



**Driving road safety in
the right direction.**

Safe, visible road signs, now and in the future.

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Retroreflective Sign Sheeting

3M pioneered the development of retroreflective sign sheeting over 75 years ago and continues to meet today's requirements with long-lasting and effective signs that help get drivers safely where they're going. Explore our full range of visibility performance levels to meet the needs of your specific application:



Engineer Grade Sheeting

Ideal for non-critical traffic signing and devices

- ▶ An affordable choice for non-critical traffic signs.
- ▶ Best Usage: Parking and recreation signs

Standards:

- ▶ Class AS/NZS 1906.1 Class 100

High Intensity Prismatic Sheeting

Intermediate reflectivity

- ▶ Traffic signs, work zone devices and delineators
- ▶ Best Usage: General traffic control signs in non-disadvantaged positions and street name blades.

Standards:

- ▶ Class AS/NZS 1906.1 Class 400

3M™ Diamond Grade™ DG³ Sheeting

Maximum total reflected light

- ▶ Higher luminance for larger angle, long-distance visibility
- ▶ 3M™ Diamond Grade™ DG³ Reflective Sheeting returns almost 60% of the available light to vehicle drivers—about double that of our high intensity prismatic reflective sheeting.
- ▶ Best Usage: Ideal for high truck traffic, multi-lane roads or for disadvantaged signs or where there is high sign clutter/interference.

Standards:

- ▶ Class AS/NZS 1906.1 Class 1100

3M™ Diamond Grade™ DG³ Sheeting

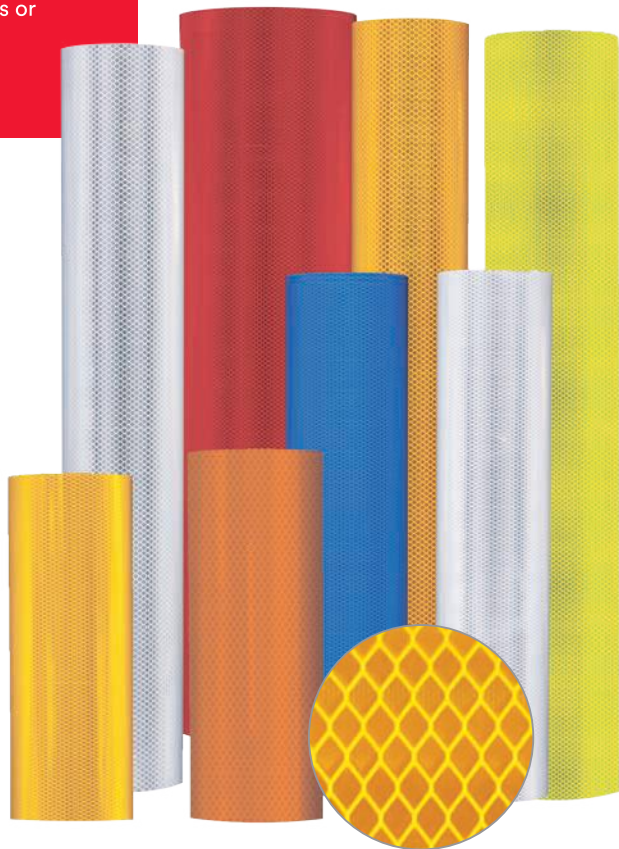
Best applications:

1. Ideal for critical regulatory signs such as Stop, Give Way, Roundabout and Keep Left.
2. High truck traffic routes, multi-lane roads, disadvantaged signs or where there is high sign clutter/interference.
3. Signs on sharp bends that require excellent retroreflective performance such as directional, hazard signs and chevrons.

Maximum total reflected light.

3M™ Diamond Grade™ DG³ Reflective Sheeting Series 4000

- Exceptional performance in short, medium and long viewing distances with 3M Innovative full cube technology.
- Meets the highest overall retroreflectivity requirements in AS/NZ 1906.1 Class 1100.
- Optimal performance in the most challenging environments, where and when drivers need it most.
- Performance warranted for up to 12 years.*



4090 White



4095 Blue



4081 Fluorescent Yellow



4091 Yellow



4092 Red



4083 Fluorescent Yellow/Green



4084 Fluorescent Orange

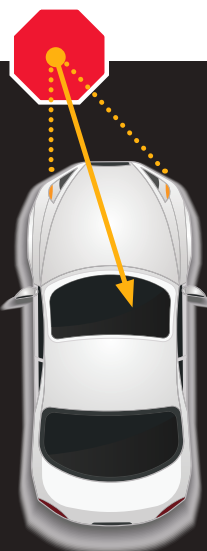


* For full details of the 3M Extended Warranty for Permanent signs, visit www.3M.com.au/roadsafety or www.3M.co.nz/roadsafety



3M Full Cube Technology

When you can almost double the average effective brightness of road signs, visibility and safety are a natural result. Of the three technologies used on roadways today, only fully reflective micro prismatic cube-corners—or 3M full cube technology are the most efficient.



