

This document applies to ORALITE® microprismatic tapes (garment trims) for sewing, heat sealing or welding to garments.

Products included in this document are:

- ORALITE® GP 100 Series
- ORALITE® GP 200 Series
- ORALITE® GP 300 Series
- ORALITE® GP 400 Series
- ORALITE® GP 800 Series
- ORALITE® ID Tape

ORALITE® GP 370 has a separate application and care document, as it is an industrial wash microprismatic tape. This can be downloaded from [www.orafol.com](http://www.orafol.com).

## 1.0 General Information

ORALITE® microprismatic garment tapes are tough weather and solvent resistant products designed to be sewn, heat sealed or welded to clothing. Some of the tapes are produced with an application border clearly defined as a pair of parallel lines of seal pattern. See Table 1 below, for the application properties of the individual product you have purchased.

For more information on the *retroreflectivity* of ORALITE® microprismatic garment tapes, please reference the relevant technical data sheet. These are available from your ORAFOL representative or they can be downloaded at [www.orafol.com](http://www.orafol.com).

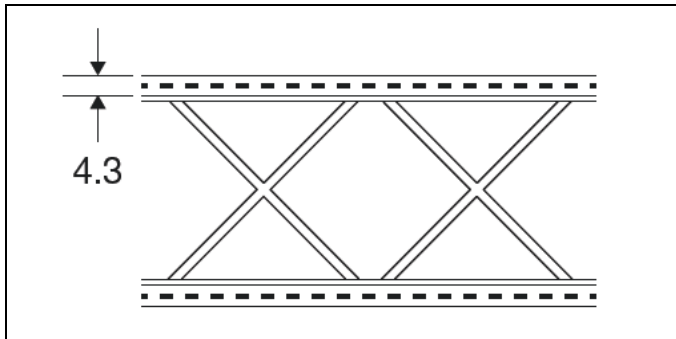
**Table 1: Application properties of ORALITE® products**

PRODUCT	VISIBLE APPLICATION BORDER	SUITABLE FOR	
		SEWING	HIGH FREQUENCY WELDING
ORALITE® GP 214	✓	✓	✓
ORALITE® GP 325	✓	✓	✓
ORALITE® GP 340 and GP 340 Shadow, Highlight and Imagine	✓	✓	✓
ORALITE® GP 350	✓	✓	✓
ORALITE® GP 440	✗	✓	✗
ORALITE® GP 801 and 801 Check	✗	✓	✗
ORALITE® GP 801FR	✗	✓	✗
ORALITE® ID Tape	✓	✓	✓

## 2.0 Sewing to Garment Background Fabric

The following measures should be taken to achieve the optimum performance from the tapes.

ORAFOL garment tapes may be sewn onto high visibility garments. Always ensure that the sew line is centred between the parallel border lines or the fully sealed border. Never allow the sew line to run into any of the sealed cells of the tape.



Please sew inside the border as shown, if applicable to the product chosen

Recommended stitches: 8 per 25 mm

We recommend taking the following measures if the tape binds during sewing:

1. Reduce the pressure on the machine foot
2. Use a teflon coated pressure foot, if necessary
3. Use of a silicone spray or silicon coated cloth will help to lubricate the surface of the tape

Do not stretch the tape as it is being applied.

ORAFOL recommends that the tape is turned under and sewn through the doubled over edge. This helps prevent moisture ingress. Where possible within the design of the garment the cut ends should be inside the seams of the garment.

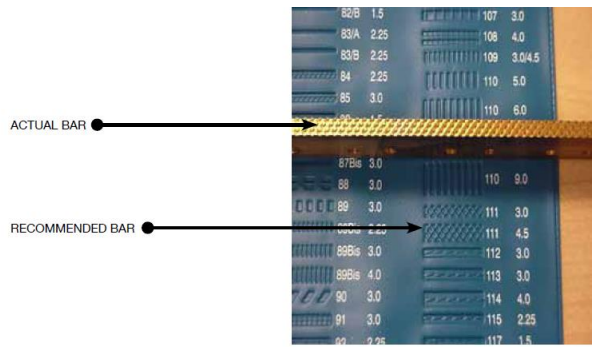
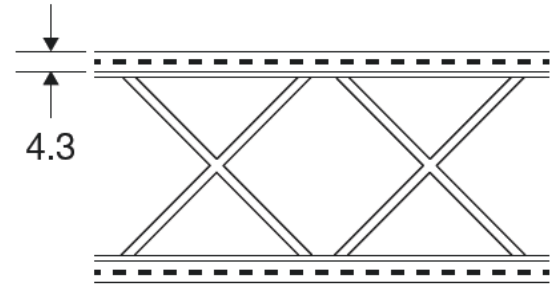
ORALITE® GP 400 Series and ORALITE® GP 800 Series are of single layer construction which allows for stitching in any area of the surface. The stitching should be at least 3 mm from the edge of the garment tape.

Background fabric – Whilst ORAFOL has carried out compatibility checks to most of the readily available background fabrics, we cannot give an open guarantee that the chosen background fabric is fully compatible. Please check with the manufacturer of the fabric before use. The thread must be able to withstand the same wash & wear conditions as the material it is being applied to.

## 3.0 High Frequency Sealing to Garment Background Fabric

## 3.1 Sealing Tool/Die

Firstly, check the summary table on page 1, to see if high frequency sealing is recommended for the product you have purchased.

