

DETAILS OF BOAT SHRINKWRAPPING

The purpose of using shrinkwrap in the marine field is twofold:

1. To enclose boats for protection them from the elements when they are stored outside during the off season.
2. To protect new boats as they are transported from the builder to the dealer.

Each of these applications has a different method of installation of the shrinkwrap. The only common denominator is that each uses a piece of shrinkwrap as the cover and a heat tool to shrink it.

Shrinkwrap (#4 LDPE)

The shrinkwrap itself is a 6 or 7 mil, low density polyethylene (#4 for recycling purposes). What makes this material different than construction plastic sheeting is that it contains shrinking resins, UV inhibitors, anti-brittling compounds, and strengtheners so that it will not rip or tear. We use only virgin resin material in our premium shrinkwrap.

WARNING: "This shrink wrap can burn. If heat is applied incorrectly, shrink wrap can ignite into open flame. It can also drop down on to other combustible material and cause secondary ignition and fire. If at any time you observe the shrink wrap on fire, immediately stop what you are doing and carefully inspect the area where you are working for a possible fire. Keep a fire extinguisher available at all times. Inspect the cover for up to 30 minutes after shrinkwrapping to look for hot spots".

IF THE WIND IS BLOWING OVER 10 MILES PER HOUR DO NOT SHRINK THE COVER!

Materials needed to shrinkwrap a boat for outside winter storage.

- Shrinkwrap
- Woven cord strapping
- 2" x 4" boards
- Heat tool
- Heat shrink tape
- Vents
- Hand saw
- Measuring tape
- Safety gloves and glasses
- Fire Extinguisher
- Stapler
- End Caps for each end of wooden uprights
- Ladders tall enough so that the entire surface of the shrinkwrap can be seen while heating the material.

Materials needed to shrinkwrap a boat for transportation to the dealer

- Shrinkwrap
- Hull or preservation tape and mineral spirits to remove wax.
- Heat tool
- Vents
- Fire Extinguisher

Steps in covering a boat for outside storage

1. Go around the boat to determine if there are any unusual features to the vessel. These would be outriggers, trolling motors, antennas, flimsy windshields etc. These items must be noted so they can be padded, or protected before the shrinkwrap is laid over the boat.
2. At the same time look for, and note, any damage that has already occurred to the boat. Owners will blame any imperfection on the shrinkwrap crew.

Support Structure

3. Whenever a boat is stored outside with a shrinkwrap cover it must have a support structure under the cover, with wooden uprights, to keep rain or snow from sitting on the cover and causing damage to the boat.
4. The first step in building a support structure is to run woven cord strapping lengthwise on the boat from the highest point at the bow, such as the top of the rails or lifelines, to the highest point at the stern, which would be the stern rails or cleats on top of the toe rail. This strapping must be pulled extremely tight as it is the beginning of the support structure. Once this strap is pulled tight a tape measure is used to measure from the deck, directly behind the windshield in the cockpit, to the top of the windshield. 9" must be added to this figure and a 2" x 4" cut to this length (on wide beam boats you may need a taller 2" X 4"). This will be one of the wooden uprights that will give the cover enough slope to shed rain or snow from it.
5. This previously cut board is then forced upright under the rope/strap going lengthwise on the boat. It should end up vertically just behind the windshield in the cockpit. Now a strap must be run laterally (side to side) on the vessel so that it runs over the top of the 2" x 4" and makes a cross with the lengthwise rope/strap. These can be tied to the top of the rails, cleats, trailer, or they can go around the entire boat. This strap must be pulled tight as it is part of the support structure and will help keep weight off the windshield.
6. Once that is completed, the foredeck and cockpit are measured and wooden uprights 6" taller than where the fore and aft strap normally lies are inserted under the rope/strap. Again, a cross strap is run over the top of each of these boards. These uprights must be no farther than 7' apart. The number of uprights will vary depending on boat length.
7. The tops and bottoms of each upright must be covered with Dr. Shrink's End Caps to keep them from protruding through the cover or having the base slip during the winter months.
8. This is now a good time to pad all sharp objects such as windshield corners, cleats, antenna bases, etc. **TAPE THE FUEL VENTS AT THIS TIME!** Call the boat builder if the vents can't be found. This is very important to eliminate explosions. **Again, this is not flame retardant shrinkwrap. It can burn. Keep a fire extinguisher near you at all times.**