14% Encapsulated glass bead sheeting:
Reflects 14% of light back to source

32% Truncated cube corner sheeting (most common):
Reflects about 32% of light back to source








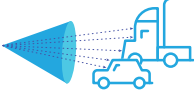


58% 3M™ Diamond Grade™ DG³ Reflective Sheeting with 3M full cube technology:
Reflects 58% of light back to source

Why upgrade to 3M™ Diamond Grade™ DG³ Sheeting?

Brighter signs, safer roads. You can make a difference during the day, and especially at night, by using 3M Diamond Grade DG³ Reflective Sheeting to make signage brighter and more visible, giving drivers more time to react. Let's compare.

3M™ High Intensity Prismatic

3M™ Diamond Grade™ DG³

Luminance		Intermediate Luminance		Maximum luminance Returns nearly twice the amount of light as Type IX with 100% efficiency
Specification and standards		Mid to High performance standards AS/NZS 1906.1 Class 400		Highest performance standards AS/NZS 1906.1 Class 1100
Sight distance		Performs best at Short distances		Optimized for all distances
Retro reflective efficiency		Intermediate Retroreflection 32% Retroreflection efficiency		Highest Retroreflection 58% Retroreflection efficiency optimized for large and small vehicles
Retro reflective technology		Truncated cube technology Reflects more light than glass-bead technology found in some engineer grade sheeting		Full cube technology Reflects more light than truncated cube corner and glass-bead technology found in lower-grade sheeting



Don't get "accidentally downgraded"

Many traffic sign manufacturers already use Class 1100 sheeting, even when road authorities' specifications might only call for Class 400 or 900. That's why those who are committed to achieving the highest possible traffic safety outcomes know that the technology in 3M™ Diamond Grade™ Sheeting provides solutions to help make roadways safer.



Make bright the standard

Upgrade your specifications to Class 1100 by using 3M™ Diamond Grade™ Sheeting to deliver bright visible signs that will help provide the best driving experience for all drivers on the road. Signs will remain bright with lasting durability, in both urban and rural areas.

3M™ High Intensity Prismatic Reflective Sheeting

Best applications:

General traffic control signs in non-disadvantaged positions, such as left handed signs and street name blades.

Intermediate reflectivity for regulated applications.

3M™ High Intensity Prismatic Reflective Sheeting Series 3930

The reflective sheeting you need to meet most common middle grade performance standards.

- Excellent for general traffic control signs in non-disadvantaged positions.
- Meets AS/NZ 1906.1 Class 400.
- Warranted for up to 10 years*.



3930 White



3932 Red



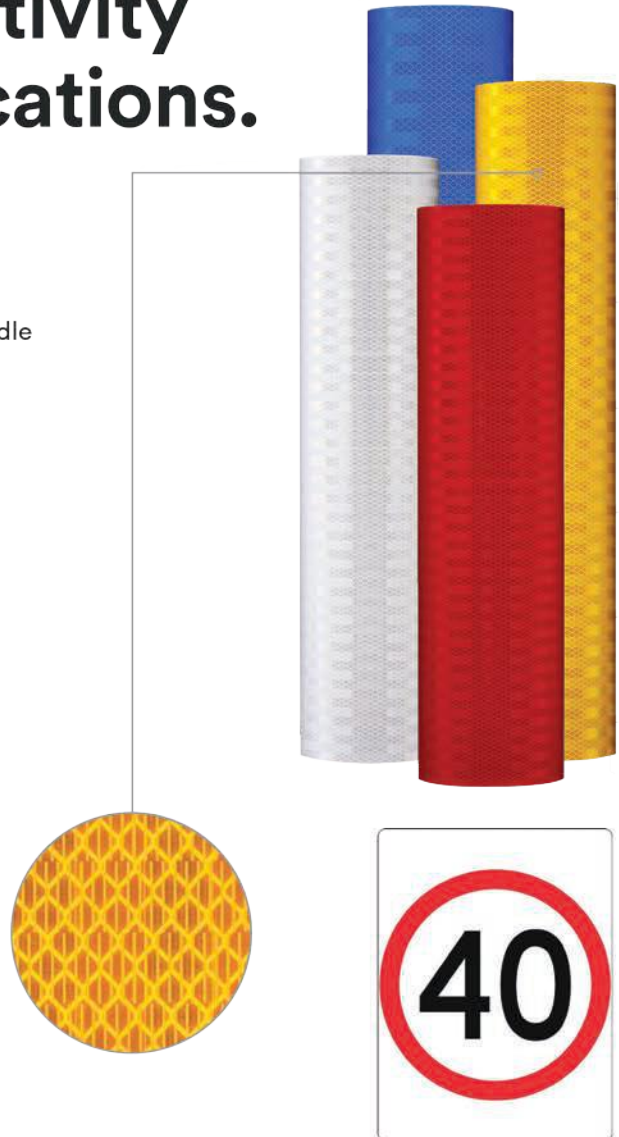
3931 Yellow



3935 Blue



3923 Fluoro Yellow Green



* For full details of the 3M Extended Warranty for Permanent signs, visit www.3M.com.au/roadsafety or www.3M.co.nz/roadsafety

On the road to the future.

