

Scott System

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Urethane Formliner Application



Scott System Urethane Formliner Application Guide

For use by Contractors as an application guide to Install Urethane Formliners.

Revised June 21, 2023

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READ BEFORE USE

The following recommendations cover the basic use of Scott System formliners in the field. We recommend the following items to ensure positive results.

1. Each shipment must be checked BEFORE signing and accepting any delivery at the jobsite. Note any damage to the crates, pallets, and formliners on the freight line's carriers Bill of Lading (BOL). No claims for damage can be made without a signed and documented delivery ticket / BOL. Please refer to Scott System's terms and conditions for more details.
2. Protect formliners from excess exposure to ultraviolet (UV) rays and freezing temperatures. Indoor storage is recommended. When proper storage is not available, covering formliners with a tarpaulin (tarp) or black plastic is recommended. Store and use formliners at temperatures between 40 degrees F and 140 degrees F.
3. Verify lines and levels of formwork and formliner patterns are within allowable tolerances before use.
4. A release agent must be applied to formliners prior to use with concrete. Use only approved release agent, Scott Lease 440, or Cresset 880. No equals are accepted.
5. Thoroughly vibrate concrete to achieve consolidation and minimize voids. Internally vibrate into previous lift to avoid lift lines. Avoid vibrator contact with the formliner.
6. Remove/strip formliners from concrete within 24 hours after concrete placement if acceptable. The form can be replaced back onto the wall for the concrete curing specifications, but the initial strip is recommended to be within the first 24 hours of the pour.
7. Proper cleaning and storage of formliners is required to obtain optimal results. All excess release agent should be blown or wiped off before the form and liner are placed back into service.
8. Elastomeric formliners comply with toxic characteristic leaching procedure (TCLP) test and may be disposed of in landfills.

Disclaimer: Scott System is a formliner manufacturer providing a component to be used, maintained, and installed by the Purchaser. Scott System has no control over the use of the product when in the care and custody of the Purchaser. Scott System will not be liable and/or responsible for any claims, delays, back charges, damages or withheld payments because of utilizing our product.

Limited Warranty: Scott System warrants its products against defects in materials (materials to be of consistent quality within manufacturing specifications) and workmanship and will perform as represented, provided that the concrete construction methods are consistent with the manufacturer's recommendations. Manufacturer's obligation under this warranty shall be limited to replacing or refunding the purchase price of that material supplied.

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Section 1: General Information

Urethane formliners by Scott System can be produced in almost any size and depth. Made of a two part elastomeric-urethane, they ensure both impressive durability and consistent reusability in addition to the most realistic finish. Scott System formliners work with cast in place, tilt-up, and precast applications.

Section 2: Materials and Tools

The basic materials needed to attach and modify urethane formliners include:

- Screws for attachment to formwork.
- Silicone caulking for seamlines, voids, and modifications.
- Lawson #90281 Rubber Bonder or similar product for repairs.
- E-6000 Rubber Mender or similar product for repairs.
- Scott System recommended form release agent.

The quantities of materials needed will vary with the size of the project and the method of attachment.

The basic tools needed to attach and modify urethane formliners include:

- Tape measure
- Chalk line
- Carbide tip skill blade with 24 teeth
- Utility knife
- Fine Tooth or Smooth Edge Saber saw
- Hand saw
- #36 grit belt or disc sander
- Drill bits for either steel or wood
- Hole Saw
- Natural brissel brush for cleaning
- Bent screw driver for cleaning
- Electric drill
- Hammer
- Other hand tools depending on the attachment method
- Sprayer (for form release agent) with a wand extension
- Personal protective safety equipment (PPE)

Section 3: Cutting and Sanding

CUTTING

Formliner is a synthetic rubber. Too much friction during cutting will cause the formliner to melt and gum-up saw blades; use a slow, steady pace. A worm drive saw with the water feed attachment and air works well to keep the liner cool while minimizing gum-up on the blade. If you must use a saw, go slow and use a lubricant like WD40 in advance of the cut. Let the blade work for you. To cut a THIN pattern formliner without plywood, a utility knife is recommended. Several deep passes will work better than trying to make one deep and continuous pass. A hydro edge formliner is a urethane formliner that is either backed by or submerges plywood (typically 3/4" AC grade) into the wet cast urethane during fabrication. It is best to secure the formliner and utilize a guide for cutting straight edges.

