SIKA® FLEECE SATURATOR
APPLICATOR MANUAL

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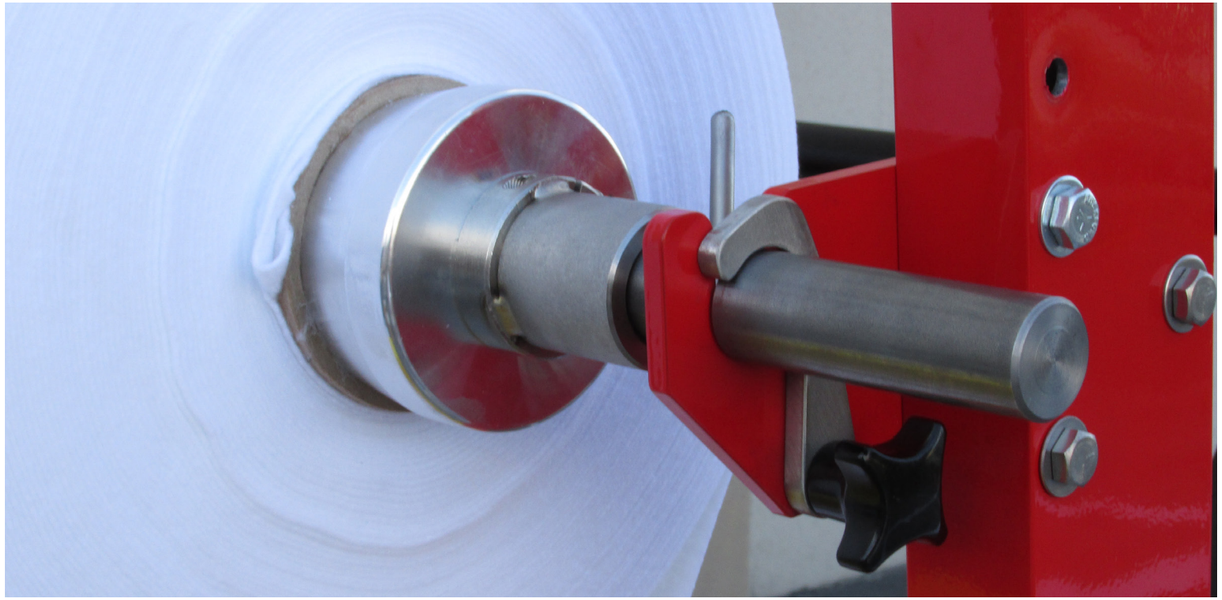
INTRODUCTION

The Sika Fleece Saturator is a manually operated application machine that saturates Sika fleece reinforcement with Sikalastic liquid resin and applies the saturated membrane on the prepared substrate surface in one operation. When used properly, the Sika Fleece Saturator minimizes the need for supplemental hand backrolling. Depending on building geometry, significant increases in membrane application productivity should be expected.



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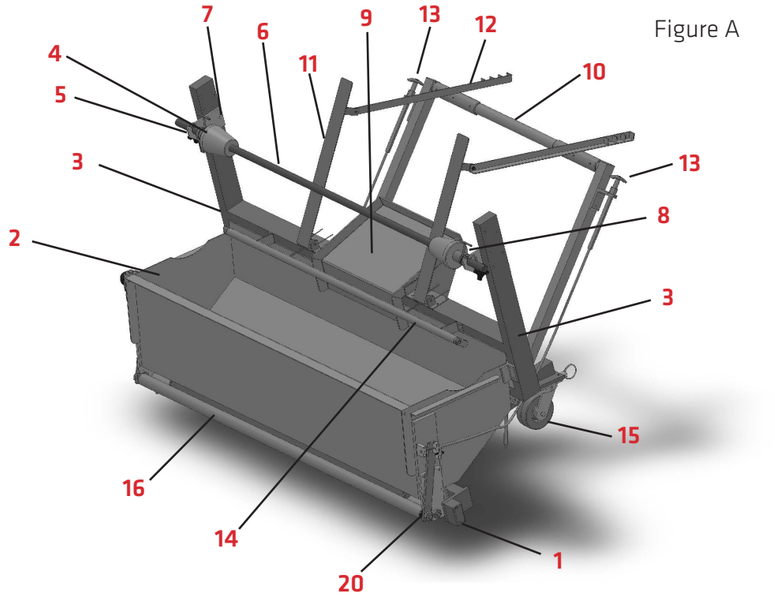