The transportation industry is dramatically changing and autonomous vehicles will soon be on our roads. That's why we're already innovating smart sign technology and more robust pavement markings to help guide the vehicles of the future.



3M™ Engineer Grade Reflective

Best applications:

Parking signs and commercial applications.

Excellent visibility and uniformity — day and night.

3M™ Advanced Engineer Grade Prismatic 7600 Series

- > Make your class 100 and other non-critical signs stand out day and night with this bright white and durable reflective sheeting.
- > Meets AS/NZS 1906.1 Class 100.



White - 7610

3M™ Advanced Engineer Grade Prismatic 7300 Series

- > Bright white for visibility and eye catching graphics.
- > Meets the retro reflective performance of AS/NZS 1906.1 Class 100.



White - 7310



Yellow - 7311

3M™ Utility Grade Beaded 610 Series

- > Enclosed lens sheeting with a clear pressure sensitive adhesive and easy release liner.



White - 610-10



Red - 610-12



Yellow - 610-11



Blue - 610-15



Best Applications

No Stopping, Parking, Safety and Community Signs.



Best Applications

Commercial and Safety Signs, Pressure sensitive stickers.

* For full details of the 3M Extended Warranty for Permanent signs, visit www.3M.com.au/roadsafety or www.3M.co.nz/roadsafety



Protect and enhance your traffic signs.

3M™ ElectroCut™ 1170 Series

Get reliable compliance to daytime and nighttime color specifications on 3M prismatic sheetings.

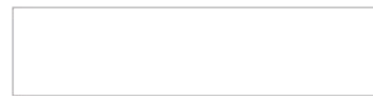
- Protects surface from environmental contaminants and UV degradation.
- Transparent, acrylic, coloured film used for application over 3M Reflective Sheeting to produce durable sign backgrounds, copy, and logos.
- Warranted to match sheeting performance.



1171 Yellow



1175 Blue



1170 Clear



1172 Red



1179 Brown

Drive down replacement costs while protecting public safety.

Protect and enhance traffic sign images.

3M™ ElectroCut™ Film Series 1160i

- Premium UV and anti graffiti overlamine.
- Resists graffiti penetration by commonly used sprays, paints, markers, crayons and stickers.

3M™ ElectroCut™ Film Series 1170C UV

- Premium UV protection overlamine.
- Resists common graffiti.





3M™ Road Work Safety Solutions.

3M™ High Intensity Prismatic Sheeting Series 3800

- > Medium to high performance and visibility to alert drivers of upcoming road work zones.
- > Withstands tough weather conditions.
- > Meets AS/NZS 1906.1 Class 400T



3830 - White



3831 - Yellow



3824 - Fluorescent Orange



3M™ Flexible Prismatic Retroreflective Sheeting 3310i.2 and 3340i.2 Series

- > Meets AS/NZS 1906.1 Class 400T
- > 3M Flexible Prismatic Sheeting Series 3310i.2 and 3340i.2
- > 3340i Impact resistant, reboundable sheeting designed for PVC traffic cones and similar traffic control devices
- > 3310i Impact resistant, reboundable sheeting designed for traffic barrels, drums, and similar channelizers
- > Optimized for application on low-energy surfaces
- > Repositionable for accuracy of application



Worry free warranties.

3M™ MCS™ Warranty for Traffic Signs on HP 360/365/730/830/1500 Printers

You need great looking signs that perform to the highest specifications and we've got you covered with warranties that put your mind at ease. 3M™ MCS™ Warranties provide you a system of matched components to meet your needs for producing regulated and signage.

Whichever imaging method you use, you can be confident your signs will perform as expected.



3M™ MCS™ Warranty

As a world leader in weathering test standards, we use science, technology and innovation to help ensure your finished sign will perform for its intended life.

SAi's FlexiPRINT Authorized 3M™ Traffic Edition is the required software to produce warranted permanent signage. This is a complete design application that makes traffic sign design and print easy and accurate.



3M™ MCS™ Warranty for Traffic

Our premier warranty provides you with top of the line coverage for regulated, finished signs. When you use 3M traffic sign materials, you get all the benefits of the 3M™ MCS™ Warranty, plus guaranteed traffic colors and retroreflectivity retention.

