

This document applies to ORALITE® industrial wash glass bead tapes (garment trims) for heat application. These instructions do not apply to ORALITE® industrial wash glass bead tapes for sewing application. Products covered in this document:

- ORALITE® GP 092 / GP 092S
- ORALITE® GP 097 / GP 097S

## General Information

ORALITE® reflective garment transfer tapes are tough, flexible tapes designed to be heat applied to suitable background fabrics for use on EN ISO 20471:2013 high visibility garments.

ORALITE® transfer tapes should be applied using the recommendations below, however converters are also advised to determine which configuration best suits their substrate based on their individual equipment. These conditions will vary depending on the type of equipment, age, model etc. and should be evaluated accordingly to select the best processing conditions. It is strongly recommended to test the below mentioned ORALITE® transfer tape on the actual substrate before commencing production.

## Preparation

It is important to ensure that the equipment being used can apply uniform heat & pressure during the lamination process. The following guidelines are for stationary press lamination and are recommendations only.

(For continuous heat presses, ensure that the temperatures in each zone of the press are uniform across the width of the press. A handheld infrared thermometer is recommended when setting up, to compare settings with actual conditions in the heat press. A tachometer is also recommended for setting the correct belt speed)

As there can be great variation in the fabrics produced, variation in chemical treatments used on fabrics, and variation in the fusing methods and equipment, 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® transfer tape is satisfactory.

1. Pre-Heat the press to the settings in Table 1 depending the product, substrate type and type of press. The temperature settings in Table 1 are equipment set points. It is important to ensure that the temperature sensors within the particular equipment model are working accurately, if necessary calibration of the temperature sensors may need to be performed.

2. It is necessary to determine if the chosen substrate will shrink at the above temperatures. To do this place a sample of the fabric on a flat table & mark a 100 mm x 100 mm square on the fabric using a permanent marker/pen. Pass the sample through the press. Allow to cool & measure the % reduction in size, if the % reduction is greater than 3 % in either direction, then the substrate will need to be pre-shrunk in advance of applying the reflective tape.

3. For best performance tape corners should be configured on the garment to allow them to be sealed into a seam.

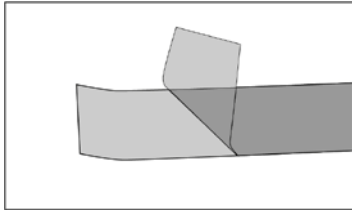
**Table 1 – Operating Settings for a Stationary Heat Press**

Transfer Tape	Fabric Substrate	Temperature	Time	Pressure*
GP 092/GP 092S	Mediumweight Polycotton Blend (180≤ - ≥300g/m <sup>2</sup> )	165-175°C	20 sec	2 Bar
GP 092/GP 092S	Heavyweight Polycotton Blend (300≤ - ≥400g/m <sup>2</sup> )	175-185°C	20 sec	2 Bar
GP 097/GP 097S	Mediumweight Polycotton Blend (180≤ - ≥300g/m <sup>2</sup> )	170-180°C	20 sec	2 Bar
GP 097/GP 097S	Heavyweight Polycotton Blend (300≤ - ≥400g/m <sup>2</sup> )	180-190°C	20 sec	2 Bar

\* Pressure measured over entire press area. These are recommendations for selected fabrics. Other fabrics are possible and need to be evaluated.

## Lamination

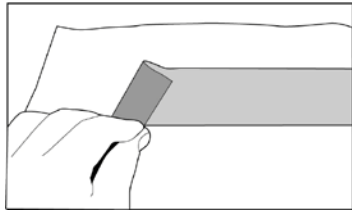
### Step 1



ORALITE® GP 092 and GP 097 are provided with a protective liner on both sides of the tape unless specifically indicated otherwise. **The adhesive side liner (thinner, softer, transparent) (see figure 1) must be removed prior to fabric lamination.**

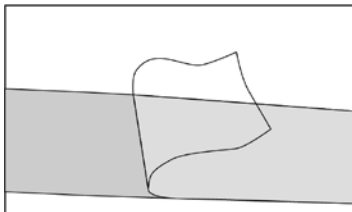
The reflective side (white opaque, slightly rigid PET) liner should be left on until after lamination is complete. In cases where more heat is required to properly laminate to a given fabric, both liners may be removed in advance; however, tape non-uniformities may result.

