

## How to use: TECNADIS HEATSHIELD Heat barrier treatment for glass surfaces

### PRODUCT DESCRIPTION

#### Component 1 Tecnadis HEATSHIELD BASE



#### Component 2 Tecnadis HEATSHIELD HARDENER

Tecnadis HEATSHIELD treatment is based in **two different components: Component 1 (BASE) and Component 2 (HARDENER)**, which **must be mixed necessarily a minimum of 24 hours before the application**. (it is mandatory to wait 24 hours after mixing, it is not valid to make the mixture in the afternoon and apply it the next day in the morning).

The **proper proportion of the mixture of Component 1 and Component 2 is 9:1 in volume**. (Note: Usually product presentation is designed in such a way that, in case the user wants to use the whole amount of product, the whole content of Component 2 can be dropped into the container of the Component 1).

The product is solvent-based: it is recommended **to keep it on its original container unopened** until the moment of the application. Once opened, be sure to keep it in the original container properly closed in order to guarantee its properties.

### HOW TO USE IT

#### STEP 1. PREPARING THE SURFACE

The glass surface must be **completely clean and dry**.

The preparation of the surface is an essential step to achieve a good application of the product so it is necessary to do a thorough cleaning.

For this, It is recommended to use an abrasive-type polisher with micro-particles, extending it on the surface with the aid of a scouring pad that does not scratch the glass or an industrial polisher in the case of large surfaces. Once the polisher is extended, remove it with the aid of a "T" type cleaning tool and spray the surface with water to facilitate the process. Finally, cover the entire surface with ethanol and dry until total transparency.

In place of an abrasive-type polisher it is also possible to use a powerful detergent for surface preparation.

Other types of thorough cleaning would be also valid. However, it is always recommended to finish the preparation by covering the surface with alcohol of the type ethanol.

To apply the product on the outside of the glass is recommended. It is also possible to apply the product on the inside of the glass but the effectiveness could be slightly reduced.



## STEP 2. PREPARING THE MIXTURE

- 1) The components may present a small precipitate due to storage. It is convenient to **gently shake each component** to homogenize before applying.
- 2) The product is presented in 2 individual components that should be mixed previously in the **correct proportions of Component 1 and Component 2, 9:1 in volume.** (Example: mix 900 ml of Component 1 with 100 ml of Component 2). **Mix in this proportion and shake the mixture vigorously** to ensure the correct mixing of the two components. Once the mixture has been created, we must **wait necessarily a minimum of 24 hours before its use.** Once prepared, the final product is stable and applicable during the next 7 days (See surface drying, page 3). After this time, prepare a new mixture in order to assure the correct performance. However, it is recommended to use the product within the next 24-48 hours after being mixed due to its favorable drying/curing conditions.

(Note: Usually product presentation is designed in such a way that, in case the user wants to use the whole amount of product, the whole content of Component 2 can be dropped into the container of the Component 1).



## STEP 3. PRODUCT APPLICATION

### 1) RECOMMENDED TOOLS:

Paint spray gun is recommended, "Trans-Tech" type with feeding filter, and a compressor with an air flow capacity of at least 6 bar:

AIR GUN: REFERENCE MODEL		
NOZZLE	Hole size	0,85 mm
HEAD	Head shape	Elliptical or equivalent
TYPE	Trans-Tech, with feeding filter: 200 microns	

COMPRESSOR: REFERENCE MODEL	CV	Lts	Lts / min	kg	bar
Recommended parameters	2 - II	50	220	35	5

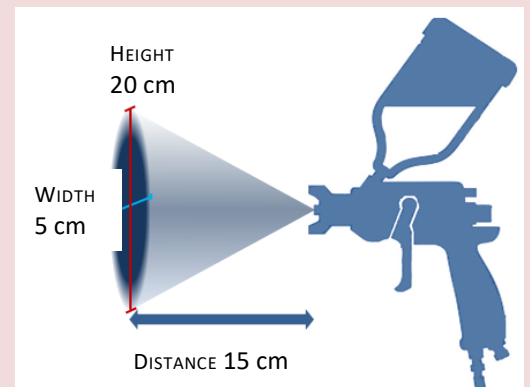


Important: Place a desiccant filter in the compressor

### 2) GUN CALIBRATION:

To calibrate the gun, adjust the **spray pattern** and the **amount of product per time unit (ml/min)** to the values below, in order to assure an approximated yield of 40 ml/m<sup>2</sup> for a standard protection layer:

GUN: CALIBRATION PARAMETERS		
DISTANCE TO THE GLASS		15 cm
ATOMIZATION		Medium-low
SPRAY PATTERN	Width	4 – 6 cm
	Height	20 cm
AMOUNT OF PRODUCT	Per unit of area	Aprox. 40 ml/m <sup>2</sup>
	Per time unit	Aprox. 50 ml/min



### 3) SPRAYING:

Spray the mixture prepared from the two components (1 and 2) over the glass in one layer homogeneously, on the **outside face of the glass**, avoiding possible excesses and product's sags. It is also possible to apply the product on the inside of the glass but the effectiveness could be slightly reduced. It is recommended to ventilate well the place where the application is taken place (see Recommendations for the application in page 3).

As **standard application** it is recommended to apply **only one covering** or layer of the product. Approximated performance: 40 ml/m<sup>2</sup> (25 m<sup>2</sup>/L) approx. for a standard protection layer.