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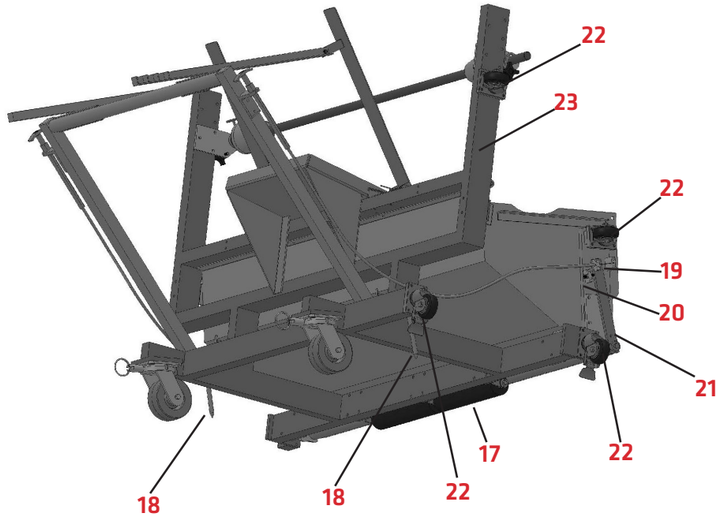

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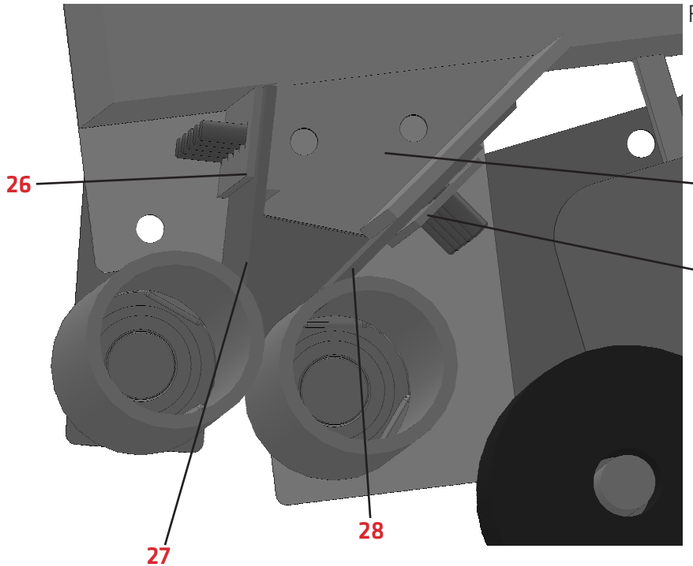
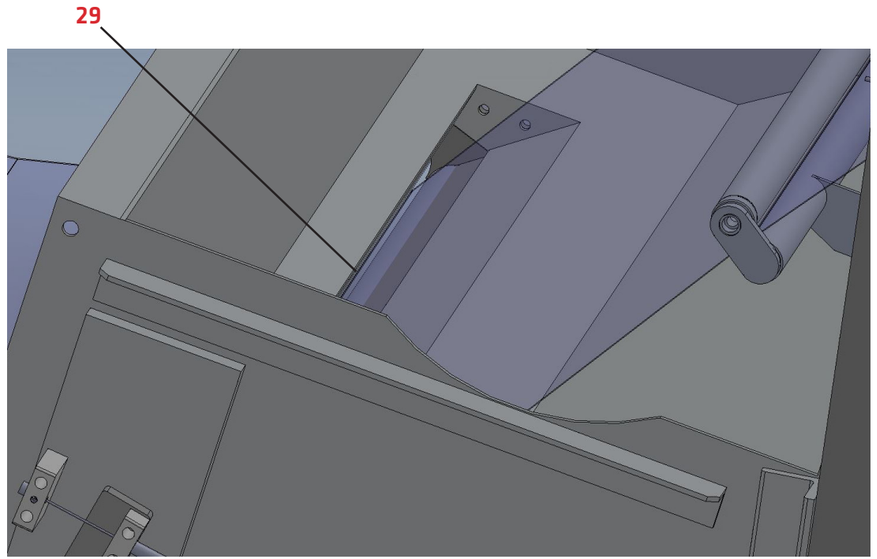


