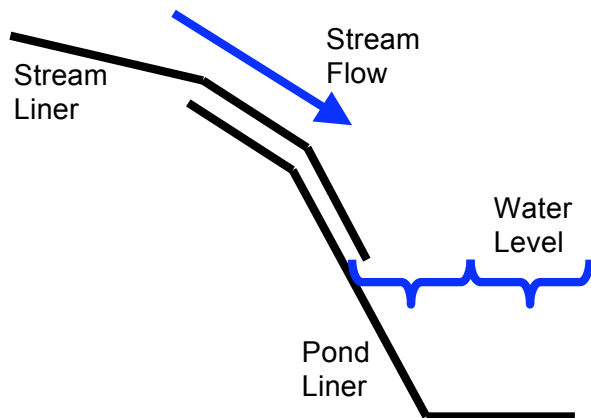


# Seemingly Impossible Seams

By Jan Schreier

I've often been asked about seaming two pieces of liner together. Can it be done? If so, what is the best way? People who want to expand their original pond usually ask this. Or sometimes, due to settling, or a changing surrounding landscape, extra liner is now needed along the edge of a pond. My advice is usually: Don't do it. It may last for a year or two, but you'll end up needing to redo it and start all over again. There are a few exceptions to this rule. One is along a streambed. You can easily use one liner for the stream and one liner for the pond as long as two things occur: The pond liner is fully capable of holding all the water at the correct level when no stream is running; AND the stream liner is higher than the pond liner, and overlaps it by at least 18 inches. In this case, no seam is needed as long as the stream liner overlaps in the direction of water flow. See diagram 1. Note that if the water level was actually higher than the bottom of the stream liner, the stream liner would end up "floating" on the water. Functional, but not visually appealing. In this case, you could keep the stream liner in place by adding rocks to weigh it down, or you may want to seam the edge of the stream to the pond liner.

**DIAGRAM 1: OVERLAPPING LINER IN A STREAM**



If you have the luxury of seaming two new pieces of liner, the best way is to lay them both flat on a clean surface like a driveway. Clean both edges of the liner with a clean cloth and an astringent like rubbing alcohol or hydrogen peroxide. Make a triple seam using two types of seam tape: Double-sided Sticky Tape and Single-sided Patch Tape. See Diagram 2. First seam by overlapping the two edges with the double-sided sticky tape. Then seam over the top edge with the single-sided patch tape. Once these are both seamed, then flip the whole thing over and seam the last edge with the single sided patch tape. This provides a triple seam that is waterproof even if one of the tapes should develop a channel.

**DIAGRAM 2: A TRIPLE SEAM**



Technique used to seam is just as important, if not more, than the materials used. It is extremely important to keep all of your edges and the tape itself very clean and free from any dust or debris. Also, use a high quality tape primer intended for EPDM tape.



*Use a high quality tape primer.*

The tape comes in a roll that has a non-stick cover layer. When using double-sided sticky tape, lay one side down on the liner, leaving the top sticky side completely covered with the protective non-stick cover. Start at one side, and make sure the tape lays flat with no bubbles, bumps or channels. Smooth all edges by pressing firmly on the tape through the non-stick cover until the primer has caught hold of the tape, and you are sure that the tape is firmly adhered. Next, lay the second liner that needs to be seamed on top of the non-stick cover to make sure that the entire length is covered, and fits without any folds. Prime the underside of the liner that overlaps over the seam. Starting at one side and slowly making your way across the whole tape, pull away the non-stick cover while pressing down on the primed liner from the top, non-primed side. Again, the most important thing is to leave no folds, creases, bubbles or channels along the seam. Work in small sections about 1 foot at a time, pulling away the non-stick tape cover while pressing the liner on top.

I've used the triple seam technique with good results when it wasn't practical to use one piece of liner on new construction. However, 90% of the time when you want to seam a pond, at least one part of the liner has been under algae-infested pond muck for a year or more. How can you seam that? The answer to that is that it is just about impossible. Recently, I agreed to re-seam an existing pond in which the original seam failed and the pond was leaking. I'm attaching photos to show just how difficult it is, so you know what you're getting into.



*Clearing the bad seam*

The first task is to clean the liner as best you can. Use clean rags, and lots of water. You'll have to scrub hard to get rid of hard mineral deposits. Once it is clean, use an astringent like rubbing alcohol to get rid of any oils and grime not removed with water. Completely dry the area. Place a flat board under the area to be seamed to provide a clean, flat surface.



*Completely clean & dry area, and place flat board underneath to provide a flat surface.*

This seam repair will use a double seam along each edge of the old seam tape since this application was impossible to access the bottom side of the liner. Liberally brush tape primer along the surface to be taped. Working a section at a time, if it is a windy day with dusty debris, lay the double-sided tape along the edge to be seamed. Leave the non-stick cover on the entire length. Press firmly to ensure good contact and leaving no bubbles, bumps or channels. Use one piece of tape along the entire length to be seamed.



*Leave the non-stick cover on double-sided tape to press firmly and adhere first side to the liner.*

Once the double-sided tape is in place, repeat the process over the top of that with single-sided patch tape. Usually the double-sided tape comes in 4" widths and the single-sided tape comes in 6" widths so the single-sided tape can completely cover the double-sided tape. It is very important that the single-sided tape be one continuous piece. The hard part is ensuring that the tape is not skewed such that by the time you get to the other end of your seam, you are still centered along the seam tape. For this reason, lay out the entire single-sided tape (with its non-stick protective cover still on) so that you can tell that the seam is not crooked when starting at one end. It's easier if you have a second pair of hands to help. If your seam is longer than about 4-5 feet, it is sometimes easier to start in the middle and work your way towards the sides, working one side at a time. What you need to do if this is the case, is to cut the non-stick cover on both the double-sided & single-sided tape in the middle of the seam and working in one direction: Remove a section of the double-sided tape non-stick cover. Rub primer on the area and beyond per primer directions. Start laying the single-sided tape on top as you remove the non-stick cover from the single-sided tape.





*Remove the non-stick covering at the same time you are pressing the tape onto the liner. This eliminates the possibility of accidentally sticking the tape to itself, and minimizes airborne debris from attaching itself to the tape.*

Again, work slowly and evenly remembering to completely work out any air bubbles or channels. Press firmly to ensure good adherence paying particular attention to areas of the old liner that can't be flattened completely.



*Press firmly to ensure good adherence, removing any bubbles or channels.*



*Pay particular attention to areas of the old liner that can't be flattened completely.*

Repeat with the other side of the bad seam. Hopefully, this will give you several more years of operation without leaking. But, realistically the only guaranteed fix is to rip everything out and start over with a new single piece of liner. This is why I always advise on new construction to never skimp on the liner, and protect your liner as you install it. If using EPDM liner, make sure it is at least 45 mils thick, and in good condition before you start. It is easier to inspect for holes while it is lying in the driveway, than when it is in your pond full of rocks. Put good padding below the liner. Old carpet padding or carpet remnants work well, fabric felt underlayment meant for ponds works well too. When placing large boulders in the pond, use padding on top too. This ensures that sharp edges don't rub or poke through, and enables you to shift & slide the boulder in place without tearing the liner. Don't use sharp-edged rocks or stones in the pond. And NEVER trim your liner less than 18 inches from where you think the water will go. Fold the liner under itself, and in years to come, when you get a little settling, or your waterfall splashes too much, you'll have that extra bit of liner to pull up and give you that extra room. And hopefully, you've built your pond large enough that you'll never need to expand and you'll never need to seam a liner. Trust me, it's better that way.