to 12 years for safety signage applications worldwide.
- **Printability** - Omnicube is printable on TrafficJet UV Inkjet technology (excl. Red) with up to 15 years Warranty when protected by OL-1000 overlay.



T-11500
White



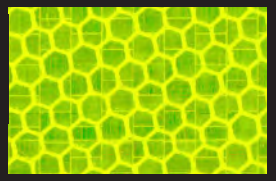
T-11501
Yellow



T-11508
Red



T-11511
Fluoro Yellow



T-11513
Fluoro Yellow-Green

The colours shown are digitally reproduced for printing purposes and are not 100% accurate.
For an actual production colour, please contact your Avery Dennison sales representative.

# Class 400/400T

## Previously Class1/Class 1W

Avery Dennison's T-6500 (Traffic) & W-6500 (Workzone) Series' of High-Intensity Microprismatic (HIP) Retroreflective Films are high-quality, durable, micro prismatic retroreflective material with a pressure-sensitive adhesive. Their unique micro prismatic construction provides a high level of retroreflectivity for demanding environments. The W-6500D has been designed for Workzone applications with cost in mind for highly demanding temporary applications.



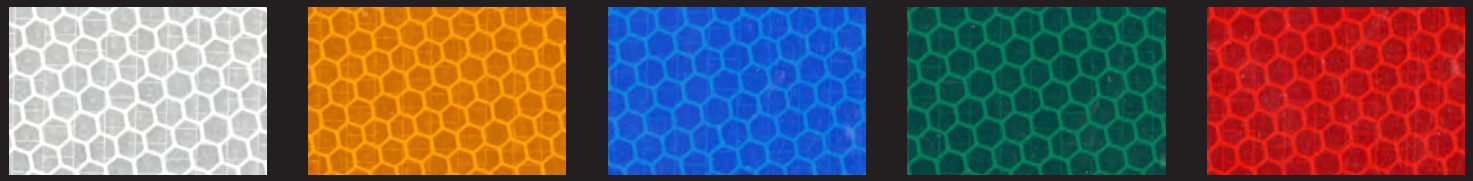
# Key Features & Technology

- **Omnidirectional Retroreflectivity** - Unique full-cube micro prismatic technology provides uniform visual reflectivity at all sign face orientations for greater sign consistency, and film utilisation and reduces waste.
- **Intense Retroreflectivity** - High Intensity micro-Prismatic retroreflective performance allows for advanced driver awareness of upcoming hazards.
- **Superior finish** - High-gloss finish, is conformable to simple curved surfaces and has excellent adhesion to aluminium sheeting.

**Note:** for adhesion to plastic traffic control devices, please consult your Avery Dennison representative.

## T-6500 High Intensity Prismatic

- **Exceptional Durability** - Field-proven UV stability with durability of up to 10 years for safety signage applications worldwide.
- **Printability** - White & Yellow can be printed on TrafficJet Solvent & UV Inkjet technology with up to 12 years Warranty when protected by OL-1000 overlay.



T-6500 White
T-6501 Yellow
T-6505 Blue
T-6507 Green
T-6508 Red

## W-6500D Series High Intensity Prismatic Workzone

- **Cost Effective** - Designed for temporary work zone signage with cost in mind, and durability up to 3 years outdoors.
- **Printability** - All work zone films are printable on TrafficJet Solvent & UV Inkjet technology with up to 3 years Warranty when protected by OL-1000 overlay.



W-6500 White
W-6501 Yellow
W-6514 Fluoro Orange

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P1

# Class 100

## Previously Class 2

## T-1500 Beaded Engineering Grade

Avery Dennison T-1500 Series Beaded Engineering Grade Retroreflective Film is a high-quality, durable, enclosed lens retroreflective material with a pressure-sensitive adhesive designed for screen and cut applications. T-1500 Series sheeting provides beaded technology with Omni-Directional retroreflectivty for uniform visual reflectivity at all sign-face orientations.

## Key Features & Technology

- **Omnidirectional Retroreflectivity** - Unique glass bead construction provides uniform visual reflectivity at all sign face orientations for greater sign consistency, and film utilisation and reduces waste.
- **Strong Durability** - Field-proven UV stability with durability of up to 7 years for safety signage applications worldwide.
- **Superior finish** - High-gloss finish with a consistent beaded appearance for a highly appealing signage finish. This film is conformable to simple curved surfaces and has excellent adhesion to aluminium sheeting.
- **Cost Effective** - Designed to be economical for non-critical safety signage applications
- **Printability** - White & Yellow can be printed on TrafficJet Solvent & UV Inkjet technology with up to 7 years' Warranty when protected by OL-1000 overlay.



