

Please read the following prior to film installation page to maintain expected film life. The following highlighted \* guidelines are a condition of the pro-rata U.V. warranty. Please check with your independent consultant for ideal film/crop compatibility or your installer for structural compatibility. Warranty applies from date goods arrive on the customer's site.



### General

1. Many greenhouse films contain slip and Anti condensate additives and to aid the installation process & user use. These additives give the film a slight haze at differing levels across the sheet. Over time these additives tend to deplete with general weathering. Fold lines and additives in the MD direction will be present and are a result of the manufacture processes. **Note: Wash hands after handling film and before eating or preparing food.**
- \*2. Avoid dragging the roll when transporting, or on site, avoid rubbing film against abrasive objects whilst handling or unrolling.
- \*3. Do not leave film unwrapped / uncovered and exposed to sunlight for hour(s) at a time in roll form it can heatsink the roll.
- \*4. If film is not being used immediately store it in its original packing in a cool, dry, dark area. Do not store rolls on their ends. Store away from any chemicals/solvents. The film will slowly degrade whilst in storage, film warranty begins at the date the goods are invoiced.
- \*5. Inspect all framework prior to installation to ensure that structure is clear of abrasive surfaces that may damage the film during installation or when in place. Use "Polyguard" hot spot protection tape where necessary.
- \*6. If tanalised/treated timber is in contact with, or in the close vicinity of, the greenhouse film i.e. framing, battens tops of posts etc. ensure that it is painted with 2 coats of water based white paint, **DO NOT USE OIL BASED OR P.V.C. PAINTS**, wood preservatives in particular copper based products can contain petroleum and other distillates which when in close proximity may shorten the films life.
- \*7. Products manufactured from or using P.V.C. in their makeup should not be used in the close vicinity or within contact of greenhouse films.
- \*8. Frame lagging tape i.e. "Polyguard" white self adhesive felt, should be used at any film/frame contact point to reduce abrasion and reflect excessive heat, especially on metal / alloy / timber frames. Ensure oily residue is cleaned off any new metal framework.
- \*9. Avoid using a film holding system that punctures the film during installation, i.e. nails, battens and tapes. If acrylic painted battens are used to hold down covers, an isolating highshear batten tape should be used to prevent tearing. (See Duralock or Lockstrip film clipping systems). Trim film "tail" to 25-50mm.
- \*10. For best results avoid fitting film in windy or cold (below 15degC) conditions as it may be difficult to gain correct tension. The film should be tensioned in a manner that maintains even tension. If fitted in cold conditions the film may require re-tensioning at a later date due when warm.
- \*11 Your greenhouse design should conform to modern day accepted standards roof pitch, frame support/span, compatible materials, stability etc. The use of isolation battens will extend film life. Avoid very wide span unsupported covers. If in doubt about the suitability of your greenhouse structure please contact your film supplier prior to installation. The film is flexible and will yield to the weight of water. Avoid water ponding by not fitting the film on building designs with less than 25 degrees of pitch angle or very flat curved arch greenhouses. Rafters spacing is relative to pitch (greater the pitch = wider rafter spacing, 25deg pitch 1-2m spacing, 30 deg pitch 3m spacing. Top rails or the film fastening system should not restrict or cause damming effect of rain-water run-off at the side edge of the cladding.
- \*12. For Twinskin applications always install a manometer air pressure-monitoring gauge and exhaust vent prior to initially inflating. Twinskin covers should only have the "slack" removed from them during installation with air pressure inflation providing actual tensioning. (Note; always draw inflation air from outside). Air pressure should be monitored monthly & allowances made for site-specific weather conditions and also frame strength design.
- \*13. We recommend that an experienced greenhouse contractor install this film (especially roof covers) to ensure correctness of tension and long term overall performance. Installing greenhouse films at different times of the year will affect their performance & finish. Installing new film to only part of the greenhouse may introduce differing temperature & humidity zones to the greenhouse environment (as the new greenhouse film may have differing energy, light & transparency / diffusion values). New film or different batches of film with have a different colour or haze than aged film.
- \*14. If painting the exterior surface of this film for shading purposes, use specified greenhouse shade paints only.
- \*15. In warmer climates "striping" with a white water based paint or applying a white reflective tape to the top surface of the film at the edges may assist in the reduction of excessive heat build-up at these points and extend film life. Ensure there is an adequate Ventilation System to limit extreme heat build up inside the greenhouse, including when the greenhouse is left fallow.
- \*16. Inspect your greenhouse film monthly & maintain & repair any tears or holes promptly that may appear over time.
- \*17. Avoid direct contact of pesticides / chemicals with the film when spraying, Direct contact will shorten the life of greenhouse film especially if allowed to build up to concentrated levels. **PLEASE NOTE:** Foggers units will increase chemical contact with film.  
Avoid sprays such as Banrot, Bromide gas, Bromoxynil, Chloropicrin, Chlorine gas, Chlorpyrifos, Chlormaquat chloride, Chlorothalonil, Chloride, Chlorine bleach, Copper sulfate, Captan, Dithiocarbamates, Dienochlor, Diazinon, Fluvalinate, Formetanate Hydrochloride, Hypochlorite swimming pool chemicals, Iprodione, Iron, Methyl bromide, Methomyl, Mancozeb, Metam sodium, Oxamyl, Pentachloronitrobenzene (PNCB), Permethrin and other synthetic pyrethroids, Pool chemicals, Sulfur, Silver thiosulfate, Vinclozolin, or containing chlorine, bromide, fluorine, copper, petroleum, and any oil based products should be restricted from contact with greenhouse film.
- \*18. Clean your greenhouse film annually (inside and outside) using a suitable agent (no chlorinated or petroleum based cleansers) Take special care to wash the condensation collection points i.e. purlins, top wall rails and base rails as these often harbour dirt and chemical build-up. Special care should also be taken if the greenhouse is located near high outside spray use areas, i.e. Orchards etc, or if exposed to naturally occurring chemicals e.g. sulphur etc.
- \*19. The anti-condensation agent used in most of these films, will in time "wash out". The film may then be treated with a product such as "Sunclear" to return the anti-condensate performance to the film. The anti-condensate "washing out" period will vary & is dependant on the greenhouses ventilation performance, local environmental conditions, growing techniques / practices, type of crop etc. The anti-condensate additive may add a small amount of diffusion to the film.  
**Note: Film installation treated with Anti-drip should have the printed –on film name/code writing facing inside – and this should be correct reading left-to-right when looking up from the inside.**
- \*20. Warranties/claims will not necessarily be honoured if goods are unpaid for.