Contact your representative for accreditation details.

3M™ MCS™ Warranty for Traffic

Our premier warranty provides you with top of the line coverage for regulated, finished signs. When you use 3M traffic sign materials, you get all the benefits of the 3M™ MCS™ Warranty, plus guaranteed traffic colors and retroreflectivity retention.

3M™ MCS™ Warranty

Get protection for almost any application with a comprehensive non-regulated, finished sign warranty. We've got you covered beyond regulated signs, to cover almost all finished signs you might create.

Software to produce Traffic signs HP 360/365/730/830/1500 Printers

SAi's FlexiPRINT is the required software to produce warranted permanent traffic signage. This is a complete design application that makes traffic sign design and print easy and accurate.

Warranty Coverage Comparison*



3M™ MCS™ Warranty

For non-regulated, finished signs using all 3M durable traffic sign products.

3M™ MCS™ Warranty for Traffic

For regulated, finished signs using all 3M durable traffic sign products.

Physical Defects in 3M Product	Obvious Damage for any reason	✓	✓
Manufacturing Defects	Visual Defects	✓	✓
	Adhesive Defects	✓	✓
	Adhesion Failure on Recommended Substrates	✓	✓
Printing Defects and Ink Performance	Image Defects When Printing	✓	✓
	Excessive Image Fading	✓	✓
	Image Cracking, Cracking or Peeling	✓	✓
	Blistering	✓	✓
	Excessive Dimensional Change	✓	✓
Cutting Defects	Clean Cutting and Weeding	✓	✓
Traffic Colors	Daytime and Nighttime	✓	
Retroreflection	Retention	✓	

Visit [3M.com.au/roadsafety](https://www.3m.com.au/roadsafety) for full warranty information.



Reflective Film Color Card
Reference Guide

Reflect your brand - day and night

Let your cars, trucks and vans deliver your brand messaging brilliantly around the clock for years to come. 3M™ Scotchlite™ Reflective Graphic Films for vehicle graphics are dazzling by day and bright by night.

3M Scotchlite™ Removable Reflective Graphic Film with Comply™ Adhesive Series 680CR

- > Printable, enclosed lens reflective vinyl with a clear, removable Comply adhesive and PE coated kraft liner
- > For vertical, flat, curved or corrugated surfaces, with or without rivets
- > Up to 8 years unprinted vertical durability
- > Suitable for solvent, eco-solvent, UV-curable and latex
- > Comply adhesive for easy and fast bubble-free installations
- > Similar daytime and nighttime appearance that retains most of its reflectivity when wet
- > For use with overlamine 8518, 8519, 8993, 85489 & 8549L

3M Scotchlite™ Removable Reflective Graphic Film with Comply™ Adhesive Series 780mC

- > 6.6-mil, flexible, enclosed lens, retroreflective available in white only
- > Excellent retroreflectivity at wider viewing angles
- > Pressure-activated adhesive for easy sliding and tacking, snap-up and repositioning
- > Suitable for solvent, eco-solvent, UV-curable and latex
- > Flexible, conforms to compound curves, corrugations, and rivets
- > Includes Comply Adhesive for fast, easy bubble-free installations
- > Expected Performance Life of 9 years (unwarranted period for unprinted film with no graphic protection, applied to a flat, vertical, outdoor surface)
- > For use with 3M overlaminates 8548G & 8549L



Dazzling by day and bright by night.

Get the speed of application you need with this versatile reflective film that features pressure-activated Comply™ Adhesive with air release. It's available in a wide variety of colors for both digital and screen printing. Removable adhesive.



Road trauma is a big issue

ROAD TRAFFIC INJURIES PLACE AN IMMENSE BURDEN ON HOSPITALS & HEALTH SYSTEMS



5th LEADING CAUSE OF DEATH BY 2030

Unless action to curb the road toll is effective, road traffic injuries are predicted to become the fifth leading cause of death in the world by 2030.¹

We're working on the science of safer roads to get everyone home safe.

3M Signs help save lives. Make it count.

Your community, family and friends are relying on your decisions to be the safest ones.

Signs are one of the most cost-effective treatments to reduce incidents in your community.

