**FORM: D1541**

# Greenhouse Plastic Installation Tips

## FILM STORAGE

Store the plastic greenhouse film in a smooth, dry surface, in a cool protected location. Avoid exposing stored film to direct sunlight.

## INSTALLATION PREP & FASTENING METHODS

Installation should preferably take place early in the morning when wind speed is below 5 MPH, and temperatures are between 59 –70 degrees Fahrenheit. Greenhouse film shrinks in cold weather and expands in hot weather. Installing in cold weather can cause the film to be too loose in hot weather resulting in film flapping and excessive rubbing on stress points. Installing in hot weather can cause the film to over stretch and tear.

It is well known that degradation of polyethylene films occurs initially on film that comes in contact with the greenhouse frame members with elevated temperatures. Contact surface areas can be protected from heat buildup by applying white water soluble paint (Never use an oil based paint) or attaching white foam tape to their upper surfaces. Applying white paint on the outside film surface directly over a frame member or poly lock is also helpful in reducing excessive heat buildup. It is recommended that when using wire to support film that it be plastic coated or galvanized and as rust free as possible.

**Wooden Structures:** If the structure is to be treated use non organic or oily preservatives. Wood surfaces should be smooth. Remove nails and abrasions that could damage the film. Polyethylene should not come in contact with wood that is exuding pitch or resins. Batten tape and metal poly lock (wiggle wire, sure lock, etc.) are the most common fastening methods for wood frames.

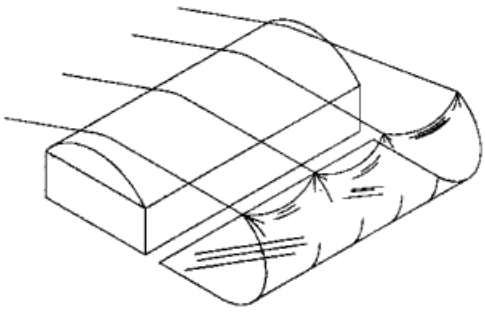
**Metal Structures:** All metal parts coming in contact with poly should be rust free and smooth. It's recommended that the metal frame members be hot galvanized. The greenhouse frame design should allow the film to be firmly attached to the greenhouse insuring that the greenhouse film will not excessively wear on frame members. Metal poly lock like wiggle wire, sure lock, etc. is the most common method used to secure film to flat metal surfaces.

**Hoop Greenhouses:** Snap clamps are a popular option for securing poly to greenhouses with hoop frames. They simply clamp the plastic to the tubing and should be screwed to the frame in windy / heavy snow areas where a more secure hold is needed.

## FILM INSTALLATION

**Unrolling the Film:** When unrolling the film, secure the loose end of the roll and unroll by carrying the whole roll. This prevents dragging film over sharp objects that could tear or puncture the poly.

**Stretching the Film on the Greenhouse Structure:** Stretch the film gently and evenly over the structure. Pulling out all the wrinkles will prevent the film from flapping in the wind. Over stretching might result in subjecting the film to tearing during the winter months, as the film shrinks at lower temperatures. For larger greenhouses, fasten ropes (purchased separately) to the corners of the film and throw them over the greenhouse. Pull the plastic over greenhouse with these ropes until the cover is even on both sides. After installation, the film may loosen as the temperature rises, and may need to be re-stretched. Re-stretching may also be necessary between seasons, or after strong winds.



**Air Inflation of Double Layer Poly:** An inflated double layer of poly is recommended when expecting to heat the greenhouse 30 degrees or more above the outside temperature because of the added insulation properties. It is also recommended in windy areas because a single layer installation may not have sufficient resistance to wind damage due to repeated flexing, and growers are cautioned that they use a single layer at their own risk. The best insurance policy for your greenhouse is to invest in a manometer to gauge pressure between double layer poly installations. This will allow you to know when your film is too tight resulting in over stretching the film, or too loose resulting in flapping and excessive rubbing on stress points. Air pressure between the two layers should be .2" for hot days to .45" on cold and windy days. A good manometer to use to measure air inflation is Dwyer Mark II model (Dwyer Instruments at 219-879-8000). Installing an air deflector where the inflation tube is mounted to the film, will keep air from drying out the outer film layer. Air inflation of double layer greenhouses structures should continue year round, including during non growing periods. Keeping the film inflated will prevent film damage due to mechanical abrasion. Avoid over inflation which stretches film on hot days. When the film cools, wrinkles form on inside film layers that stop water from rolling to the ground or gutter. Taut and smooth


If your plastic has a logo on it like the one to the left, make sure you are able to read it like shown here from the inside of your greenhouse. This will make sure the UV protected side of the film is on the outside of the greenhouse.

## MAINTENANCE

1. **Tears and Punctures:** Promptly repair any holes or tears with adhesive tape designed for use with polyethylene films.

2. **Controlling Greenhouse Temperatures:** Greenhouse temperatures over 115 degrees Fahrenheit can weaken polyethylene film and damage equipment in the greenhouse. In order to prevent in-house temperatures from rising to excessive levels, greenhouse should be well ventilated with external vents, a fan system, or an evaporative cooling system ( Available at https://www.acfgreenhouses.com/greenhouse-fans-shutters.aspx ). An external shade cover ( Available at https://www.acfgreenhouses.com/shade-covers.aspx ) can also provide cooler greenhouse temperatures during the warm spring and summer growing seasons as well as minimize damage to the film from hail and other flying debris.

3. **Avoiding Excessive Humidity:** Greenhouse relative humidity is influenced by many factors: plant density and maturity, watering practices, floor drainage, use of concrete or other ground covers that reduce soil moisture evaporation, and exchange of inside hot moist air for cooler dryer outside air. The use of drip control films can also help reduce water droplet adhesion, caused by water condensing on the inside layer, by sheeting the water so that it can flow to the ground or gutter.

### CHEMICALS HARMFUL TO THE LIFE OF GREENHOUSE FILM

Avoid film contact with PVC products containing "plasticizers" and free chlorine, which can deteriorate greenhouse film. Note that burning sulfur in the greenhouse reduces film life significantly and voids a greenhouse film warranty. The chemicals listed below are known to reduce film life by deactivating ultra violet systems used to protect films from UV degradation. Never spray chemicals directly onto greenhouse film. Harmful Chemicals to Avoid : Banrot, Bromoxynil, Captan, Chloropicrin, Chlorine gas, Chlorine bleach, Chlorpyrifos, Cooper Sulfate, Diazinon, Dienochlor, Dithiocarbmates, Fluvalinate, Formetanate, Hydrochloride , Iprodione, Mancozeb, Metham Sodium, Methomyl, PNCB, Silver Thiosulfate, Vinclozolin

***The above instructions are recommendations only.***