Just Tarp It: Selecting a Module Cover

Just Tarp...Your Cotton

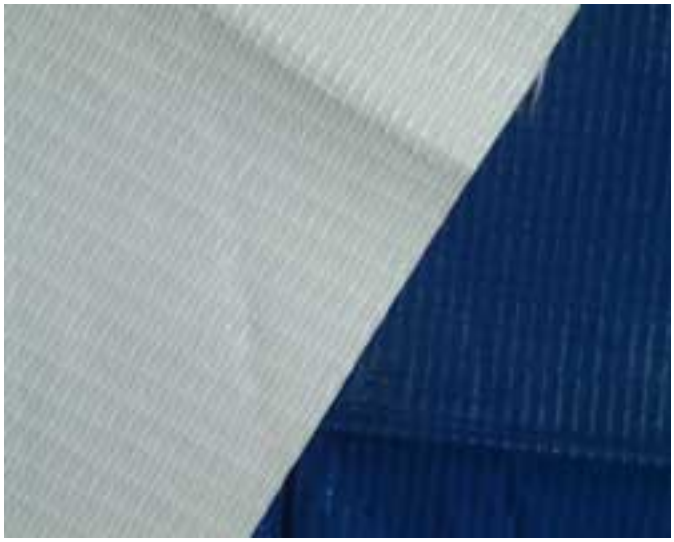
Dimensions and characteristics of the base materials are important factors to consider when selecting a module cover. Many types of cover materials with various features are available. Take time to compare the differences and evaluate each combination in relation to your needs. Careful consideration of the variety of materials and features available is important to achieving satisfactory seed cotton protection in the field and on the gin yard. Guidelines for choosing a cover that will protect your cotton from heavy rains, strong winds, harsh sunlight and other environmental elements are presented here **so you can JUST TARP IT**.

Identification Label

Module cover labels should be clearly displayed on each tarp. Insist on documentation affirming the quality of the module cover. Other information should include the manufacturer's name, address and telephone number, the date (year) manufactured, fabric construction and cover size (including top and side finished dimensions). The manufacturer's estimate of expected cover life under given environmental conditions is one measure of cover quality. Reputable manufacturers and suppliers know the strengths and limitations of their products. Manufacturers or vendors should also provide written guidelines for proper use and storage of their covers. Carefully read the information that comes with your new covers, then file it for future reference.

Selection Guidelines

Fabric

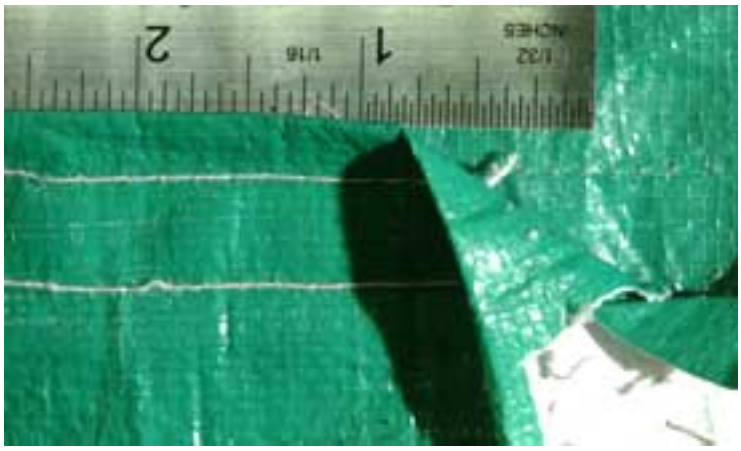


Suggestions for fabric type are sometimes misleading. In addition to fabric, the quality of the cover depends on many characteristics. Adequate amounts of ultra-violet inhibitors, coating thickness and tarp construction contribute to fabric performance. In laboratory tests, the most durable fabrics were: 1) clear, woven polyethylene tarps with light colored, double coated polyethylene laminate, usually referred to as poly tarps and 2) polyethylene terephthalate (PET) scrims with double-coated polyvinyl chloride (PVC) film laminate, usually referred to as vinyl tarps.

Even though the top two overall performers included polyethylene, it would be misleading to suggest that polyethylene is the material of choice for module covers. Other polyethylene covers included in the study exhibited less durability. Tests showed that large differences existed in the quality of cover components due to the processes used to produce some of the polyethylene fabrics.

Construction

The types of corners, configurations of straps and tie downs, sizes of strap pockets and the number and sizes of grommets may vary without significant impact on cover performance. However, look for reinforced grommets or straps that are sewn securely into the module cover. Reinforcing grommets and straps create module covers that are more reliable by offering greater pullout resistance compared to rivet-type grommets alone.



Avoid center top seams, even if they are heat-sealed. A top seam failure would make the seed cotton module vulnerable to weather damage. Center seams can be avoided by selecting module covers made from wide scrims or base fabrics. The most reliable seams are those that are double stitched.

Many tarp manufacturers use six stitches per inch in the seams creating the strap pockets. Seams with less than four to six stitches per inch may result in premature tarp failure. The stresses and strains produced when the cover is tightly secured over the top and sides of the seed cotton module, when coupled with moderate to high winds, can cause the material to elongate more than the seam's thread. This elongation results in shredding, stretching and/ or tearing of the module cover. Seam or base material failures result in the possibility of fabric and laminate fragments remaining with the seed cotton when the module is ginned.

UV-Light Stabilizer

All module cover materials should contain stabilizers to protect the covers from deterioration caused by exposure to the sun's ultraviolet light. Hindered Amine Light Stabilizers (**HALS**) have become price competitive in recent years making them the stabilizer additive of choice for many film producers. **Carbon black** based stabilizers are another type of UV inhibitor that offers the needed ultraviolet light protection. Avoid module covers containing Butylated Hydroxytoluene (BHT) stabilizers because they tend to turn seed cotton they come in contact with yellow.