ORALITE® GP 092S and GP 097S (Segmented versions) are provided with a protective liner on the reflective side only. The reflective side (white opaque, slightly rigid PET with tacky adhesive) liner should be left on for a minimum of 5 minutes after lamination is complete and the tape has been allowed to cool.



### Step 2

Place the tape with the adhesive side facing the substrate. Do not stretch the tape as it is being applied. For best results ensure that the temperature and pressure are uniform across the width and throughout the length of the press.



### Step 3

Allow the protective liner to cool to room temperature before stripping the liner. To remove, lift the protective liner at one edge & separate from the reflective surface by gently pulling back onto itself.

## Additional Information

All candidate fabrics should be tested for adhesion and washability. Chemical fabric treatments, such as water repellent and waterproof finishes, may contain silicone paraffin, fluorocarbon resin, or other material that may strongly influence the level of adhesion to the fabric and the lamination conditions. Because all fabrics have variations in construction and in the amount of finishes applied, ORAFOL makes no warranty that the end product will be suitable for its projected use, or that similar fabrics will perform in an identical manner. After application, allow 24 hours for curing before conducting any tests.

Other lamination methods can be used, in each instance the proper temperature, time & pressure settings must be tested for each fabric to ensure adequate adhesion. Do not HF weld through this tape.

## Care Instructions

ORALITE® industrial wash glass bead tapes for heat application are soft, flexible glass bead microsphere reflective trims designed for use in industrial wash applications. ORALITE® industrial wash glass bead tapes for heat application exceed all the requirements of specification EN ISO 20471:2013 separate performance level 2, and are certified per ISO 15797 method 8 as follows:

- 50 wash cycles at 75° C + tumble drying at 90° C
- 50 wash cycles at 75° C + tunnel drying at 155° C inlet temperature

ORALITE® GP 097 & GP 097S is also certified to ISO 6330:2012 method 6N as follows:

- 50 wash cycles at 60° C

ORALITE® GP 092 & GP 092S is also certified to GUV-R 2106:2005 as follows:

- 50 wash cycles at 60° C

ORALITE® industrial wash glass bead tapes for heat application 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.

Variations in environmental conditions as well as 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.

## 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.

## Industrial Washing

Washing Machine	Standard front-loading industrial washing machine. Tunnel washing is not recommended.
Temperature	Maximum wash temperature certified is 75° C. The tape will handle higher temperatures but that will reduce the life of the tape/garment.
Detergent	Low- to medium- alkaline, high-surfactant detergents. The detergent should not contain free sodium hydroxide or potassium hydroxide.

### Caution!

- Do not pre-soak
- Do not use high alkaline products (such as heavy duty products or stain removal products)
- Do not use solvenated detergents or micro-emulsions
- Do not use additional bleaches
- Rinse thoroughly in order to completely remove all detergent residues.

Tape longevity can be improved by:

- Using lower temperatures
- Limiting abrasion in the wash process
- Not pre-soaking with detergent
- Using acid letdown/rinse

### Note!

ORALITE® industrial wash glass bead tapes for heat application are certified to ISO15797 Method 8 as detailed above. Washing process, drying process and detergent selection changes can significantly change the wash durability of the reflective tape. It is important that these parameters are evaluated for each application, and it remains the responsibility of the user to test their specific conditions to assess durability.

## Household Washing

Washing Machine	Standard household washing machine
Temperature	Maximum wash temperature certified is 60° C. The tape will handle higher temperatures but those will reduce the life of the tape/garment.
Detergent	Standard household detergent, which contains oxygen bleach to reduce staining with Hi-Vis garments.
Setting	“Coloured clothing without pre-wash”

Maximum washing time on highest temperature should not exceed 12 minutes.  
Maximum total washing time should not exceed 50 minutes.

If ORALITE® industrial wash glass bead tapes for sewing application are used on fabrics that outbleed (run) easily; we recommend conducting the first two washes at 40° C. This can prevent colour staining.

## Bleaching

Only use non-chlorine bleach when needed.

## Drying

### Tumble dry

Maximum temperature shall not exceed 90° C.  
Dry to “slightly humid”. Do not over dry.  
For extended life, the garment should be turned inside out before drying.

### Tunnel dry

Maximum inlet temperature shall not exceed 155° C.  
The drying time should not exceed 6 minutes.  
Limited abrasion tunnel dry is recommended.

## Chemical cleaning / dry cleaning

Normal Cycle

## 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.

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