### APPLICATION PARAMETERS: FOR A STANDARD APPLICATION

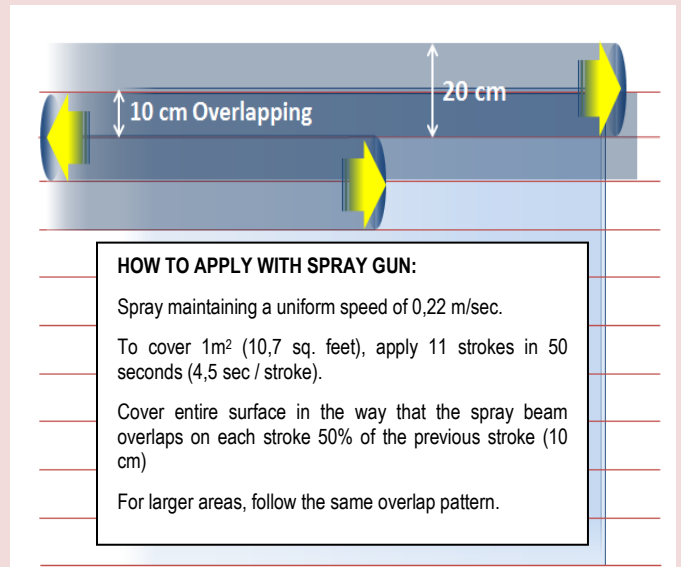
Coating speed	Medium – high (1 m en 4,5 sec)	
Overlapping	50% (10 cm)	
Gun inlet pressure	5 bares	
Application durations	1 m longitudinal	4,5 sec
	1 m <sup>2</sup> (10,7 sq. Feet)	50 sec

### How to apply:

It is recommended to start spraying outside the surface to be treated, in order to avoid accumulation of the product in the starting area.

For a proper application, follow the instructions with the help of the diagram on the right:

- Direct the gun in “strokes” or longitudinal stripes maintaining a uniform speed, so that 1 m longitudinal be flown in approximately 4,5 seconds (0,22 m/sec).
- Start applying the first longitudinal stroke in a way that only half of the spray fan/beam reaches the surface to be treated, in order to perform an overlapping in the following stroke (see sketch on the right).
- Keep on covering the entire surface in the way that each spray fan overlaps onto 50% of the previous pass (see attached diagram).



NOTE: Immediately after application, a whitish veil may appear on the treated glass. After 5-10 minutes, it will disappear completely levelling out the aesthetics of the glass until it is total transparency.

## RECOMMENDATIONS FOR THE APPLICATION

It is recommended to use appropriate PPE for handling this type of product (see product's MSDS). It is recommended, in case of indoor application, to keep well ventilated the place during application of the coating and also the 4 hours after the treatment. It is recommended not to stay in the room where the treatment is applied to people unaware of application works, during it and the 4 hours later. It has a characteristic odour during the next few hours until total ventilation.

Minimize as much as possible the presence of contaminants in air currents during application and during subsequent minutes, until treatment is dry.

## TREATED SURFACE DRYING

The final product resulted from the mixture of components 1 and 2 is recommended to apply it within the next 24-48 hours from its preparation (It should never be used before 24 hours from its preparation). If it is used within the period of 24-48 hours, the drying / curing conditions are as follows:

- **Drying to touch: 3 hours.** Do not touch the surface for at least 3 hours after application. It is convenient a dust-free environment while drying during these 3 hours, in order to prevent the arising of imperfections in the surface
- **Drying: 6 hours.** The product will be dry enough in case of rain weather incidents after 6 hours from application. If rain conditions occur during the drying time, the treated surface must be protected.
- **Full curing:** Do not subject to abrasion or cleaning of any kind during the following 24 hours after its application. From this time, the product is resistant to cleaning processes with conventional detergents / chemicals.

If the final product is used more than 48 hours after its preparation, the drying / curing times increase. In no case the final product will be used after more than 7 days from its preparation. The drying / curing times for a final product applied after 7 days from its preparation are:

- **Drying to touch: 5 hours.** Do not touch the surface for at least 5 hours after application. It is convenient a dust-free environment while drying during these 5 hours, in order to prevent the arising of imperfections in the surface

- **Drying: 3 días.** The product will be dry enough in case of rain weather incidents after 3 days from application. If rain conditions occur during the drying time, the treated surface must be protected.
- **Full curing: 5 days.** Do not subject to abrasion or cleaning of any kind during the following 5 days after its application. From this time, the product is resistant to cleaning processes with conventional detergents / chemicals.

## CLEANING OF THE TOOLS USED

Cleaning the tools used for product application (including the air gun) is recommended to be carried out **before the product gets dry**, using to that purpose alcohol-based solvents like isopropanol or ethanol. In case the product is already dry, use stronger solvents for cleaning, like universal solvent or acetone (with the proper cautions).

## HOW TO CLEAN THE TREATED GLASS?

Once the coating is totally dry (see treated surface drying, page 3), the glass treated with Tecnadis HEATSHIELD can be cleaned with **conventional cleaners** (based in solvents and surfactants). It is not recommended to clean the surface with highly abrasive cleaners, since they may damage the glass surface and, therefore, also the coating.

## HOW TO REMOVE THE TREATMENT FROM THE GLASS?

In case you want to remove the treatment Tecnadis HEATSHIELD, if it is fresh / recently applied (maximum approximately 1 hour after application), use an alcohol.

In case you want to remove the treatment Tecnadis HEATSHIELD, if it is NOT fresh / recently applied (after approximately 1 hour after application), it is recommended the use of commercial abrasive cleaners.

## INSTRUCTIONS FOR HANDLING

The security information of the product needed for its use without risks is not included in this document. Before manipulating the product, read carefully the Material Safety Data Sheets and the labels for a safe use and to be aware of physical and health risks. The MSDS are available and are provided by TECNAN S.L. Application of the product should be carried out in a properly ventilated place. It contains volatile solvent (isopropanol and ethanol).