Recommended Cutting Procedure:

1. Snap a line.
2. Nail a guide down on the liner and into the back up material.
3. Cut or saw along the guide. The guide will also hold the liner down flat on the back up material.

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SANDING

Formliner can be a challenge to cut, but it is easy to sand. Sometimes it is easier to take off 1/8" with a disc sander than to try and shave it with a circular saw. The sander will help clean up a cut surface. After lamination it is easy to dress the edge with a sander. Use a sander to put a bevel on the edge or to "clean" the cut and take off high spots.

TO DRILL

Steel or wood bits will work. A *HOLE SAW* will cut precise, clean holes for the bigger ties. It is best to drill from the face side. Working from the back can cause delaminating of the formliner in the drilled opening area. Apply silicone to the plywood in the drilled opening. The silicone will help seal this area and protect the opening from excessive moisture. Tie holes tend to swell up and become ragged after a few casts. Minimize the effect by avoiding moisture contact with the plywood. Also, a bottle brush dipped in release agent will swab out any concrete matrix if used between the pours to clean the tie hole.

Section 4: Repairing Tears and Cuts

Formliners can be repaired by using commercial rubber adhesives. Follow all product directions and safety precautions. Scott System recommends:

1. Lawson #90281 Rubber Bonder or similar product. This product is a fast-acting glue like a contact adhesive.
2. E-6000 Rubber Mender or similar product. This product will cure to be just as flexible as the formliner itself. It usually cures in about 4 hours and can be sanded after it is fully cured. E-6000 can be used to fill voids and then tooled to shape. This product is also good for re-bonding the formliner to the plywood and small repairs.

Section 5: Release Agents and Formliner Application

Architectural concrete forms are not going to cycle as fast as smooth faced forms. They will strip harder, and more care must be taken with them. Formliners must properly release with an approved release agent that is non-staining and non-reacting. Scott System's formliner requires a coating of release agent between each use. Scott System approves and recommends the following release agents for use with its elastomeric formliners:

- | | | |
|--------------------|----------------------|--------------|
| 1. SCOTT LEASE 440 | SCOTT SYSTEM | 518-383-0500 |
| 2. CRETE-LEASE 880 | CRESSET CHEMICAL CO. | 419-669-2041 |

If you prefer to use a different release agent, we recommend avoiding products with high solvent concentrations. Release agents with high solvent concentrations will make the formliner swell. Additionally, it is recommended that test pours are completed to determine the effectiveness of the release agent when stripping the formwork from the concrete.

NOTE: Using a release that is not approved, will void any warranty protection and longevity of the material. Release agent should be applied as close to pour time as possible.

RELEASE AGENT APPLICATION:

1. Spray release agent on both sides of the pattern, in all directions (up to down and left to right) and perpendicular to the texture. For best results, the formliner should be lying flat on the ground ensuring the release agent saturates the formliner and soaks in. If spray is applied in only one direction, the release agent will not be applied to the far side of the pattern. Apply a LIGHT, even coating ensuring complete coverage on both sides of the pattern.
2. Utilizing a natural bristle brush, scrub the release agent into the formliner where release agent had been applied.
3. Tight patterns, 1/4"-1/2" etc., require extra care because it is difficult to spread the release agent between the tight patterns. Be sure both sides are covered.
4. Be sure to apply release to the formliner edges and the form joints as well. This provides a slipping action from one form to another and helps to reduce buildup on the form edges and facilitates stripping.
5. A light coating is best. More is not always better.
6. **Notes on re-application between pours included in Section 6.**

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Section 6: Attaching to Formwork

Note: Means and methods are the responsibility of the Purchaser. We are offering recommendations that will assist in achieving the desired result. Methods may vary for different applications.

