

### 1.- INTRODUCTION

SOLPLAST, S.A. has a quality assurance system certified according to standard UNE-EN ISO 9001, which ensures quality in each phase of the production of our products.

SOLPLAST, S.A. manufactures and markets plastic sheets for greenhouse coverings with a guaranteed minimum service life, depending on the type and thickness of the film.

### 2.- SERVICE LIFE TABLES

The guaranteed service life of the different sheets marketed by SOLPLAST, S.A. for greenhouse coverings that meet the conditions set out later in this document are as follows:

			SERVICE LIFE		
<b>INSTALLATION</b>	<b>2 C (2 seasons) NON-THERMAL, 180 µ THERMAL 200 µ</b>	<b>2 A (2 years) 200 µ</b>	<b>3 C (3 seasons) 200 µ</b>	<b>3 A (3 years) 200 µ</b>	<b>4 C (4 seasons) 200 µ</b>
<b>January</b>	<b>months</b>				
<b>February</b>					
<b>March</b>					
<b>April</b>					
<b>May</b>					
<b>June</b>					
<b>July</b>					
<b>August</b>					
<b>September</b>					
<b>October</b>					
<b>November</b>					
<b>December</b>					

To determine the service life of the same sheets in another area with a different amount of radiation, please consult the following table with guidelines for conversion. However, as is to be expected, the service life of a covering film depends not only on the climate radiation, but also on a series of factors such as humidity, temperature, structure type, greenhouse height, plant health treatments, ventilation, etc. For this reason, it is essential to always consult the guaranteed service life in the area where the covering will be installed.

	<b>RADIATION</b>		<b>SERVICE LIFE</b>
<b>80 – 100 kLy</b>	<b>3 A</b>		
<b>100 – 120 kLy</b>	<b>3 C</b>		

### 3.-REPLACEMENT TABLE

The amount of plastic to be replaced in the event of premature degradation in all of the cases of service life guarantees set out above will be calculated as shown below, on a PRO RATA TEMPORIS basis.

$$\% \text{ MATERIAL TO BE REPLACED} = 100 - \frac{\text{MONTHS OF SERVICE LIFE OF THE FILM PRIOR TO DEGRADATION}}{\text{MONTHS OF GUARANTEE}} \times 100$$

In the case of premature degradation of Macro-tunnel Strawberry films removed in the summer in the Huelva area, the replacement calculation shall take into account the guarantee period for the season starting on November 1 (installation), at the earliest, and lasting until June 30 (removal), at the latest; thus, the guaranteed service life will be 8 months per season.

#### **4.-RECOMMENDATIONS**

##### **Transport and Storage**

- § During transport and storage, the reels must rest on a smooth surface with no protruding or sharp points that could damage them.
- § Do not place any heavy or sharp objects (rolls of wire, stakes, etc.) on top of the reels.
- § Do not drag the reels during transport and/or installation or scrape their edges.
- § Store leftover coils in a dark, dry place, preferably wrapped in opaque plastic.

##### **Installation**

- § Periodically inspect the greenhouse structure (fabric and wire), checking for rust and loose nails or wires.
- § Do not scrape the reels during installation.
- § The sheet must have adequate tension; if it is too loose, there is increased friction against the structure and if it is too tight, this may accelerate premature degradation. Do not install during the hottest hours of the day. The softening of the plastic causes excess tension during installation that causes strong contractions.
- § Never tighten after fastening the plastic.
- § Avoid direct contact between the sheet and the structure and in these areas, apply reflective adhesive tape or water-based paint to the plastic to prevent damage from high temperatures.
- § In tunnel and multitunnel-type greenhouses, the previous recommendation is crucial, given the large contact surface between the tubes and the plastic.
- § If you choose to whitewash the plastic during the period with greatest radiation, use appropriate products that do not affect the service life of the plastic. To wash off the whitewash, use only water or non-acidic water-based products.

##### **Use of agrochemicals**

The use of plant health products (pesticides, insecticides, nematicides, etc.) can release compounds that affect the effectiveness of the stabilizers protecting the plastic against UV radiation. It is extremely important to follow certain recommendations:

- Adjust the recommended treatment dosages and frequencies, limiting the use of pesticides as much as possible, in particular those containing sulfur and/or chlorine.
- Apply to crops, not the plastic. Avoid the accumulation of pesticides on points in contact with the plastic or the structure.
- Ventilate the greenhouse as quickly as possible.
- If the soil is chemically disinfected, it is essential to cover the soil with plastic sheets with properties that create a barrier effect, preventing the disinfectant from attacking the plastic covering.

- Once the disinfection plastic is removed, ventilate the greenhouse well.

Keep in mind that the service lives mentioned in this document refer to the MINIMUM SERVICE LIFE. By following the recommendations above, it is possible to obtain service lives considerably longer than those guaranteed here.