Figure C



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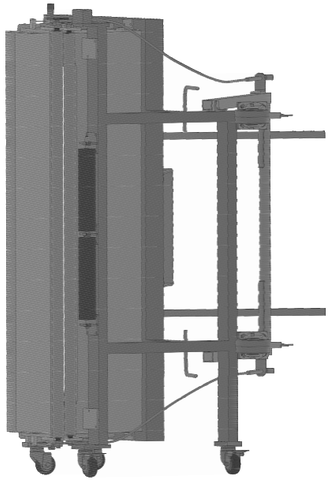


Machine shown tilted on end to fit through doors.

Basics of Operation

The Sika Fleece Saturator is intended to be pulled backwards at a slow, even rate by the operator, who is responsible for the following:

- Controlling fleece roll tension to prevent wrinkles
- Controlling side overlap width to achieve minimum 3" overlap
- Monitoring resin bath resin level to avoid unsaturated fleece application
- In order to ensure fully saturation of the Fleece, the operator has to adjust his walking speed to the resin level in the resin bath. Lower resin level = slower walking speed

TYPICAL WALKING SPEED: 40-50 FEET PER MINUTE

IMPORTANT: Operator awareness of roof edges, skylights, penetrations, and other potential tripping/falling hazards is critical to the safe operation of the Sika Fleece Saturator. It is highly recommended that the operator be supplemented by a quality assurance/safety person who can alert the operator to tripping/falling hazards as well as monitoring the quality of the installed membrane. This can be the same person who is responsible for reloading the fleece saturator with additional resin and rolls of fleece.

MACHINE OPERATION

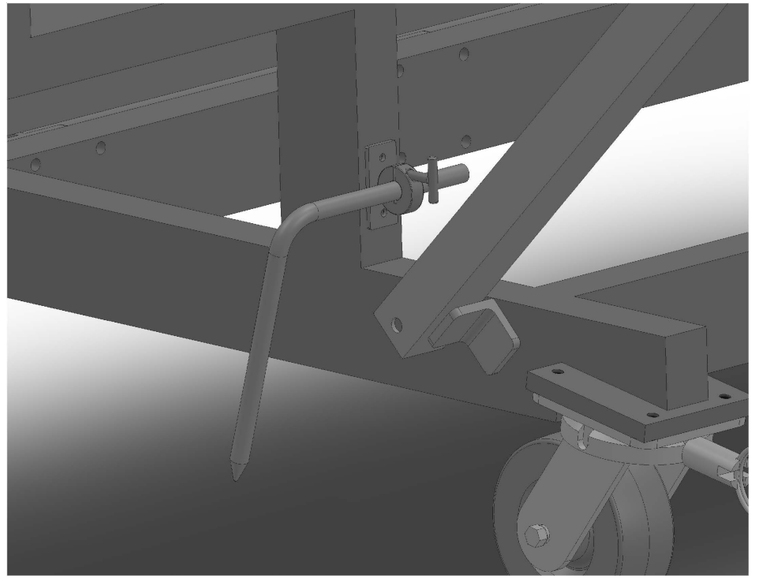
Slot Width Adjustment

1. **IMPORTANT:** Before adjusting the slot width, make sure that the resin slot closure controls have been pushed in and the slot is open.
   Controls Pulled Out: Slot Closed
   Controls Pushed In: Slot Open
2. The slot width is controlled on either side of the machine by means of hex-drive screws. The screws should be adjusted to achieve a consistent slot width across the machine, and to ensure that the saturated fleece is neither over- nor under-saturated.
3. To adjust the slot width, first loosen the resin slot locking screws on both ends of the resin bath. This will allow the width of the resin slot to be varied.
4. Next, turn the resin slot adjustment screws clockwise to increase the slot width, or counter clockwise to decrease the slot width. Use the gap plates for the initial adjustment.
5. Tighten the resin slot locking screws on both ends of the resin bath.
6. Pull out the resin slot closure controls and ensure that the slot is closed.
7. **IMPORTANT:** Initial slot width adjustment should be performed prior to resin loading. Final adjustment will be made following application of 5-10' of saturated membrane.