1. Level and square the formwork so that proper alignment of the liner can be made. Dimensions should be marked so that edges, patterns and joints are square.
2. Working with one sheet at a time, position the formliner against the formwork so that edges, patterns and joints are square.
3. Elastomeric formliners can be attached to the forms from the front or back of the form. Screw the liner to the formwork with screws spaced approximately 12" on center around the perimeter and 18" to 24" on center throughout the field. Self-drilling drywall screws are recommended as easy to install. If screwed into the face of the liner, the head of the screw can be covered with a silicon or urethane caulking material.
4. Should joints be required, compress the joint as tightly as possible, without buckling or distorting the pattern. Seal all joints by caulking or gasketing to prevent grout joint leakage.
5. Dress the joints and edges with a utility knife or sander to match pattern features as closely as possible
6. Cover the formliner when it is not in use to prolong the life of the material and pattern.

Section 7: Stripping and Setting

Note: Means and methods are the responsibility of the Purchaser. We are offering recommendations that will assist in achieving the desired result. Methods may vary for different applications.

1. A porta-power self-contained jack can be used to start stripping the form away from the concrete.
2. Begin slowly by building up some tension against the form. Wait about 30 seconds, and then gently pull the form and formliner away from the concrete. Remember you are working AGAINST SURFACE TEXTURE and SUCTION.
3. Add a little more pressure and wait again.
4. If a pry bar is needed, be sure not to pry directly against the liner surface. Place something (i.e. a piece of Styrofoam or plywood) between the bar tip and the liner.
5. On some deep textures it may help to pour water down into the crack between the liner and the concrete. It acts as wetting agent to help break the suction. In extreme cases you may add a liquid detergent to the water.
6. If you need leverage down in the form, don't use bricks or other sharp items. A piece of Styrofoam block jammed into the opening works well. Rock the form back and forth.
7. **Architectural forms should be stripped in 24 hours.** The form can be replaced back onto the wall for the concrete curing specifications, but the initial strip needs to be within 24 hours. The longer hydration continues, the tighter the suction between curing concrete and rubber liner will be, making for a more difficult strip.
8. Once the formliner has been stripped, prepare it for your next pour:
 - a. Use the bent screwdrivers to clean the joints and form edges of buildup. Check for buildup in pockets of liner face.
 - b. If material has built up on the face of the formliner, clean with high pressure hot water and soap. NEVER use a wire brush on the liner. Always use a natural bristle type.
 - c. Swab out the tie holes with the bottle brush and release agent.
 - d. Release agent should be re-applied as needed. **Reapplication recommendations:**
 - I. Spray from bottom to the top of the formliner in the direction of the pattern. This allows the release to run down the texture face.
 - II. Spray at a 45° angle up and underneath the texture.
 - III. Spray both sides of the flute (weave) and edges.
9. When setting the form into place for the next lift, avoid contact with rebar ends and stubs. Occasionally a kick plate between the form edge and the landing can give some protection against tearing the liner and plywood edges.
10. Be aware that the following factors can make stripping very difficult:
 - a. Leaving the liner in the concrete for more than 24 hours.
 - b. Not cleaning build up of material between pours.
 - c. Steam curing and exceeding temperatures over 140°F.
 - d. Incorrectly stripping liner against the grain of the texture.

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Section 8: Shipping and Storage of Formliners

SHIPPING: Although careful measures are taken at the factory to protect your shipment, occasionally freight arrives in poor condition. You have the option to refuse shipment if it is damaged. Contact supplier immediately. If your shipment is damaged upon arrival at the job site, please make a note of it on the driver's delivery ticket. Your note must include the nature of the damage, which parts have been damaged, date and time of delivery, contact information, and photographs of the damage. Scott System does not ship torn or damaged goods. Claims need to be made immediately.

STORING: All formliners are sensitive to the effects of sunlight, ultraviolet rays, and extreme weather conditions. Formliners should never be stored outside in direct or indirect sunlight. When not in use or being cleaned, formliners should be stored either indoors or under black polyethylene. Ultraviolet rays may cause the formliner to become brittle or may cause discoloration, which could be translated to concrete surfaces. Formliners should never be exposed to temperatures above 140° F (60° C). Excessive temperatures could cause permanent deformation. Ensure petroleum-based products do not come in contact with the formliner or it could degrade the material. If you band liners together, use edge protectors so you don't cut into the liner.

**Thank you for your purchase of Scott System Formliners.
Please call us at 518-383-0500 for any assistance with our products.**