Region-Specific Suggestions

For extreme climatic conditions, different combinations of module cover components are recommended. For example, in areas where high winds are common, a heavier fabric such as canvas or PVC film, laminated to a PET scrim, would be beneficial. In regions where rainfall is expected during the harvesting and ginning season, pay close attention to waterproofing and consider purchasing module covers with double coatings of laminates. **To prevent premature tarp failures, high levels of UV-light stabilizers are recommended for all regions of the Cotton Belt**.

Materials - Definitions & Descriptions

- Yarn denier (synthetic) or yarn count/number (cotton) - defines the yarn size.
  - Denier for synthetic yarns: a larger number = a larger yarn (relates to weight-per-unit length)
  - Count for cotton yarns: a smaller number = a larger yarn (the opposite relates length to weight)

Regardless of fabric, larger yarns typically produce stronger tarp bases.

- **Scrim** is the light, loosely woven base fabric in most module covers. Scrims are similar to net bags used to package produce in grocery stores or the woven bale bags used to wrap cotton bales.
- **Yarn or thread count** is the number of yarn ends or threads per inch of fabric, measured as warp ends and filling picks per inch in woven fabrics (or scrims). If two fabrics (scrims) use the same yarn size, then the fabric (scrim) with a higher yarn count is tighter woven and generally considered better.
- **Coating thickness** is measured in microns or mils. Coatings (laminations) are used to seal woven plastic scrims. A greater thickness (higher mil) is more desirable. Woven materials should be coated on both sides of the material.
- **Ultra-Violet light inhibitor** extends the exposure life of plastic materials outdoors. Manufacturers should indicate the hours of exposure the cover can withstand while retaining 80 percent of its original strength. Longer exposure time indicates a more durable tarp and under normal conditions, longer life expectancy.
- **Seams and hems** in laminated, plastic fabrics should be stitched and heat-sealed to inhibit water leakage. Good hems ensure cover stability. The preferred hem has wide seams containing at least two rows of lock-stitched thread with five to six stitches per inch.

Check List

Ask your module cover manufacturer about the following items:

[ ] YARN SIZE & COUNT	[ ] WATERPROOFING
[ ] FABRIC TYPE	[ ] LIFE EXPECTANCY
[ ] COATING TYPE & THICKNESS	[ ] COST
[ ] UV-INHIBITOR	[ ] PROPER STORAGE
[ ] SEAM CONSTRUCTION	[ ] GUARANTEE

Cost, Life Expectancy, Maintenance and Storage

Cost is always a factor in any purchase, but buying the least or most expensive tarp may not be the right decision. Anticipated product life may be used as a fair representation of quality if all other factors are equal.

Develop a program to monitor tarp usage. Record the number of times each cover is used during each season. Also, monitor the duration of exposure to the sun, windstorms, heavy rains or other extreme conditions that may occur while tarps are covering modules. Duration and intensity of exposure to sun, wind and rain are key factors in tarp life expectancy and dependability.

After the ginning season is over, thoroughly clean, dry and inspect covers before storing them. Mark and repair obvious rips and tears. After inspection, replace damaged straps, ropes, buckles or other fasteners. Only close inspection will reveal pinholes, thinned coatings and any breakdowns of UV-light stabilizers, all of which may result in seed cotton damage or loss in the module.

The following procedure can be used to detect holes or other coating problems:

1. Set up a module cover inspection area which includes a sturdy rack with a good light source above the rack. A good location for an examination rack is in a room or building that can be darkened. A rack tall enough to allow an employee to comfortably and safely walk beneath the tarp while inspecting the module cover is necessary. Keep the area beneath and around the rack free of obstructions and other potential safety hazards.
2. Unroll a tarp and place it on the rack with the top side facing up.
3. With an inspector stationed underneath the tarp, direct or **shine** bright **lights** on the top of the cover.
4.

5. **Identify** holes, pinholes and tears. Look for thin spots where the covers' coating may be flaking, peeling, breaking down or absent.
6. **Mark** problem areas for repair.
7. Remove the module cover from the rack and place it flat on the floor with the covers' top side facing up. Once again, inspect for signs of the tarp's coating deterioration, such as flaking.
8. **Cull** damaged tarps and other covers that are not worth repairing. Use price lists provided by companies offering module cover repair services when determining expected repair costs. Once you calculate what it will cost to repair a module cover, replace it if repair costs approach the value of a comparable new cover.
9. **Store repaired and inspected covers according to manufacturer recommendations** to help prolong cover life. A **cool, dry storage area** is preferable. Protect stored covers from gnawing rodents and other animals.

These practices reduce the chances of cover deterioration. Covers stored improperly or used beyond their anticipated life are more likely to fail. Check with module cover manufacturers, dealers or other module cover inspection service vendors about module cover inspection, repair and storage programs they may offer.

Protect Your Seed Cotton

Remember to build and store your modules properly to protect your seed cotton. Finally, be alert to innovations in seed cotton storage including new cover materials and handling practices. Protecting your seed cotton from the weather and from sources of contamination during storage is as important as any other step you take in bringing your product — cotton lint and seed — to the marketplace. Additional information on module construction and storage, "Just Build It," soon will be available from the National Cotton Council, Cotton Incorporated and USDA-ARS.

Disclaimer

This web page is based on the best information available and is offered as an educational service for the benefit of the U.S. cotton industry. This web page is in no way intended to be an endorsement of any module cover, product or manufacturer. The National Cotton Council, Cotton Incorporated and USDA-ARS cannot be held responsible for problems associated with module covers.

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