T-1500 White
T-1501 Yellow
T-1505 Blue
T-1507 Green
T-1508 Red

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# Overlays

## OL-1000 Clear Anti-Graffiti Overlay

Avery Dennison OL-1000 UV Anti Graffiti film is a high-quality fluoropolymer film designed to protect and enhance the durability of digital print, signage and reflective films. The OL-1000 UV Anti-Graffiti film has extreme UV stability and strong resistance to common solvents allowing for protection from graffiti & vandalism.

## Key Features & Technology

- **Anti-Graffiti Protection** - resists vandalism and common solvents to allow for easy cleaning to keep signage looking good for years to come.
- **Extreme Durability** - Field proven for long-term protection of signage & reflective applications the OL-1000 provides durability for up to 15 years.
- **ICS Warranty System** - OL-1000 allows for coverage under Avery Dennison's ICS Warranty system providing peace of mind when used over Avery Dennison films and approved OEM inks.
- **Superior finish** - High gloss face provides a stunning finish, designed for use over printed graphics or retroreflective films.

OL-1000
Transparent



# Overlays

## OL-2000 Protective Transparent Overlay

The OL-2000 Series is a range of transparent-coloured acrylic films designed for computer cutting and application to retroreflective films. This range is designed for retroreflective applications, allowing light to pass through uninterrupted and providing a consistent appearance day or night.

## Key Features & Technology

- **Consistency** - OL-2000 films allow light to pass through uninterrupted allowing for signage to meet meeting AS/NZS 1906.1:2017 requirements and providing consistency between day and night appearance.
- **Exceptional Durability** - Field proven UV stability with long term durability (up to 12 years) for safety signage applications worldwide
- **Economical** - OL-2000 is ideal as an economical alternative to screen printing on small production runs.
- **Superior Finish** - High Gloss finish, designed for use over Avery Dennison retroreflective films



OL-2001
Yellow Transparent

OL-2005
Blue Transparent

OL-2007
Green Transparent

OL-2008
Red Transparent

OL-2009
Brown Transparent

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# Vehicle: VisiFlex™ V-8000 EA

Avery Dennison® VisiFlex™ V-8000 EA Series High Visibility Reflective Film is engineered to improve the day and nighttime visibility of emergency response, utility and mining/construction fleets. Visiflex™ V-8000 EA utilises Avery Dennison's unique full-cube technology to offer omnidirectional retroreflectivity to efficiently return light at a wide range of angles and provide the ultimate visibility for vehicles on the road. Visiflex™ V-8000 EA now also comes with an Easy Apply liner and unlike other prismatic vehicle films on the market, it has a single-layer construction, which improves application and removal speeds whilst eliminating the need for edge sealing.

## Key Features & Technology

- **High Visibility** - VisiFlex™ V-8000 EA utilises Avery Dennison's unique full-cube micro prismatic technology to meet ASTM Type IV (International) standards for retroreflectors with the highest levels of retroreflective performance. This technology also provides uniform visual retroreflectivity at all film orientations for day/night consistency and extremely high levels of visibility.
- **Reduced application time** - Single-layer construction does not require edge sealing and removes easier than open-cell constructions.
- **Easy to Handle** - NEW Easy Apply liner allows for easy air release while the film conforms to simple curves for stress-free vehicle application.
- **Exceptional Durability** - Designed to withstand normal vehicle maintenance (including pressure washing) with up to 7 years of vertical durability for standard colours (3 years for fluorescent).
- **Printability** - V-8000 White (only) can be printed with eco-solvent, latex and UV inkjet technology with up to 5 years vertical ICS Warranty when protected with DOL 6460.



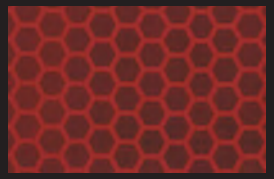
V-8000
White



V-8005
Blue



V-8007
Green



V-8008
Red



V-8013
Fluro Yellow-Green



V-8014
Fluro Orange

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AMBULANCE
Together
AMBULANCE
St John
Pride
1ENE 383

# Vehicle: V-4000

Avery Dennison V-4000 Series is a range of inkjet printable glass bead retroreflective films designed for vehicle graphics where engineer-grade retroreflectivity, long-term durability and good conformability are required. The V-4000 series is available in a range of colours in both Permanent (StaFlat) and Easy Apply (EA RS) versions to suit a wide range of vehicle applications including fleet branding, emergency services & construction/mining vehicles.