**PRO-RATA WARRANTY CLAIMS, also refer [www.redpath.co.nz](http://www.redpath.co.nz) for current warranty information**

Duratough, Durashade, Duraflex, and Polyweave greenhouse films are supplied by Redpath in New Zealand with a Pro-rata Ultra Violet Warranty Only (see time allowances below). A pro-rata warranty is calculated by deducting the used life of the film from the replacement cost of the film. The risk in the Greenhouse, goods and purchases shall, unless otherwise agreed in writing, pass to the buyer upon invoice. Without limiting the generality of this Clause, the buyer assumes all risks and liabilities for any consequential losses arising from the use of any or all of the Greenhouse and goods whether singly or in combination with other products. Any warranty claims against these products should be directed in writing to your original supplier or Redpath Pacific Ltd, PO Box 9058, Palmerston North, with details of purchase date, code number on film, information on your greenhouse design, type of crop & list of sprays used film installation technique, And also the list of maintenance records that have been in place and also the nature of the damage supported with pictures. This information can also be e-mailed to [redpath@redpath.co.nz](mailto:redpath@redpath.co.nz)

The information contained herein is not intended to be all-inclusive and the manner and conditions of use and handling may involve other additional considerations. Information herein may be modified or updated at any time & may not be reproduced without written permission from Redpath Pacific Ltd, New Zealand.