MACHINE OPERATION

Fleece Overlap Adjustment

1. Ensuring adequate fleece side overlap is an important machine adjustment to be made prior to resin application. Each subsequent saturated membrane sheet must overlap the previously applied sheet by a minimum of 4". Backrolling across the width of the saturated fleece will pull the fleece and reduce the overlap by approximately 1", yielding the required 3" overlap.
2. The fleece overlap indicators on either side of the machine can be adjusted in or out by loosening the lock screws and sliding the overlap indicators so that the downwards pointers mark the correct fleece overlap.
3. Secure the fleece overlap indicators in place by tightening the lock screws.



MACHINE OPERATION

Saturated Fleece Application

1. Once the initial slot width and fleece overlap indicators have been adjusted, fleece roll properly mounted, and the resin bath filled, apply the first 5-10' of saturated fleece to confirm proper fleece saturation.
2. Line up the machine so that the saturated fleece will be applied in a straight line.
3. IMPORTANT: Lock the front wheels by pulling out and turning the lock ring on each wheel until the lock ring snaps in place and the wheels no longer swivel. This allows the fleece sat urator to track straighter during operation.
4. Secure the 12" - 24" of dry fleece that extends out from the resin slot by laying a starter board on the fleece. Standing on the board is the most straightforward means of holding down the dry fleece.
5. Push in the resin slot closure controls to open the resin slot.
6. Begin pulling the fleece saturator down the roof until 5 - 10' has been applied to the substrate.
7. Pull out the resin slot closure controls to close the resin slot.
8. Backroll the membrane in the normal manner.
9. Visually confirm that the fleece is fully saturated and that there is sufficient resin between the substrate surface and the membrane so that an adequate bond is achieved.
   Too Much Resin – Roller slides on membrane surface during backrolling. Puddles of resin pulled from beneath the membrane during backrolling.
   Too Little Resin – Fleece texture clearly visible on membrane surface. Spotty resin left on underlying substrate surface.
10. Adjust the resin closure slot width as required to achieve proper saturation and substrate bond (see above Slot Width Adjustment section).
11. **IMPORTANT:** Final adjustments should be made ¼ turn at a time to adjust the slot width once the machine has been initially set up with the gap plates.
12. Continue with the application of the saturated fleece.
13. **IMPORTANT:** At the end of a run or anytime that the fleece saturator must be turned around or maneuvered around a penetration, etc., unlock the front wheels by pulling out and turning the lock ring on each wheel until the lock ring snaps in place and the wheels swivel freely. This allows the fleece saturator to be easily turned.

