

## QBD14 Silver Transfer Film

### Description

Q Brand QBD14 Silver Transfer Film is composed of wide-angle, exposed, retroreflective lenses bonded to a heat-activated polyurethane adhesive for use on high-visibility garments. The reflective surface is protected by a polyester liner; and a polyethylene liner protects the adhesive surface, for ease in handling prior to lamination. QBD14 is specially designed for excellent washing.



### Retroreflective Performance

When laminated onto a garment, QBD14 appears bright white to a driver when viewed in vehicle headlights. It is designed to remain highly reflective even when viewed across wider entrance angles.

QBD14 complies with CSA-Z96 Level 2, ANSI Level 2 and EN 471:2003 Class 2.

### Certifications

The coefficient of retroreflection ( $R_A$ , in cd/lux/m<sup>2</sup>) for QBD14 has been measured as:

Product Number	Daytime Color	Nighttime Color	Initial Average $R_A$ <sup>1</sup>	Minimum $R_A$ <sup>2</sup>	Wash Cycles <sup>3</sup>
QBD14	Silver	White	550	330	50

<sup>1</sup>Measured by +5.0° entrance and 0.2° observation angles as per EN 471:2003

<sup>2</sup>CSA Z96, ANSI/ISEA 107 and EN 471 minimum coefficient of retroreflection for Level 2 retroreflective material

<sup>3</sup>ISO 6330 Method 2A at 60°C (140°F) and  $R_A \geq 100$  cd/lux/m<sup>2</sup>

NOTE: CSA-Z96-09 LEVEL FR minimum  $R_A$  is 65

### Performance

While use of Q Brand QBD14 will enhance visibility, no reflective material can guarantee absolute visibility, particularly in adverse weather conditions or unusually harsh wear conditions. Performance will vary depending upon actual use, exposure conditions, and proper cleaning/maintenance. Users should test reflective material to satisfy conformance to their own requirements.

## Application Instructions:

**Heat Lamination:** Work on a flat surface where uniform heat and pressure can be applied. Avoid applying films over seams and stitches.

1. Place transfer film on fabric (substrate) adhesive side down, and apply heat and pressure as described below. Place a non-stick slip sheet between the platen and laminating surface to prevent any excess adhesive transfer contamination.

2. Allow application to cool to room temperature before removing the polymer liner. Place application on a flat surface and remove the polymer liner by lifting one corner and pulling (about 45° angle) in a continuous, smooth manner. For graphics, pull from upper corner to center, and from opposite lower corner to center.

This recommendation is a general guideline for heat lamination. Other lamination methods such as roll-to-roll and High Frequency (HF) welding can also be used. The proper temperature/pressure/time conditions must be tested for each fabric to ensure adequate adhesion. Many fabrics can be used as lamination substrates; however, nylons and fabrics treated with a durable water-repellent (DWR) finish can be difficult to adhere to and must be tested.

		QBD14
Structure	Cover Film	Polyester
	Releasing Substrate	Polyester/PE
Adhesive	Type	Polyurethane
	Starting Temp for adhesion	135°C (275°F)
Laminating Conditions (Heat Press Machine)	Temperature	> 150°C (300°F)
	Dwell Time (sec)	More than 30
	Pressure (psi)	25-30
Laminating Conditions (Conveyor Fusing)	Temperature	180°C
	Speed (m/min)	2
	Pressure (bar)	4
Texture		Soft
Recommended Fabrics		Cotton Polyester
EN 471: 2003 Washing ISO 6330 2A Method		50 Cycles






**Cutting:** Plotter-cutting is recommended, although film can also be hand-cut, guillotined, kiss-cut or die-cut.

**Printing:** Screen print using Perfectos Ink DE5

## Care and Maintenance Instructions

Q Brand QBD14 may be damaged if cared for improperly. Avoid extreme harsh washing or dry cleaning conditions to maintain optimal performance. Actual life of QBD14 depends of the wash care and wears condition. Care label recommendations:

- Do not apply high alkaline stain removing chemicals (e.g.: paste, salt or heavy duty product)
- Do not use solvent detergents or micro emulsions
- Do not use any bleaching agents
- Do not over-dry. The surface temperature of the reflective should not exceed 120°C

Wash:		Machine wash hot, 60°C (140 °F), PH neutral detergents are generally recommended for washing.
Bleach:		Do not Bleach
Dry:		Tumble dry low
Iron:		Use cool iron, 110 °C (230 °F), Do not use a steam iron
Dry-clean:		Normal cycle: Max solvent temperature: 30°C Max drying temperature: 70°C Max drying time: 15 minutes Max program time: 60 minutes

When handling the products, blemishing can occur if the front surface of the product has direct contact from hands during application and is then exposed to hot and humid conditions greater than 27 °C (80 °F) and greater than 70% relative humidity for a period of weeks. These blemishes do not affect performance of the product. The use of white cotton gloves is recommended in high heat and high humidity environments.

## Product Specifications

Roll Width	Width Tolerance	Standard Roll Length
50mm	± 1mm	100m
1000mm	± 3mm	50m

## Order and Product Information

To order Q Brand Reflective Materials, contact your local Bon-Mar Safety Division representative, or call direct at 1-800-363-2993, or by email at [safety@bon-mar.com](mailto:safety@bon-mar.com)

## Storage and Shelf Life

In order to preserve performance, store in a cool, dry area and use within one year after date of receipt. Store rolls in original shipping cartons. Return partially used rolls to the carton or suspend horizontally through the core. Cut pieces should be stored flat.

### Disclaimer

This information corresponds to our current knowledge on the subject. It is offered solely to provide possible suggestions for your own experimentations. It is not intended, however, to substitute for any testing you may need to conduct to determine for yourself the suitability of our products for your particular purposes.

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