U.V Warranty Periods & Basic Specifications – Applies from date of delivery to site, when goods are under the customers control

Duratough 215um +/- 10%, up to 90% nominal light +/-5%, Diffusion 21% +/-0%, non-pigmented natural, 45 month U.V degradation only pro-rata warranty  
Polyweave 300um +/- 10%, Up to 80% light +/-10%, Diffusion 40% +/- 10%. 39 month U.V. degradation only pro-rata warranty  
Durashade 215um +/- 10%, 50% diffusion +/- 10% nominal, Pigmented white, 45 month U.V degradation only pro-rata warranty  
Duraflex 215um +/-10%, 70% diffusion +/-10% nominal, Pigmented white, 45 month U.V degradation only pro-rata warranty

**INSTALLATION HINTS AND GUIDE. Issued with all greenhouse film sales since March 1<sup>st</sup> 1996**



**To be read in conjunction with Redpath greenhouse film handling guidelines and info on [www.redpath.co.nz](http://www.redpath.co.nz) website**

**General:**

- 1) If possible fit covers on a calm warm day of approx. 15°C or more, avoid windy conditions.
- 2) Closely inspect all frame work to ensure that it is clear of any objects that may cut or damage the film during the installation process. Ensure that framework meets current greenhouse design standards. (See item 11 in Handling Guidelines)
- 3) Generally a team of 3 persons' is sufficient. Lay the film with anti-drip facing to inside (if applicable)
- 4) Take advantage of early morning calm conditions

**Installation Techniques:**

Individual greenhouse designs each have their own preferred or simplest film installation technique. Please contact Redpath or our local skinning contractor for any specific advice you may require. The following information lists some of the common techniques used but this information is not all-inclusive for all situations. Note: Take usual safety precautions if working off the ground. Be SAFE!. Use Scissor lifts and height equipment.

Distribution of Film over Framing:

**Note: Film installation treated with Anti-drip should have the writing facing inside & be 'correct reading'**

- Option A) Construct a "goal post" type frame which can be rested against the end wall of structure with the roll of film mounted on the "crossbar". The film may then be reeled out over the full length of structure.
- Option B) Unroll the film fully beside the structure and refold lengthways into a long tube. Lift end into gutter and walk the roll the full length of the gutter (taking care not to snag it) and then pull the film over the structure with anti-drip side (if applicable) facing down.
- Option C) Place the roll on the ground at the end of the bay to be skinned. Place a pipe through its core and sit it on blocks. Unreel the film vertically up the end wall and have a person feed the film over the building apex whilst pulling the film along the structure from the far end using a rope.
- Option D) On rack and pinion ridge vented structures it is usually possible to open the ventilator into a horizontal position and roll the film along its length and then from there, position film as required.

**Helpful Hints:**

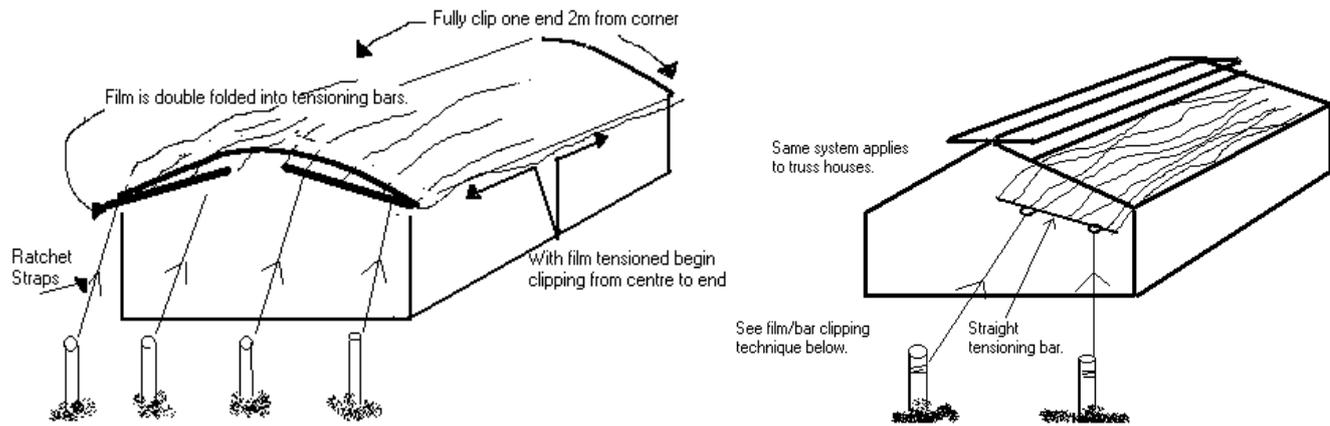
- \* In all instances take care not to snag the film on the greenhouse framing when sliding it into position.
- \* Temporarily install rope/s lengthways on top of rafters or arches to assist with supporting the film between roof trusses.