MACHINE OPERATION

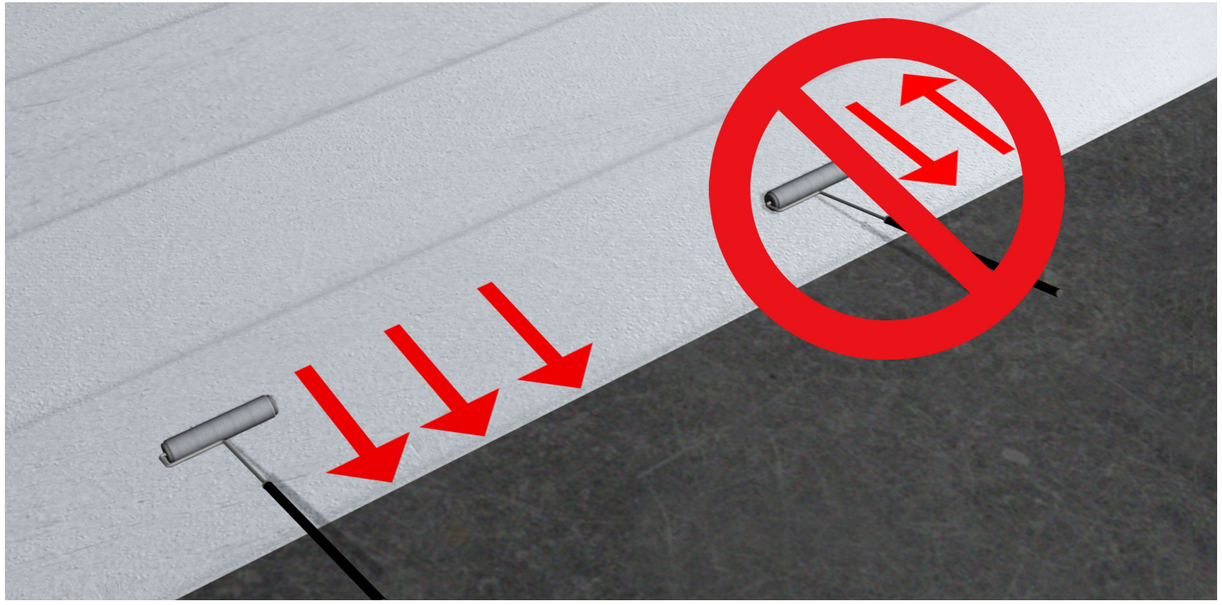
Controlling Fleece Roll Tension

1. During the manufacturing process, the rolls of fleece are wound up at a high speed, which results in varying tension within the rolls. When the fleece is unrolled, this tension variation can introduce wrinkles into the saturated fleece that can be difficult to remove.
2. Fleece roll tension is controlled and adjusted by applying additional force on one end of the fleece roll or the other, utilizing the fleece tensioner controls. The fleece tensioner controls consist of arms attached to the fleece tensioners. The arms have four thumb rests where pressure is applied. The four thumb rests allow convenient control as the fleece is applied and the fleece roll becomes smaller in diameter.
3. The amount of pressure required varies from roll to roll and also varies as each individual roll is applied. Other aspects of the project environment such as deck slope and surface profile may contribute to sheet wrinkling as well.
4. **IMPORTANT:** Controlling fleece roll tension is critical to minimizing sheet wrinkling. The operator must become familiar with the fleece tensioner controls and how to respond when sheet wrinkling appears in the dry fleece as it unrolls.

MACHINE OPERATION

Supplemental Back Rolling

1. When the resin slot is properly adjusted and fleece roll tension is properly controlled, the saturated fleece will exit the base of the fleece saturator and lay down on the prepared, primed substrate with minimal wrinkling and air entrapment.
2. Even with the best application, however, supplemental hand rolling (backrolling) is always required.
3. Supplemental backrolling with a 9" – 18" phenolic resin-core roller will remove any wrinkles in the saturated fleece, force air pockets out from under the sheet, and ensure a positive bond between the substrate and the reinforced membrane.
4. The selection of the width of the roller used for backrolling is applicator preference.
5. Pull air pockets out across the width of the sheet in one direction, beginning from the over lap and continuing to the free edge of the saturated membrane.
6. **IMPORTANT: DO NOT** roll towards the overlap, as this may force air under the previously installed membrane. Keep the path for the operator free of resin, particularly.



MACHINE OPERATION

Changing Fleece Rolls

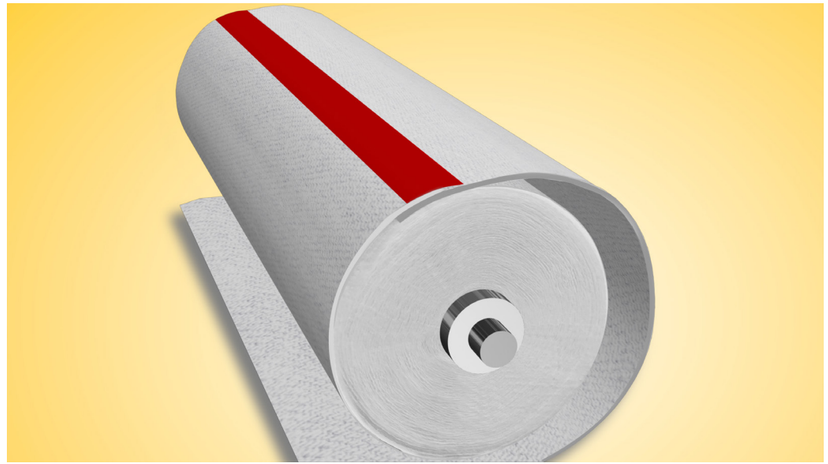
Each standard roll of fleece will cover approximately 600 sq.ft. of roof area. Once this coverage is approached, the roll of fleece should be changed while there is sufficient dry fleece to extend under the end lap of a fresh roll of fleece.