Benefit Ratio of Traffic Control Devices

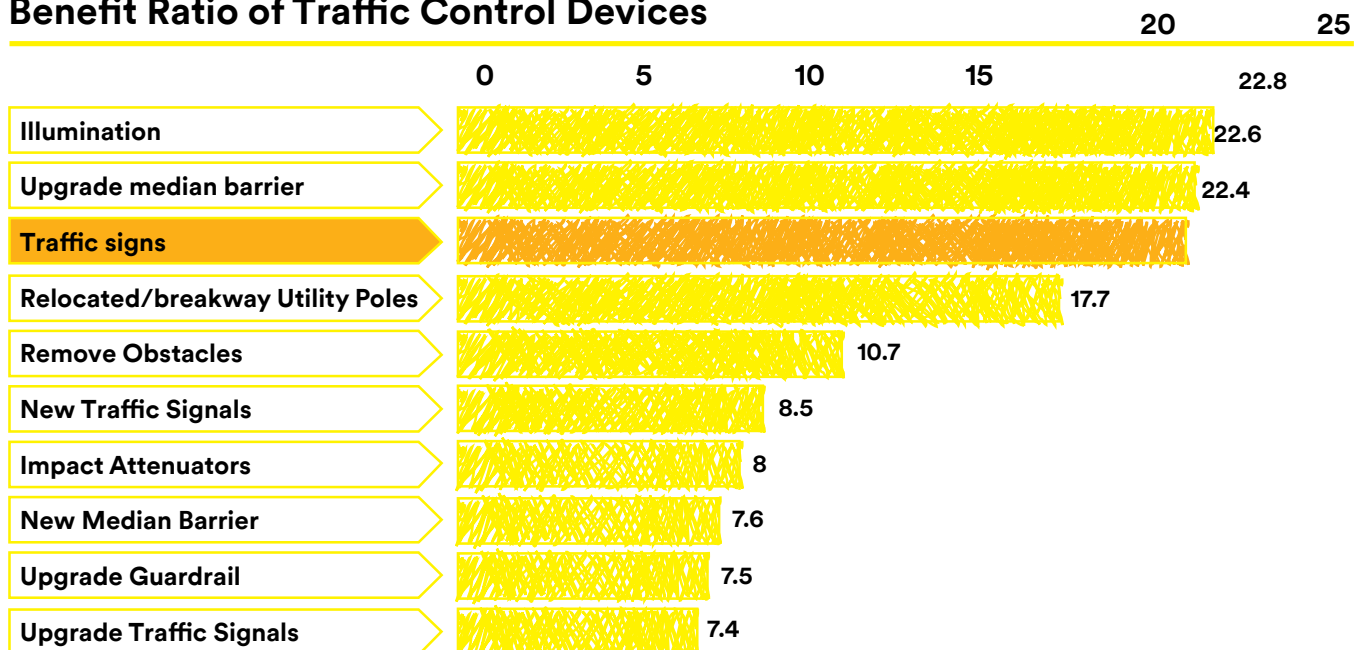
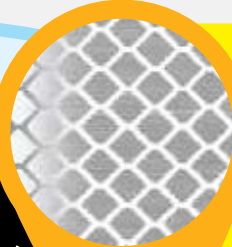


TABLE IV-7, Highway Safety Improvements With The Highest Benefit-Cost Ratios 1974-1995, United States FHWA

1. Road Safety Facts. Asirt Association for safe international road travel, viewed 23 November 2016, <<https://asirt.org/Initiatives/Informing-Road-Users/Road-Safety-Facts>>

Do your signs comply?

AS/NZS1906.1-2017 Quick Overview



**Class
1100**

3M™ Diamond Grade™ DG3 Series 4000

Attributes of product:

Provides both wide entrance and observation angle performance from long to short distances.

Best usage:

Ideal for high truck traffic, multi-lane roads or for disadvantaged signs. Or where there is high sign clutter / interference.

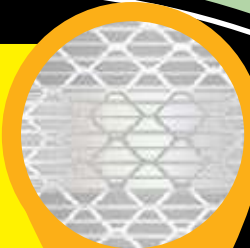
3M™ High Intensity Prismatic Series 3930

Attributes of product:

Good general use sheeting, for single lane carriage way with predominately car use.

Best usage:

Left hand mounted signage and street name blades.



**Class
400**

3M™ Engineer Grade Prismatic Series 7600

Attributes of product:

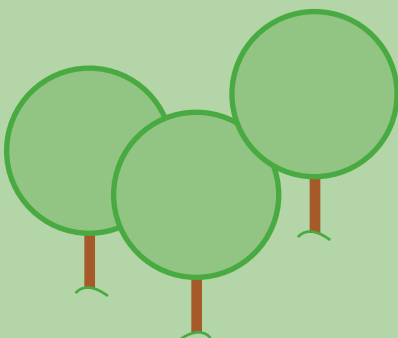
Low level reflective sheeting used where sign information is of low importance.

Best usage:

Parking signs and commercial applications.



**Class
100**





3M Reflective Conspicuity Tapes Enhance Vehicle Safety.

3M™ Vehicle Visibility Reference guide.