**Permanent (Staflat) Only:**

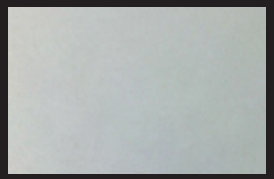
- **Clear Permanent Adhesive** - Strong permanent adhesive strength for long-term applications

**Easy Apply (EA RS) Only:**

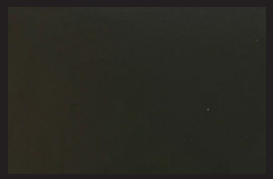
- **Easy Apply Adhesive** - Clear Permanent Adhesive with Easy Apply air release channels for quick application.
- **RS™ Technology** - Additional slide ability and ease of positioning for complex applications.
- **Long-Term Removability** - Removability with heat, up to 5 years with little or no adhesive residue.

## Key Features & Technology

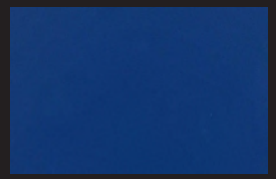
- **High Impact Retroreflectivity** - Efficient glass bead technology meets ECE 104 Class D/E (EU vehicle retroreflectivity) standards to provide bold day/night colour consistency.
- **Excellent Conformability** - Designed for application to compound curves and over rivets to suit a vast range of fleet applications
- **Chemical Resistance** - Resistant to most mild acids, alkalis, and salt solutions
- **Extreme Durability** - Up to 6-year ICS Warranty when protected with Avery Dennison Cast & Polyurethane laminates.
- **Stunning Printability** - White only; printability across all digital print platforms (latex, solvent, eco-solvent and UV inkjet)



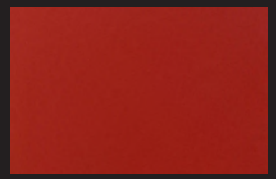
V4000-101 White
Permanent
Easy Apply RS LTR



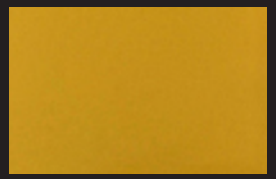
V4000-190 Black
Permanent
Easy Apply RS LTR



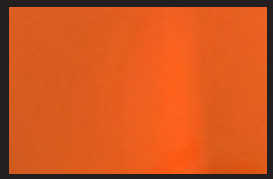
V4000-650 Blue
Permanent
Easy Apply RS LTR



V4000-450 Red
Permanent
Easy Apply RS LTR



V4000-250 Yellow
Permanent
Easy Apply RS LTR



V4000-350 Orange
Permanent
Easy Apply RS LTR

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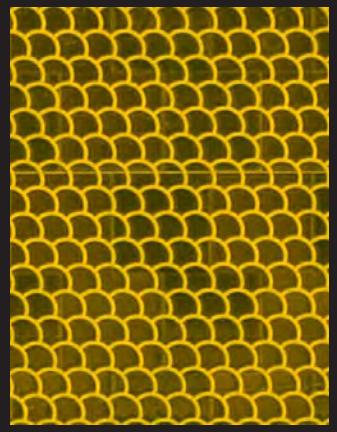
# Conspicuity Tapes

## Reflective Films

Avery Dennison® Conspicuity Tapes are designed for easy night-time vehicle recognition and increased road safety. The V-6700B Series conspicuity tapes meet the stringent requirements of the ECE 104, Class C regulation (EU conspicuity tape standard). This film is manufactured as a solid construction meaning edge sealing is a thing of the past and a specially formulated low-application temperature adhesive. By special request, this solid construction tape is also available in our flexible V-6790 Series which is die-cut to increase the durability of the film and a high-tack adhesive for adhesion to PVC truck curtains.



V-6700B (Rigid)
V-6790 (Truck Curtain)
White



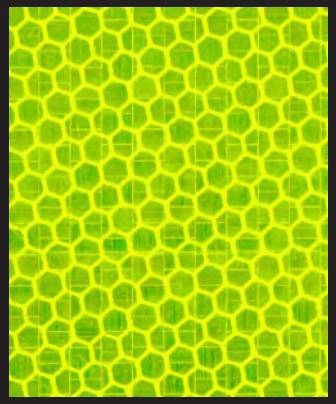
V-6701B (Rigid)
V-6791 (Truck Curtain)
Yellow



V-6722B (Rigid)
V-6792 (Truck Curtain)
Red

## Worksite Reflective Tapes

Manufactured from our unique Omnicube Fluoro Yellow/Green film, this tape incorporates Class 1100 retroreflectivity for increased utility/mining vehicle visibility on any work site. These tapes are pre-edge sealed to allow for quick application and increased durability by protecting against water, dirt and other contaminants penetrating the film.



T-11513
Fluoro Yellow-Green



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For an actual production colour, please contact your Avery Dennison sales representative.

Email us at **graphics@ap.averydennison.com** or reach out on our social channels

AveryDennisonGrsAnz @adgraphics_apac graphicsap.averydennison.com

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