

Description

ORALITE® FTP 2151 Segmented (FTP 2151S) is a thin and flexible fluorescent lime retroreflective fire tape designed for heat application onto EN 469:2005 Protective Clothing for Fire-Fighters offering superior reflectivity and durability under today's most demanding fire-fighting conditions.

A smooth sealed outer surface provides superior performance in the critical areas of abrasion resistance, wet performance and cleanability.

Product Construction

ORALITE® FTP 2151S is composed of cube corner (microprism) retroreflective elements integrally bonded to a flexible, smooth-surfaced tough and weather resistant UV stabilised polymeric film. The prism surfaces are metallised to provide a mirror surface to the prism facets. The product comes with a heat activated adhesive on one side and an application liner on the other side for smooth removal after application.

Product Features

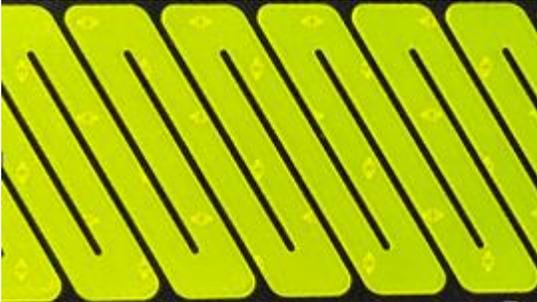
- **Mono-layered construction**
For added durability and performance
- **Reflects color**
Reflective colors are more conspicuous than white/silver especially in urban environments.
- **Edge-to-edge reflectivity**
FTP 2151S reflects across the entire width of the tape. The larger reflective area provides more visibility across the whole tape and offers superior visibility in low light conditions.
- **EN ISO 20471 Compliant**
Full width compliant to EN ISO 20471:2013
- **Clean ability**
Smooth sealed outer surface easily wipes clean
- **Superior abrasion resistance**
The smooth sealed outer surface of FTP 2151S protects the reflective elements from surface abrasion and ensures that the reflective elements work under all fire scene conditions.
- **Retroreflective Performance in rainfall**
The highest level of retroreflective performance in wet conditions due to the micro prismatic construction
- **Breathability**
The segmented design provides added comfort to the wearer as it is more flexible and has less weight while still maintaining a high level of retroreflective performance in dry and wet conditions.
- **Application**
The tape is attached to the garment by heat transfer compared to the traditional sew-on method.

Product Approvals

The product is fully compliant with specifications:
EN ISO 20471:2013
EN 469:2005

Test certificates for garment CE mark acquisition are available upon request

Visual Appearance



Colour

ORALITE® FTP 2151S is available in fluorescent lime, offering outstanding night-time visibility through reflected colour similar to that of its daytime appearance.

Retroreflectivity

ORALITE® FTP 2151S can be used on EN ISO 20471:2013 high visibility garments and exceeds the minimum reflectivity requirements of EN ISO 20471:2013 separate performance when tested in accordance with the procedures in EN ISO 20471.

Flame Resistance

ORALITE® FTP 2151S meets the requirements of EN 469:2020 clause 6.2.1.1 and EN ISO 14116:2008 Index 3 when tested in accordance with ISO 15025 Method A in new condition and also after 30 wash cycles according to ISO 6330:2021 Method 6N (60°C).

Thermal Resistance

ORALITE® FTP 2151S (centre stripe) exceeds the photometric requirements of EN ISO 20471:2013 after convective heat exposure at 180° C for 5 minutes when new (EN 469:2005 Clause 6.2.1.6) and also exceeds the photometric requirements after 5 washing cycles (according to ISO:6330:2021 Method 6N) and convective heat exposure at 180° C for 5 minutes.

Care Instructions

ORALITE® microprismatic tapes wash as well at lower temperatures as they do at higher temperatures. Therefore select the lowest washing temperature that will ensure adequate cleaning of the fabric. This will allow environmentally friendly washing and will extend the life of the garment.

ORALITE® FTP 2151S, when washed in accordance with ISO 6330:2021 Method 6N will withstand a minimum of 30 washings at 60° C and when washed in accordance with ISO 6330:2021 Method 4N will withstand a minimum of 30 washings at 40° C when attached to a variety of background materials.



Application Instructions

ORAFOL strongly recommends pre-testing for compatibility of the tape with the chosen fabric. As there can be great variation in the background fabrics produced, variation in chemical treatments used on fabrics, variation in the fusing methods and equipment and variation in the washing processes, it is important that these parameters are evaluated for each application, and it remains the responsibility of the user to test the specific fabric to be sure that the adhesion of ORALITE® FTP 2151S is satisfactory on an ongoing basis before commencing production. ORAFOL has created a qualification process to verify background fabric compatibility and customise instructions for each individual customer's specific application(s). Based upon the specific background fabric(s) and sealing equipment, we will help define an appropriate application system. Please contact ORAFOL for further information.

Please contact ORAFOL for full care and application instructions.

Cleanability

ORALITE® FTP 2151S features a glossy top surface which is inherently resistant to soiling and allows for easy cleaning. Dirt, sooth and smoke stains may be readily cleaned using non-abrasive soap and water, thus restoring significant reflectivity and fluorescence to the product.

Shelf Life

The product should be used within one year from the shipment date. All rolls including partially used rolls should be stored in original packaging, tightly wound. Store in a clean and dry area, away from direct sunlight. Store at 20° C and 50% relative humidity.

Table 1 – Retroreflectivity

Observation Angle	Entrance Angle ($\beta_1, \beta_2=0$)			
	5°	20°	30°	40°
0,20°	330	290	180	65
0,33°	250	200	170	60
1,00°	25	15	12	10
1,50°	10	7	5	4

All values have units of cd/lux/m².

Physical Properties

Thickness	~435 µm
Temperature Resistance	-20°C to +50°C
Shelf life	1 year
Protective Liner	Yes
Abrasion	EN ISO 12947-2:2016, 9 kPa, wool, 5000 cycles
Flexing	EN ISO 7854:1997, method A, 7500 cycles
Folding at cold temperature	ISO 4675:2017, (-20 ±2°C)
Temperature variation	EN ISO 20471:2013, pt. 7.4.4, 12 hours @ (+50±2°C) & 20 hours @ (-30±2°C)
Domestic wash 60°C with tumble dry	EN ISO 6330:2021, method 6N+F, 30 cycles
Industrial wash 75°C with tumble dry	Not allowed
Dry cleaning	Not allowed
Influence of rain	EN 20471:2013, annex C

IMPORTANT NOTE

All ORAFOL products are subject to careful quality control throughout the entire manufacturing process, and it is ensured that they are of merchantable quality and free from manufacturing defects. The information published is based on our analyses and studies and does not constitute any warranted properties or any agreement as to quality. Due to the diverse possibilities of use of ORAFOL products and the constant development of new applications, the buyer should carefully consider the suitability and performance of the product for the respective purpose; it bears all risks associated with such use. No warranty is given for purposes other than those listed in the Technical Data Sheet or for applications that are not processed in accordance with ORAFOL's processing instructions.

The durability of the end product depends upon a variety of factors, including but not limited to substrate selection and preparation, compliance with the recommended application guidelines, geographical area, exposure conditions and maintenance of the ORAFOL material and of the end product. Product defects caused by the substrate or improper surface preparation do not lie within ORAFOL's sphere of responsibility.

When using ORAFOL products, the pertinent national regulations are to be observed. ORAFOL recommends that you obtain the current stipulations from your local authority and ensure that the product meets these requirements. Please contact ORAFOL for further information.

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