1. To change the roll of fleece, pull out the resin slot closure controls to close the resin slot.
2. Cut the existing roll of fleece approximately 6" past the top of the fleece roll so that there will be sufficient fleece to extend past the top of a fresh fleece roll. Lay the fleece onto the resin tray so that it will not fall through the fleece guide rollers into the resin bath.
3. Release the hook locks at both ends of the fleece roll bar. Remove the roll of fleece from the fleece roll support arms, remove a cone locking collar and fleece roll securement cone from one end of the fleece roll bar, and slide the fleece core off the roll bar.
4. Install a fresh roll of fleece in accordance with the Fleece Roll Loading section of this manual. Position fresh fleece roll so that the fresh free roll end is on top.
5. Extend the free end of the old fleece roll underneath the free end of the new roll, underlapping approximately 4" – 6". Apply 3" wide splice tape centered over the edge of the free edge of the new fleece roll and press down firmly along its length.
6. The taped fleece splice should pass smoothly through the upper fleece guide rollers, through the resin bath, through the bottom slot and resin bath guide rollers, and out onto the deck.
7. Once the splice is on the deck, peel back the fleece and remove the splice tape.
8. Finish off the splice area by hand, applying additional resin as required.

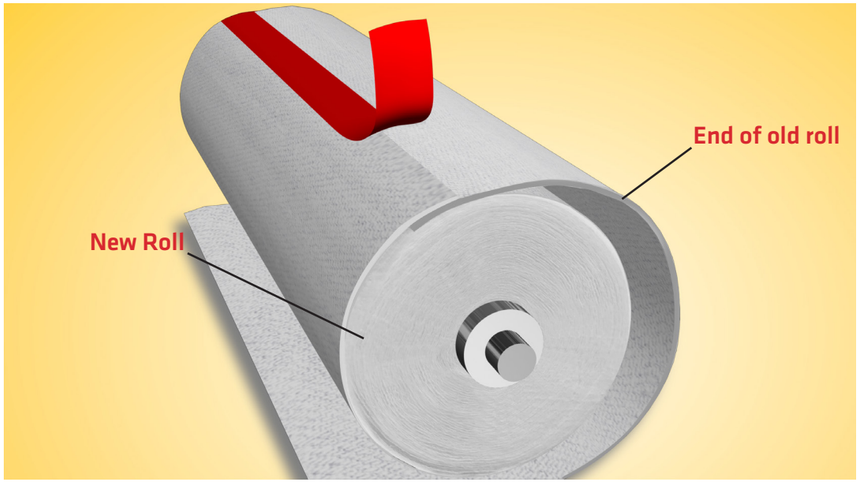
IMPORTANT: Should the fleece splice come apart in the fleece bath instead of passing out through the resin bath, the new fleece roll will need to be manually fed through the bottom slot. This will need to be done with the bottom slot open, so much resin will leak through the bottom slot until the fleece is properly fed through the slot and straightened out. Once the fleece is in proper position, pull out the resin slot closure controls to close the resin slot. Recapture the leaked resin and return to the resin bath. Reposition the fleece saturator, lay the starter board in place, push in the resin slot closure controls to open the resin slot, and continue laying saturated membrane.

