

VizLite® 205HFR/CUT Segmented Flame-Retardant Industrial-Wash Reflective Material

Technical Sheet – Ed. 2019

Product Information

VizLite® 205HFR/CUT is a segmented heat-applied premium reflective tape, which is suitable for fire retardant and/or waterproof clothing that requires an EN ISO 20471:2013 compliant tape, to enhance visibility in low light and night-time conditions, as well as rental garments exposed to industrial laundering.

Design Features

The tape is constructed of a layer of microscopic retro-reflective glass beads bonded onto a Polymer layer, to which a heat activated adhesive is applied.

VizLite® 205HFR/CUT tape comes with a PET protective film on the reflective side and PU liner on the adhesive side to prevent the adhesive from fusing in high temperatures. The PU liner should always be removed prior to heat application.

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

This product is certified by the Notified Body “Centro Tessile Cottoniero e Abbigliamento Spa” (Centrocot), based in Italy, according to the following standards:

- EN ISO 20471:2013+A1:2016 – High-visibility warning clothing
- EN 469:2005+A1:2006 – Protective clothing for firefighting
- EN ISO 11611:2015 – Protective clothing for use in welding and allied processes
- EN ISO 11612:2015 – Clothing to protect against heat and flame
- EN ISO 14116:2015 – Clothing to protect against heat and flame. Limited flame spread materials, material assemblies and clothing

Retro-reflective Performance

VizLite® 205HFR/CUT tape:

- Meets and exceeds the levels of brightness required under EN ISO 20471:2013
- Is non-orientation sensitive
- Offers excellent feel and smoothness
- Is washable at **60°C** domestic wash up to **100 cycles**, including tumble dry at a maximum temperature of 60°C
- Offers **30 cycles** of industrial washing, **75°C** tunnel finish
- Is dry cleanable up to 30 times with perchloroethylene

Ecological Performance

VizLite® 205HFR/CUT has been certified by Shirley Technologies in England to Oeko-Tex Standard 100, product class II, showing that the above-mentioned goods meet the human-ecological requirements of the standard presently established for products with direct contact with skin.

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® 205HFR/CUT is a durable material tested to wash a minimum of 100 washes in a domestic environment so is also suitable for non-occupational applications such as sportswear and clothing for cyclists, children, pets and pedestrians.

Product Usage

Cutting

Cuts should be made from the non-reflective surface and the tape should not be stacked more than 5 cm in height. It is suitable for cutting by:

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

Substrates

The following should be taken into account when applying VizLite® 205HFR/CUT tape to the substrates listed below,

- On Nylon and other Polyamide substrates, heat application is not suitable and results are poor.
- To avoid damage to the surface of coated substrates the lamination temperature may need adjusting to a lower setting.
- The use of substrates which have had a silicon, fluorocarbon or flame retardant finish may result in poor adhesion.

Lamination

The following recommendations for lamination by using a continual belt heat press and are for guidance only. Other methods can also be used such as heat fusing, HF welding etc. Converters should determine which process best suits their application.

For continual heat press e.g. Reliant heat press,

- Nip roller pressure should be even
- Nip roller pressure ideally set at 70psi (approx. 5 bar)
- Machine speed should be set so that the panel is in the tunnel for approx. 12 seconds
- Temperature should be set at 150°C
- Temperature inside of tunnel should be checked used a temperature strip.
- Remove the blue liner if present
- Place the VizLite® 205HFR/CUT tape with adhesive side down on the substrate.
- Do not apply Tape over seams or stitching.
- Delicate fabrics should be protected by placing a siliconised sheet or cloth cover over the tape and fabric during lamination.
- The PET Liner should be split when cold by gently lifting from one corner.

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® 205HFR/CUT tape 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® 205HFR/CUT tape.
- During transportation and shipping it is best to keep an ambient condition.

Handling

- VizLite® 205HFR/CUT tape 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 tape.

Wash and Care

VizLite® 205HFR/CUT tape is designed to be washed at 60°C in a Domestic wash, up to a minimum 100 cycles before the retro-reflective qualities are affected. However the following domestic washing instructions should be closely followed;

- Do not pre-soak
- Do not use a pre-wash program
- Recommended wash program is for coloured clothing wash
- Do not wash at a higher temperature than 60°C

- Recommended wash Temperature is 30-60°C
- Maximum Program time 50 minutes
- Maximum wash time at highest wash temperature 12 minutes
- Domestic washing powders for delicate and coloured fabrics are recommended

Stain removal

VizLite® 205HFR/CUT tape should be tested for wash conditions once applied to the substrate. This can be achieved by mixing a solution of detergent and water and applying with a sponge or cloth. 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 garment;
- 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.

Ironing

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

Specialist cleaning and dry cleaning

- VizLite® 205HFR/CUT tape is suitable for industrial laundry methods up to 30 cycles at 75°C and tumble dry at 60°C
- VizLite® 205HFR/CUT tape is suitable for dry cleaning up to 50 cycles with perchloroethylene.

Drying

- Line drying is the preferred method of drying
- This product can be tumble dried at a maximum temperature of 60°C

Maintenance issues

VizLite® 205HFR/CUT tape's retro-reflective properties will be affected by any of the following treatments:

- Coating 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 ISO 20471:2013.

If the performance of the retro-reflective material falls below $R = 100 \text{ cd/lx/m}^2$ the garment should be replaced.

Product Disposal

VizLite[®] 205HFR/CUT tape can be disposed of on the garment. The product can be incinerated in a commercial or industrial facility or sent to a landfill site.

General Safety Information

Visibility Limits of VizLite[®] 205HFR/CUT

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.

VizLite[®] 205HFR/CUT tape is tested for performance during exposure to rainfall, and exceeds the requirements of EN ISO 20471:2013. 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 Prealux nor any Prealux 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.