



STANDARD
100

VizLite™
Reflective Materials

Technical Sheet

VizLite™ 205 IW Silver Reflective Material

Product Information

VizLite™ 205 IW Silver Reflective Material is intended for use in the PPE market for the inclusion in High Visibility Warning clothing such as EN ISO 20471:2013 Jackets and Waistcoats to enhance visibility in low light and night time conditions.

Design Features

The fabric is constructed of a layer of microscopic retro reflective glass beads bonded onto a 65% Polyester / 35% Cotton fabric backing.

When a beam of light from an oncoming vehicle meets the material, the light reflects back to the light source and enhances the visibility of the wearer to the vehicle driver.

Product Performance and Certification

VizLite™ 205 IW Silver Reflective Material meets and exceeds the following specifications,

EN ISO 20471:2013 (High Visibility Clothing)

This product is certified by Centro Tessile Cottoniero e Abbigliamento Laboratory in Italy to EN ISO 20471:2013 (High Visibility Clothing) performance levels.

Retro Reflective Performance

VizLite™ 205 IW Silver Reflective Material.

- Meets and exceeds the levels of brightness required under EN ISO 20471:2013
- Is non-orientation sensitive
- Offers excellent feel and smoothness.
- Is washable to 60° C Domestic wash up to 50 wash cycles; 50 cycles tumble dry max temperature 60°C; 92°C Domestic wash up to 50 wash cycles.
- Offers 50 Industrial wash cycles at 75°C with 155° C tunnel finish.
- Is dry cleanable up to 50 cycles with perchloroethylene.

Ecological Performance

VizLite™ 205 IW have been certified by Shirley Technologies in the England to STANDARD 100 by OEKO-TEX®, product class II have shown that the above mentioned goods meet the human-ecological requirements of the standard presently established for products without direct contact with skin.

The certified articles fulfil the requirements of Annexe XVII of REACH (incl. the use of azo-dyes, nickel, etc) as well as the American requirement regarding total content of lead in children's articles (CPSIA)

Product Application

Retro-Reflective warning garments are mainly used in environments where the wearer is working alongside vehicles. These garments improve visibility of the wearer and thus reduce the risk of being struck by a vehicle e.g., highways, railway lines, airports, warehouses, dockyards.

VizLite™ 205 IW is recommended for use in Premium High Visibility garments where appearance and high laundry performance levels are an important requirement.

Product Usage

Cutting

Cuts should be made from the reflective surface and fabric should not be stacked more than 5 cm in height. Fabric is suitable for cutting by

- Hand (using very sharp cutting tools)
- Guillotine
- Die-cut.

Recommended Fabrics

- Polyester or Polyester mix products either woven or knitted with a weight between 150 and 200g/m²
- Not suitable for stretchy fabrics such as Lycra or those containing Lycra as results can be poor.
- All substrate materials should be chosen based on suitability for intended use and laundry properties.



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Sewing

- VizLite™ 205 IW can be applied direct to fabric panels before a garment is sewn together.
- Stitching should be at a distance of 2mm from the edge of reflective material to avoid fraying or curling of the reflective material.
- Where separate pieces of reflective material meet on a garment care should be taken to match the visible appearance.
- Any variations in appearance however will not affect the retro-reflective properties of the reflective material.

Stitching

- A double lock stitch with a maximum 5 stitches per cm is recommended.
- For substrates up to 250g/m² needle size NM80-90 is recommended.
- A Teflon™ coated needle and Pressure foot is recommended to enable a smooth fabric transition.
- Thread tension should be kept to a minimum. Tension on both upper and lower threads must be matched to ensure there is no puckering.
- Thread should be matched to the substrate. All threads should be shrink proof and be suitable for sewing at higher speeds.
- The guide on 2-Needle machines should be set at 1-2 mm above the width of the reflective fabric. This will decrease the chance of puckering caused by a difference in tension between the reflective fabric and the substrate

Storage and shipping

- Rolls should be stored in the packaging they are supplied in.
- Cut pieces should be stored flat.
- Opened rolls should either be stored in their original packaging or suspended by the use of a rod through the middle of the roll.
- VizLite™ 205 IW should be stored in an area that is cool, dry and with low humidity.
- Precautions should be taken to protect the material from coming into contact with perspiration, strong acids, or compounds containing high levels of sulphur or chlorine. Contamination by these substances may affect the aesthetic appearance of the VizLite™ 205 IW material.
- During Transportation and Shipping it is best to keep an ambient condition.