When trucks, trailers and other large commercial vehicles are more reflective, they're easier for other drivers to see at a distance. Help increase the visibility and safety of your vehicles and minimise down time with 3M™ Diamond Grade™ Reflective Tape. In doing so you will be reducing the chance of an accident by up to 30 times¹.

ECE104 regulation explained

ECE104 is a regulation that establishes guidelines for the use of retro-reflective safety markings on heavy goods vehicles operating throughout Australia and New Zealand.

Australia: Retro Reflective markings are recommended by Australian Design Rule 13/00 for Vehicle Standards and under the ATA Industry Technical Advisory Procedure for Heavy Vehicle Visibility.

New Zealand: Retro Reflective markings recommended by NZTA under "Land Transport Rule: Vehicle Lighting".



Required Vehicles:

- ▶ Trailers with Gross Vehicle Weight over 3,500 kg.
- ▶ Goods vehicles and trailers over 6 m long and over 2.1 m wide.



983 Series

3M Diamond Grade™ Reflective Tape

For applications on rigid-sided vehicles.

- ▶ Eight years expected lifetime



983S Series

3M Diamond Grade™ Reflective Oval Tape

For applications on tanker vehicles.

- ▶ Five years expected lifetime



1. Prof. Dr. -Ing. H.-J.Schmidt-Clausen, Laboratory of Lighting Technology, Darmstadt University of Technology: Contour Marking of Vehicles, Final Report FO 76/00. 2. Darmstadt University of Technology, Report. 2000.

3M Reflective Tape Selector Guide

In addition to helping save lives, conspicuity markings can help save money too.

While the safety benefits of conspicuity markings on heavy vehicles are easy to see, it is also worth noting how those crash reductions translate into economic value. While most studies rightly focus and report primarily on the number of injuries and fatalities prevented, the associated reduction in costs for healthcare and the replacement of damaged property can further justify the investment in retroreflective marking solutions and ultimately improve the bottom line.

3M Code	Product Code	Colour	Size	UN/ECE 104 identification markings	Edge Sealed	Suitable for rear of tankers	Suitable for mining and site construction vehicles
7100213255	983-10	White	53.5mm x 50m	✓	✓		
7100005167	983-10	White	50.8mm x 45.7m		✓		
AR010596575	983-10	White	50.8mm x 15m		✓		
AR010613594	983-10	White	50.8mm x 3m		✓		
7100206466	983-71	Yellow	53.5mm x 50m	✓	✓		
7100005169	983-71	Yellow	50.8mm x 45.7m		✓		
AR010613602	983-71	Yellow	50.8mm x 3m		✓		
7100199356	983-21	Fluorescent Yellow	53.5mm x 50m	✓	✓		
7100141813	983-23	Fluoro Yellow/Green	101mm x 45.7m		✓		✓
7011387987	983-23	Fluoro Yellow/Green	76mm x 45.7m		✓		✓
7100141809	983-23	Fluoro Yellow/Green	50.8mm x 45.7m		✓		✓
AR010602308	983-23	Flouro Yellow/Green	76mm x 15m		✓		✓
AR010602290	983-23	Flouro Yellow/Green	50.8mm x 15m		✓		✓
AR010613628	983-23	Flouro Yellow/Green	50.8mm x 3m		✓		✓
7100213254	983-72	Red	53.5mm x 50m	✓	✓		
7100005166	983-72	Red	50.8mm x 45.7m		✓		
AR010596591	983-72	Red	50.8mm x 15m		✓		
AR010613610	983-72	Red	50.8mm x 3m		✓		
7000070253	983-10S tanker oval	White	52mm x 45.7m	✓	✓	✓	
7000070254	983-72S tanker oval	Red	52mm x 45.7m	✓	✓	✓	



White
Product Code: 983-10



Yellow
Product Code: 983-71



Red
Product Code: 983-72



Fluorescent Yellow/Green
Product Code: 983-23

Colour Guide for Heavy Vehicles

Location on vehicle	Colour(s) Permitted
Front	White
Sides	Yellow, White or Fluorescent Yellow
Rear	Red or Yellow



Scan here to request an E Book

Reflective Tape Application Guide

Recommended Layout - Full Contour

Reflective tape is applied as close as possible to the edge of the vehicle to form a continuous line, depicting the outline of the vehicle. This provides maximum visibility to other road users and is best practice.



Partial Contour

A single strip of retroreflective tape is applied along each side and the rear of the body or trailer, with 'L' shape sections 0.5m long in each corner.



