

Compressive Stress Cracking of Folded Pool Liners

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From time to time, a customer will report the cracking of a folded pool liner when stored. This cracking normally occurs at the corners of the fold. This is a phenomenon that can occur with any flexible vinyl. The Industry has seen this happen in pool liners, tarps, roofing, pond liners, etc. This cracking can be called stress cracking, pressure cracking, or even cold cracking. The following is an explanation of the causes and recommendations to minimize the impact.

This stress cracking is caused by a combination of time, temperature and pressure. If vinyl is folded and stored, the folds are under a great deal of pressure or stress. When folded liners are stacked one on top of the other, the pressure can be even greater. Storing the liner when the temperatures are very warm, can cause the vinyl to become soft and for the plasticizer (additives used to soften vinyl) to move away from the area that is under pressure. The longer the liner is stored, the larger and deeper the cracks can become. This problem can occur regardless of formula, stiffness, color, or embossing. There is no way to prevent this from happening.

First, try to keep the number of folds to a minimum. Keep the number of liners stacked on top of each other to a minimum. Use cartons that will help support the weight of other cartons stacked on top. Minimize the length of time the liners are stored.

Avoid too much heat or cold whenever possible. Store liners at room temperature, 70-72 F. During the winter or in cool storage areas, be sure to warm the liners to room temperature for about three days to minimize the cracking when the liners are unfolded. Do not unfold or install liners at temperatures below 70-72 F. During spring or fall, particular attention should be paid to temperatures in the early morning hours.

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