**Tensioning Plastic:**

Wide sheet films often requires that a "mechanical tensioning" technique be used by a suitably experienced installer.

- 1) Distribute the film as outlined previously,
- 2) Clip off one end and also the first 2 metres along each side at the same end, avoiding wrinkles & creasing,
- 3) Fasten other end of film to a pulling bar or beam (see fig. 1),
- 4) Using ratchet straps – attach the pulling bar to an immovable object, (e.g. fence post/tractor),
- 5) Apply tension lengthwise to the film by tensioning pulling bar, (adjust angle as required),
- 6) Clip off the sides of the film beginning at the films' centre on each side, and working to the ends, Note: Whilst clipping sides, pull any soft lengthways wrinkles from film.
- 7) Clip off the pulling bar end of film, whilst relieving film tension, then install a batten on every rafter if singleskin.

**Note:** When using a mechanical tensioning method and to best estimate the greenhouse film finished tension, experience indicates that allowances need to be made for ambient air temperature and weather conditions, the “stretchability” of the type of film being used, whether it is a single or twin skin application and the films width that is being installed. If in doubt please contact Redpath.



### Helpful Hints

- Singleskin: Remove all slack from film and gently stretch cover so that film is under moderate “rebound” tension.
- Twinskin: Remove the majority of any drooping film between the rafters and then allow Twinskin air pressure to tension film, avoid excessive wrinkling at edge and always provide an air escape exhaust.

**CAUTION: DO NOT OVERLY PRE-TENSION TWINSKIN COVERS** Unless experienced, always install a manometer air pressure gauge prior to inflating.

### Trimming-Off

Leave a tag of film behind the clipping system of approximately 25-50mm **Note:** If skinning work is being completed Mid Autumn to Mid Spring especially on shallow pitch structures below 25degrees of pitch it may become necessary to re-tension covers over warmer month’s when films may slacken. This may incur additional labour costs.

Follow the greenhouse film handling guidelines & Duralock fastening installation instructions to ensure general cover longevity and reliability. Fitment of roof isolation battens will be required on flatter roof truss designs.

### IMPORTANT:

Redpath Pacific Ltd are unable to guarantee that the above installation techniques will suit your particular greenhouse design, the install techniques suggested are only a guide of known common techniques used in our industry.

Care must be taken to seek the best advice & use experienced persons to ensure correct installation & tensioning, + non-damaging of your greenhouse covering. Incorrect installation will reduce the life expectancy of the greenhouse film & may possibly reduce the life to less than that of the products U V degradation warranty period offered.

Redpath Pacific Ltd makes no guarantee as to the suitability of this greenhouse covering for your crop or your use. Please use due diligence and read the Technical sheet shown on the Redpath website to ascertain the suitability for your use.

Duratough greenhouse film includes diffusion characteristics, fillers and anti-slip agents built into its make up for improved light penetration throughout the crop canopy and condensation control. Duratough has 21% diffusion +10%/-0% measured as an average across its width. If a “crystal clear” or “glass clear” non-diffused style product is required you may wish to consider, Acrylic or Polycarbonate sheeting, PVC clear vinyl sheeting or glass cladding options

**Issued & dispatched as guidelines with all Redpath Greenhouse Film Sales Since March 1<sup>st</sup> 1996 + Listed on Redpath website on Greenhouse film pages.**

**Contact Redpath on Free Ph 0508 733 728 for more information, or email [redpath@redpath.co.nz](mailto:redpath@redpath.co.nz)**