### **Polinizers**

All recently installed greenhouse covering plastics (up to the 4th or 5th month in the winter or the 2nd or 3rd month in the summer) absorb a great deal of the ultraviolet radiation received from the sun to ensure their service life. This can initially cause the polinizers to become a bit disoriented, but this effect will go away once the insect gets used to the plastic and/or after this initial period. The longer the service life of the plastics, the greater their absorption at the start of their service life, which means the initial disorientation suffered by the insects may also be more pronounced and longer-lasting.

Certain simple practices can help the polinizer adapt as quickly as possible to the new environment when the film covering is new. Some examples are:

- Lightly whitewash the covering if there is a large amount of direct light (the covering is very transparent).
- Try using ventilation to lower the greenhouse temperature so that it is close to the optimal parameters for polinization: 70% relative humidity and temperatures of 15 – 30 °C. If the hive is too warm, the polinizers will dedicate their efforts to ventilating it, neglecting their other functions. Shading the hive may solve this problem.
- An increase in the population (larger number of hives per unit of surface area) may correct any initial polinization deficiencies.

There are many factors that affect efficient polinization by bees and bumblebees. Among these are:

- The blooming stage of the plants. Poor or deficient and irregular blooming results in deficient polinization.
- Weather. Less than optimal humidity and temperature conditions often result in poor polinization.
- Plant health products. This is one of the most important factors limiting the use of polinizers. Many plant health products are bee and bumblebee repellents, and some can even kill them.
- Pollen quality. Excess humidity will cause the pollen to clump together, making it more difficult to extract.
- Hive location. Hives must be located in an easily accessible spot, at a comfortable height.

## 5.- CLAIM PROCESSING

### Degradation

Technically speaking, a film is considered to have degraded when its elongation value is less than 50% of its pre-installation value (UNE EN 13206). In practice, it is detected because the plastic becomes rigid, brittle and fragile.

### Start of the guarantee period

This guarantee shall be understood to take effect on the date that appears on the last shipping invoice for the product from SOLPLAST, S.A. or its representatives, warehouses and/or distributors.

In the case of direct sea transport with no mediation by a distributor, the start of the guarantee period is understood to be one month after the date the ship reaches its destination.

### Notification of premature degradation

All claims related to degradation must be handled by the SOLPLAST, S.A. Sales Department or Distributors.

Notify the corresponding warehouse, Cooperative, Distributor or SOLPLAST, S.A. directly, as soon as premature degradation is detected.

### Visit and sample collection

Staff from SOLPLAST, S.A. or one of its distributors will visit the site where the degradation occurred to study it and take samples. Two samples of the film will be collected, one measuring 50 x 50 cm from the affected area and another 20 x 20 cm sample from an unexposed area. Both samples will be carefully labeled and sent to our laboratories. You may be requested to provide the following information when making a claim:

<b>Distributor</b>	<b>Client</b>
<b>Type of product</b>	<b>Width and thickness</b>
<b>Date of delivery</b>	<b>Date installed</b>
<b>Date of degradation</b>	<b>Agrochemicals used</b>
<b>Copy of the shipping invoice</b>	

### Results of the analyses

The client will be notified with the results of the investigations by the sales representative, cooperative, warehouse or distributor as soon as possible.

## 6.- EXCLUSIONS

Expressly excluded is any degradation caused by:

- Extreme weather conditions (hail and strong winds)
- Deterioration caused by the rusting of the greenhouse structure or staples.
- Mechanical damage caused by deficient storage, transport, conservation and/or installation.
- The use of organic acids or solvents to whitewash or clean the covering.
- Exceeding the sulfur and chlorine content limits on the film, according to table below:

<b>SERVICE LIFE GUARANTEE</b>	<b>SULFUR</b>	<b>CHLORINE</b>
2 SEASONS – 2 YEARS	1,500 ppm	100 ppm
3 SEASONS – 2 YEARS	2,000 ppm	150 ppm
4 SEASONS – 3 YEARS	3,000 ppm	200 ppm

The limits above are determined based on analytic method CEPLA MA-02 and MA-03, and are expressed in ppm (parts per million).

- In tunnel and multi-tunnel structures, not painting the film in areas in contact with the structure with a white acrylic or vinyl paint. Not using paints mixed with organic solvents.
- Burning materials inside the greenhouse to produce heat.
- Any other claim that does not comply with the recommendations described in Section 4.
- Claims that do not include all the requested documentation, in particular, the shipping invoice.

### **Responsibility of SOLPLAST, S.A.**

The responsibility of SOLPLAST, S.A. shall be limited in all cases to replacing the corresponding plastic in the amounts specified in Sections 2 and 3.

In no other case shall this guarantee affect any other type of compensation.



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