Measuring to determine shrinkwrap size and installing perimeter band

9. A tape measure is used to measure from the top of the upright behind the windshield to however far down the side of the boat you wish to install the cover. This number is then doubled and it will give you the size of shrinkwrap you will need. (standard shrinkwrap sizes are from 12'-40'). You must also allow 6" of additional shrinkwrap length on each side of the boat to tuck around and under the perimeter band going around the boat.
10. The next step is to install a perimeter band around the boat which is used to hold the shrinkwrap on the boat. There are several method of attaching this band around the boat. One is to run a rope/strap through the bow eye, around the boat, and through the two eyes on the stern of the boat. This rope/strap is then pulled tight. A Second method is to tie loops, made of rope/strap, down from the cleats or stanchion bases to the level that you wish to cover the boat. These should be hung every 3'-4' around the hull. The perimeter band is then run through these loops and pulled very tight. A Third method is to use "stick-ups" which are suction cups stuck around the hull of the boat, every 3'-4', which hold the perimeter band in place while you are tucking the shrinkwrap over and under it. A Fourth method is to tape the shrinkwrap to the hull with hull/preservation tape, thereby eliminating any perimeter band at all. This is the most common way for boat builders to attach covers.

Installing the shrinkwrap

11. Once the support structure is in place, all sharp objects padded, and the perimeter band is attached—or tape is going to be used in place of the perimeter band, the shrinkwrap can be put on.
12. The proper size shrinkwrap is now put on a roller at the stern of the boat. Coming from the flat stern allows the wrap to be pulled over the boat much easier than coming from the bow end. The wrap is pulled over the boat making sure that there is enough extra at the bow and stern to tuck around and under the perimeter band. This will help hold it in place in case the wind is blowing.
13. After the wrap has been pulled over and tucked at the ends the rest of the wrap can be unfolded. There will be pleats of excess wrap at the windshield corners, corners of the stern, and as the wrap goes from the bow aft. The pleats at the windshield must be folded to the rear of the boat and tucked over and under the perimeter band, or taped in place if there is no perimeter band. This will assure that there is enough wrap fore and aft and side to side.
14. Now the rest of the wrap can be cut 6" below the perimeter band, or just taped onto the boat, if there is no perimeter band. Once this is done all of the material can be tucked around and under the band or taped around the hull.
15. After being tucked around and under the perimeter band the heat tool is used to apply heat directly above the band which heat welds the outside of the wrap and the piece tucked under the band. As you come to pleats or seams these are heat welded at the same time.
16. When the entire perimeter and pleats and seams have been welded it is time for bands that go from the perimeter band under the boat to the band on the other side. These keep the material and perimeter band from rising as the shrinkwrap shrinks. If these bands are not used there is also a chance that snow or rain sitting on the cover could raise the perimeter band and allow these to pool up in the cover. This could cause tremendous amounts of damage to the boat.

Shrinking the cover

17. Once the bands are on it is time to begin shrinking the entire cover. It is important to first shrink around the boat from the perimeter band, or taped line, to the rub rail on the boat. Using the heat tool is very similar to spray painting. The trigger is pulled as you move the heat back and forth, in a horizontal fashion, across the shrinkwrap. You should begin at the lowest part of the cover and let the rising heat work for you to start warming the plastic. The ultimate goal is to have a tight top that will repel snow and rain, and this method will pull additional slack out of the top so that it will not take as much shrinking when you are ready for that area.
18. The rest of the cover can be shrunk once you have completed heating to the rub rail. Always start at one end of the boat and work in the same direction around the boat. This will give a tighter, more protective cover. Again, the ultimate goal is a tight, wrinkle free cover that will shed snow and ice.

Hole patrol and venting

19. It is very important to look over the entire cover for holes, weak spots, or pleats that did not get heated enough. These should be taped with heat shrink tape. Once the tape is applied it should be warmed slightly to heat the adhesives and then rubbed to remove any air bubbles. If a hole is bigger than the tape that you have, then a piece of shrinkwrap 3" bigger than the hole should be placed over the hole and taped around the entire edge area. Heat the tape with heat tool and then shrink the patch. It will be good as new.
20. The last step is to ventilate the cover with self adhesive vents. There should be anywhere from 3 to 10 vents attached to the most vertical surfaces around the boat. By putting the vents around the boat you are causing cross flow ventilation to occur. This will help eliminate any moisture and mildew buildup.

Taping on covers for boat builders and dealers

1. Most builders tape their shrinkwrap covers on and they provide no support system on the top of the boats. These covers are designed only for transportation and not for protection against snow load or heavy rain damage. Some dealers in southern states also use this method.
2. It is very simple to cover boats this way. First de-wax the hull with mineral spirits where the tape will adhere to it. All sharp objects are padded, the shrinkwrap is laid over the boat, the shrinkwrap is trimmed and taped all around the hull, then heat is applied to shrink it. Following that the OEM's usually patch holes and sometime vent the covers.