

Hot Air Welding of Vinyl Fabrics

The outline below is intended to describe the methods of hot air welding as it relates to patching vinyl tents.

Equipment Needed:

- Hand held hot air welder, Leister brand or others
- Hand Roller, 20mm or 40mm widths
- Scissors

Preparing the Surface:

Vinyl patch repair requires a smooth and hard surface to lay down the vinyl tent. Ideal surfaces are stainless steel counters, linoleum or vinyl floors, some hard compound boards, or at least very smooth, dense plywood. Area needs to be clean of all dirt and foreign matter. If using plywood, wood must be unpainted.

Preparing the Tent:

Tent surface needs to be washed clean of dirt and foreign matter.

Preparing the Patch:

The patch repair will either take place from the top or underside of the tent, depending on the severity of the hole or tear and the "ugliness" to cover. This process usually gives the best visual look to the patched area.

Patch should always be cut 1" – 2" larger than the area to be repaired. The larger the patch, the easier and safer it is to work with. When the patch is cut out, all corners should be slightly rounded so it lays down easily and does not catch.

Preparing the Hot Air Welding Gun.

Turn up heat to the appropriate setting for the weight of vinyl being used in repair. 15oz-16oz. laminated vinyl works best on setting #6, specific to Leister Hot Air Welder.

Welding process: Lay out tent parts to be patched and put the cut out patch in place, making sure it covers the hole or tear in tent. Hint: Use a piece of tape to flag it or hold in place while you prepare to work with the welder. Insert the tip of the hot air welder under the patch, close to one corner, holding the patch with roller, and as the vinyl heats up, move away from the roller and using the roller action back and forth, rub the melted vinyl down tight to the tent surface. Continue around the patch at the speed required, to get a good weld. On welding all sides, if there are edges that are loose, go back and warm them up with welder and roll them down for a second time. Turn tent over and heat up and roll down any loose edges around the patch area from the opposite side.

Testing your welding ability.

Prior to beginning your welding, take some scrap fabric of the same weight and set the gun, heat range and run a practice test to make sure it is hot enough to get a sufficient weld, yet not too hot to burn and scorch and shrink vinyl fabric. After running a test weld, pull on both pieces to see whether vinyl separates from the scrim, that way you know you have a strong weld

Tips on Hot Air Welding Maintenance.

At the finish of any hot air welding session, turn the heat control to zero, but leave the fan on for several minutes to cool down the heating gun. This improves and saves the life of the heating element.

Anytime the welding tip gets burnt or stuck on vinyl it should be cleaned immediately with chemicals or wire brushing off the burn vinyl.

Sticky Back Patching

In today's market, there are 2-3 manufactures of adhesive vinyl patches that simply peel and stick. This is undoubtedly the easiest way to get a quick patch. Sticky back patches you still contend with a certain amount of adhesives squeezing out from the edges under the patches, they should be powdered with Talcum Powder (Baby Powder), once they are applied

CAUTION: On sticky patches, life of patch may be shorter than glued-on patches and definitely shorter than hot air welding patch. Pressure sensitive patches tend to let go of adhesion after a few years of aging and wear and tear. It is simply to pull them off, clean the area with appropriate solvents and stick on a new patch.