Colour guide for heavy vehicles

Location on Vehicle	Colour(s) Permitted
Front	White
Sides	Yellow, White or Fluorescent Yellow
Rear	Red or Yellow

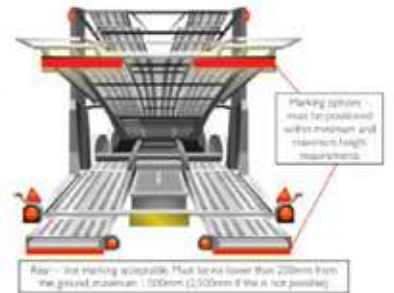
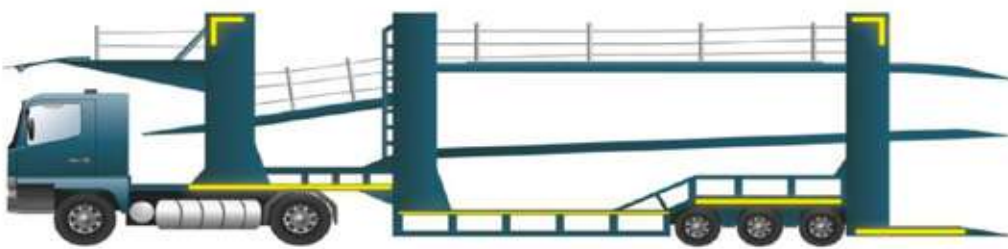
Tanker



Concrete Mixer



Car Carrier



Skip Loader



Rubbish Truck



Rigid with tray





Safer Emergency Response.

We don't know when, where or what the next emergency will be, but we do know it will occur. Personnel who are on the front line of response, cleanup and relief need maximum visibility to keep them safe while keeping us safe.



3M provides safety solutions that are a vital component of emergency response. We supply a wide variety of products such as respirators, high visibility material, communications equipment, hearing protection, head, eye and face protection, sorbents and identity management solutions.

To help protect emergency personnel, it is essential that their clothing and vehicles remain highly visible in all types of weather, 24 hours a day.

High visibility markings on emergency vehicles save lives. Whether at the scene of an emergency, or manoeuvring through the traffic to get there, it's essential that emergency vehicles are quickly recognised and readily identified.

3M offers a comprehensive range of reflective products to improve visibility of fire, ambulance, police and other emergency trucks, vans and cars.



Mining Site Safety.

In mining operations, ensuring large haul trucks can see light vehicles is crucial for safety.

3M™ Diamond Grade™ DG3 Series 4083ES Markings meet the AS/NZS 1906.1 Class 1100 reflectivity specifications at all angles. Drivers of large trucks are in a disadvantaged position due to sitting at greater distance to their headlights requiring a wider cone of returned light to help them see light vehicles and other hazards.

The observation angle common for haul trucks is 1° observation angle. At this angle the 4083ES meets the elevated Class 1100 standard of reflectivity and delivers more than 3 times more light than class 400 on head on and oblique viewing angles.

4083ES

- 3M Diamond Grade™ prismatic construction providing outstanding visibility in short and long distances
- Class 1100
- Edge Sealed
- Application on rigid substrates
- Suggest application on light mining vehicles (Utes, Pickup Trucks, Sedans and SUVs)

How to make small mining pickup trucks more visible to drivers of dump trucks?

Drivers of large haul trucks are in a disadvantaged position due to sitting at greater distance to their headlights requiring a wider cone of returned light to help them see pickup trucks and other hazards. 3M™ Diamond Grade™ DG3 Series 4083ES reflective is a true wide-angle reflective tape that can help support the needs of mining haul truck drivers most optimally and at 1° observation angle deliver 3 times more light than class 400 reflective tapes.

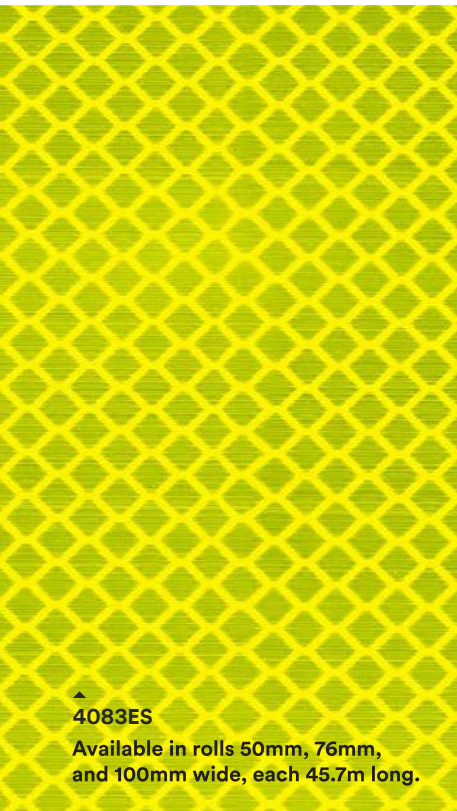
Cone of Retro Reflection

Haul truck drivers deal with 1° to 4° degree of observation angles from 200m to 50m of approaching a hazard.