	<p><b>1.</b></p> <p>The sealing tool must be stippled or a diamond type patterned rule between 3 to 5 mm wide. Shown is a typical stippled type tool. Avoid using typical “Bar Seal” type flat tool rule, as this will discourage direct bonding between the tape and the coated background fabric.</p> <p>It is preferable to use two tool rules set parallel, when sealing.</p>
	<p><b>2.</b></p> <p>However, if using a single tool rule set up, the tool must not be allowed to seal inside the innermost application border seal-line, and encroach into the sealed cells of the tape.</p> <p>The sew border width (from the tear seal to the bar seal) measures 4.3 mm. Care should be taken when sealing to ensure that the finished seal width does not take up the entire 4.3 mm width in the sew border.</p>

## 3.2 High Frequency Sealing Conditions

Sealing conditions are dependent upon the type of sealing equipment used. The primary parameters and conditions to be set are as follows:

- HF Power applied to sealing tool
- Applied Pressure
- Sealing and Dwell Time(s)
- Tooling Material\*
- Dielectric material

The applied HF power should be set at a level such that an under or over seal does not occur. An under seal will not correctly weld the materials. An over seal will cause materials to thin out on the weld line.

Use of a brass tool is recommended.

Always ensure that the upper platen holding the tool is parallel to the lower platen to ensure a uniform seal. Poor alignment results in areas being over sealed and may lead to an arc formation.

\*Brass is expensive but very durable and gives very good HF transmission.

## 3.3 Background Fabric






ORAFOL has carried out compatibility checks to most of the readily available heat sealable background fabrics. We cannot guarantee that the chosen background fabric is fully compatible for heat sealing and we recommend that the manufacturers of the background fabric are consulted before proceeding with heat sealing. ORAFOL cannot be held responsible for any non-compatibility of welded materials.

Do not stretch the tape as it is being applied.









Check the strength of the seal to the background fabric at regular intervals of production. Ensure that the tool / die covers the tape edge during sealing to stop an edge curling effect.

Try to ensure that bar seal width covers at least 60 % of the sew border and the remaining 40 % over the fabric, this of course will depend on seal strength, and may vary in order to increase the seal strength.

## 4.0 Care Instructions - General Information

	Do not bleach		Only non-chlorine bleach when needed		Tumble dry, normal, low-heat		Use cool or warm iron temperature setting. Do not use steam.		Do not dry clean
---	---------------	---	--------------------------------------	---	------------------------------	--	--	---	------------------

**Table 2: Overview of Care Instructions**

PRODUCT	RECOMMENDED CARE SYMBOLS	WASH TEMPERATURE	NUMBER OF CYCLES	APPROVAL
ORALITE® GP 214		30 - 40° C	25	None
ORALITE® GP 325		60° C	25	ISO 6330:2012 Method 6N
ORALITE® GP 340 and GP 340 Shadow, Highlight and Imagine		60° C	100	ISO 6330:2012 Method 6N
ORALITE® GP 350		60° C	75	ISO 6330:2012 Method 6N
ORALITE® GP 440		60° C	100	ISO 6330:2012 Method 6N
ORALITE® GP 801 and 801 Check		60° C	100*	ISO 6330:2012 Method 6N
ORALITE® GP 801FR		60° C	50	ISO 6330:2012 Method 6N
ORALITE® ID Tape		40° C	75	None

\*ORALITE® GP 801 black check, & ORALITE® GP 350 are certified to 50 cycles

ORALITE® products clean 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. Variations in environmental conditions, as well as the chosen care process, may affect the life of your garment.

Regular inspection of the garment performance against the requirements of EN ISO 20471:2013 is recommended. Information included in the care label should be verified to ensure that the reflective material maintains compliance with EN ISO 20471:2013.

## 4.1 Hand Washing

Hand washing can be done with a sponge, a soft fabric cloth or a soft brush with lukewarm water and a mild detergent. After washing, the tape must be rinsed with clean water.

Stubborn stains such as grease or tar may be spot cleaned with petrol, alcohol, naphtha or turpentine. After spot cleaning the tape must be hand washed as above and rinsed with water.

## 4.2 Household Washing

Machine	Standard household washing machine
Detergent:	Standard household detergent, which contains oxygen bleach to reduce staining with high vis garments.
Setting:	"Coloured clothing without pre-wash"

If ORALITE® microprismatic tapes are used on fabrics that outbleed (run) easily; we recommend conducting the first two washes at 40° C (30° C for GP 214). This can prevent colour staining.

For ORALITE® GP 214, the maximum washing time on the highest temperature should not exceed 12 minutes and total washing time should not exceed 50 minutes.

## 4.3 Drying

Household tumble dryer, Normal, low heat.  
Dry to "slightly humid". DO NOT OVER DRY.  
Maximum exhaust temperature shall not exceed 80° C.  
For extended life, garment should be turned inside out before drying.

## 4.4 Chemical Cleaning / Dry Cleaning

In general we do not recommend dry cleaning. *If* dry cleaning is needed, use dry-clean petroleum solvent only. We recommend low drying temperatures, which shall not exceed 70° to 80° C.

ORALITE® GP 214, ORALITE® GP 440, ORALITE® GP 801 should never be dry cleaned.

## 4.5 Ironing

Do not use steam.  
Use a cool or warm temperature setting.  
Avoid direct contact of the tape when ironing, use a press cloth.

## IMPORTANT NOTICE

All ORALITE® products are subject to careful quality control throughout the manufacturing process and are warranted to be of merchantable quality and free from manufacturing defects. Published information concerning ORALITE® products is based upon research which the Company believes to be reliable although such information does not constitute a warranty. Because of the variety of uses of ORALITE® products and the continuing development of new applications, the purchaser should carefully consider the suitability and performance of the product for each intended use, and the purchaser shall assume all risks regarding such use. All specifications are subject to change without prior notice.

ORALITE® is a registered trademark of ORAFOL Europe GmbH.