Handling

- VizLite™ 205 IW should be handled carefully in hot and humid conditions.
- The area in which the materials are handled may need the need of cooling or dehumidifying equipment to keep the area cool and dry.
- Avoid the contamination of the product with dirt, grease or solvents as this could produce staining that will affect the retro-reflective qualities of the fabric.

Wash and Care

- VizLite™ 205 IW is designed to be washed at 60°C in a Domestic wash, up to a minimum 50 cycles and at 92°C up to a minimum 50 wash cycles before the retro-reflective qualities are affected.

Stain removal

- VizLite™ 205 IW fabric should be tested for wash conditions before using the material. This can be achieved by mixing a solution of detergent and water and applying with a sponge or cloth to the material. For stain removal of grease or mineral oils, use a clean cloth dipped into white spirits. Wipe clean with water afterwards.
- Chemical splashes should be removed with a clean dry cloth.
- Neutralise splashes of strong acid or alkalis immediately with plenty of clean water.
- Dispose any material that comes into contact with toxic or harmful substances in a safe and responsible manner.

Do not use the following types of products to clean/ treat stains on this product,

- Heavy duty products or stain removal products with a high alkaline content.
- Micro-emulsions or high ph-products
- Bleaches
- Aromatic solvents

The use of the above will affect the lifespan of the retro-reflective material.



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Ironing

- Iron on reverse of material if possible
- Iron using medium heat setting
- Do not use steam

Specialist cleaning and dry cleaning

- The VizLite™ 205 IW fabric is suitable for Industrial laundry methods up to 50 cycles 75° C with 155°C tunnel finish.
- The VizLite™ 205 IW fabric is suitable for dry cleaning up to 50 cycles with perchloroethylene.

Drying

- Line drying is the preferred method of drying
- Can be Tumble dried 100 times max. temperature 60°C
- Suitable for 75°C tunnel finish for Industrial laundry

Maintenance issues

The VizLite™ 205 IW fabric retro reflective properties will be affected by any of the following treatments;

- Coatings or spraying the garment with oils, protective waxes, paints or inks.
- Application of products such as leather spray or waxes.
- Harsh physical application of abrasive wire brushes or sand paper.

High Visibility Warning clothes should be inspected regularly and maintained in good condition. Any signs of wear and tear may affect the performance of the garment in relation to EN 471. If the performance of the retro reflective material falls below $R' = 100 \text{ cd/lx/m}^2$ the garment should be replaced.

General Safety Information

Visibility Limits of VizLite™ 205 IW fabrics

There are various uncontrollable environmental factors that will affect visibility; these include smoke, hail, snow, mist, dust and fog. Fog, smoke, mist, and dust can all affect the dispersal of light from headlights and retro reflective performance.

The VizLite™ 205 fabric is tested for performance during exposure to rainfall, and exceeds the requirements of EN 471 and A1:2007. Brightness levels will return after the material dries out.

The retro-reflective qualities can also be diminished by the wearer depending on issues such as the line of sight, other equipment and obstacles in the working environment, and not wearing the garment fastened. The wearer should be aware of these limitations and take the necessary action.

Important notice to Purchaser / Converter / Wearer

Because of the unlimited variety of potential applications for products, BEFORE product use the converter and/ or product manufacturer must determine that the products are suitable for the intended use and are compatible with other component materials. The Purchaser is solely responsible for determining the proper amount and placement of products. While reflective products enhance visibility, no reflective product can ensure visibility on safety under all possible conditions. Neither Viz Reflectives or any Viz Reflectives authorised converter shall be liable for any incidental, special or consequential damages relating to the use or inability to use the products regardless of legal theory used.