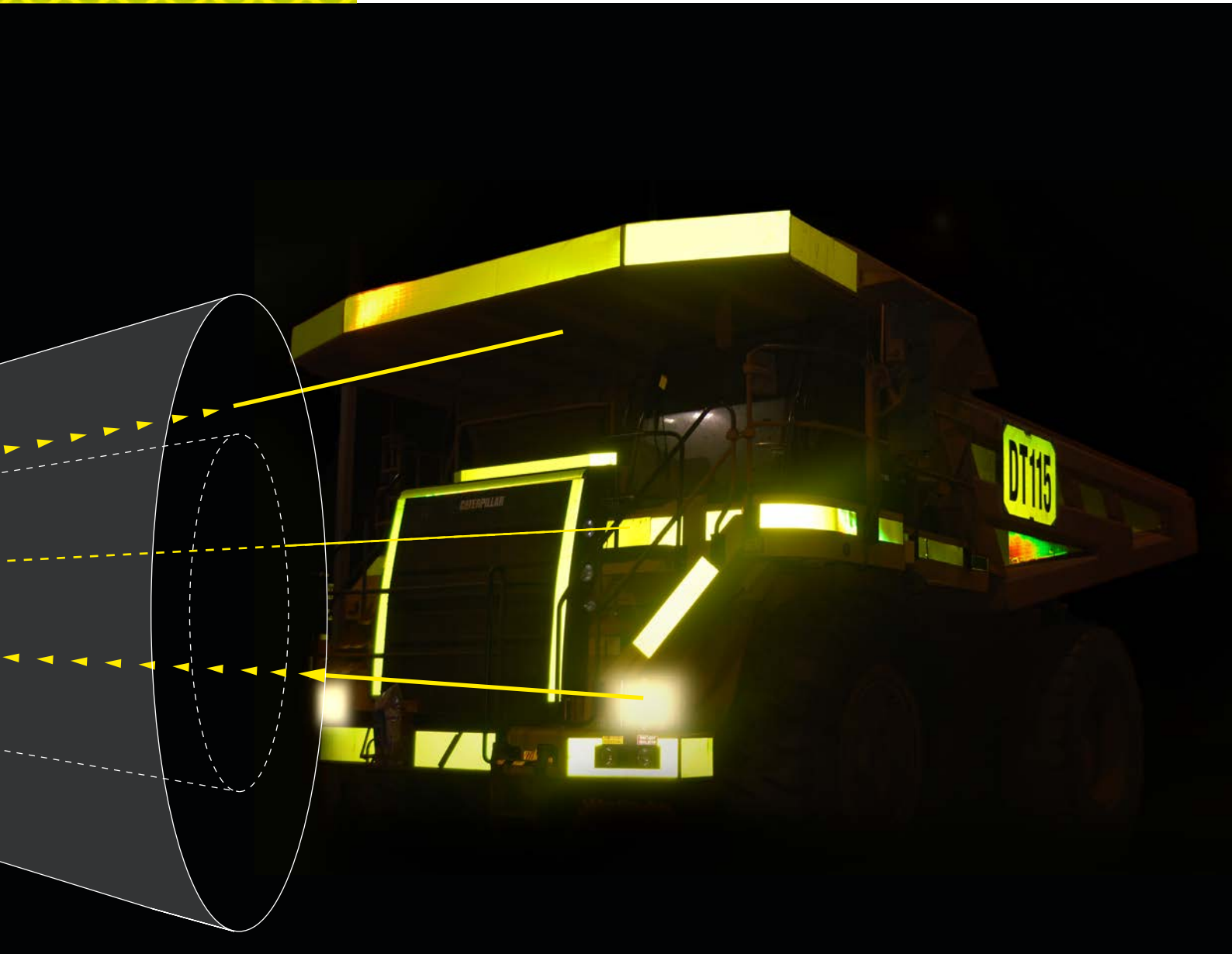
Class 1100 returning a wider cone of light back to haul truck

Class 400 returning light back



▲
4083ES
Available in rolls 50mm, 76mm,
and 100mm wide, each 45.7m long.

1. 4083ES is a true wide-angle conspicuity marking that can support the needs of mining haul truck drivers most optimally. Dump truck drivers deal with 1° to 4° degree of observation angles for 200m to 50m of approaching a hazard.
2. All conspicuity tapes face the cut-off in visibility when approaching a hazard with reflective tape. These cut off distances can be made shorter and closer to the hazard by applying Class 1100 tapes instead of Class 400 tapes.
3. The visibility cut-off distance reduction could be critical for the largest of mining dump trucks. Due to tall seating positions for the drivers, this reduction could prove to be life saving in terms of being able to spot other small vehicles at night from shorter distances.



For enquiries please contact your local Spicers representative.

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