MACHINE OPERATION

Changing Fleece Rolls



Changing Fleece Rolls

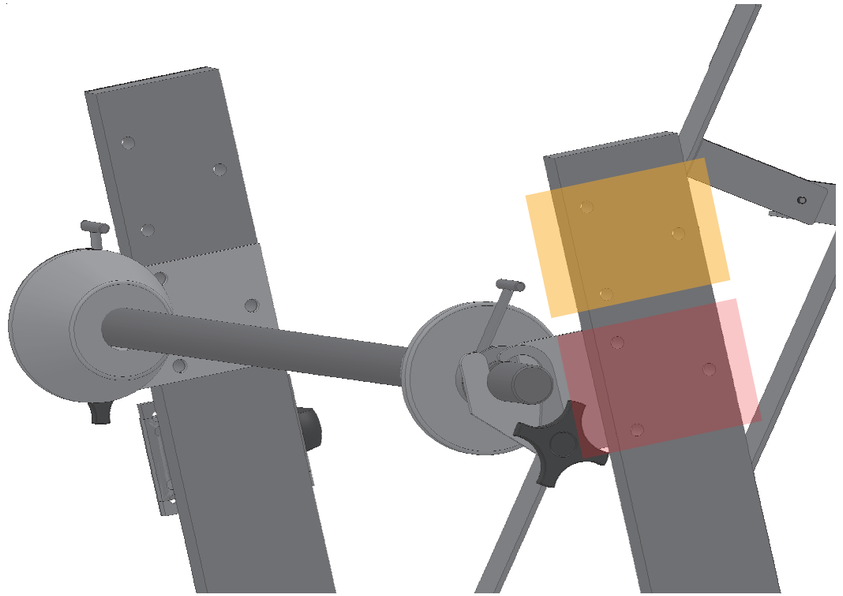


FLEECE ROLL LOADING

Roll Size Adjustment

The fleece roll support arms can be configured to accept standard fleece rolls (48" x 150') or jumbo fleece rolls (48" x 300') by moving the fleece roll bar end plates up or down the support arms:

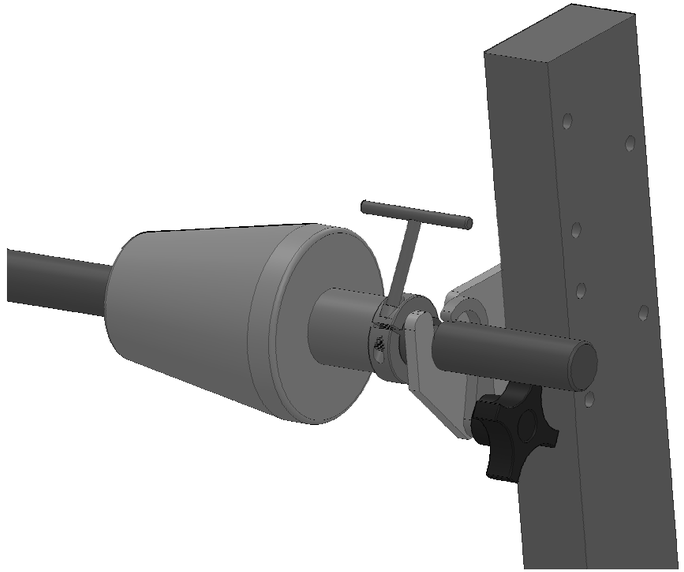
Standard Rolls - Lower Position
Jumbo Rolls - Upper Position



FLEECE ROLL LOADING

Roll Mounting

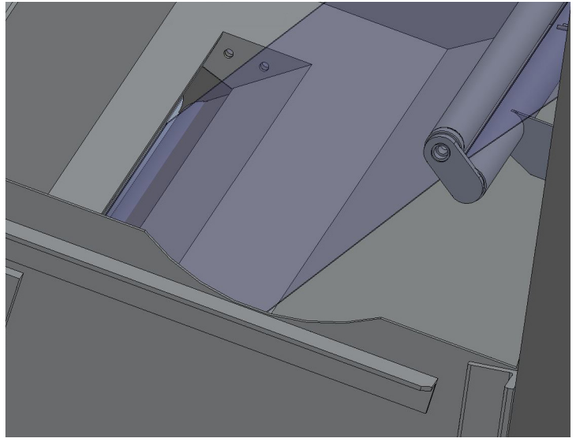
1. Unlock the lock hooks at each fleece roll bar end plate.
2. Remove the fleece roll bar with the adjustable fleece securement cones from the fleece roll bar end plates.
3. Remove one of the cone locking collars and one of the securement cones from the fleece roll bar by loosening the collar screw handle and sliding the collar and cone off the bar.
4. Slide the fleece roll bar through the fleece core, and replace the securement cone and cone locking collar onto the roll bar, and tighten in place. The fleece roll should now be secured in place on the fleece roll bar by the two se curement cones and locking collars.
5. Mount the fleece roll bar with the secured fleece core into the roll bar end plates and lock in place with the lock hooks.
6. IMPORTANT: The fleece roll must be oriented so that the fleece pulls off the roll from the “back” of the of the resin bath, and not over the center of the resin bath.

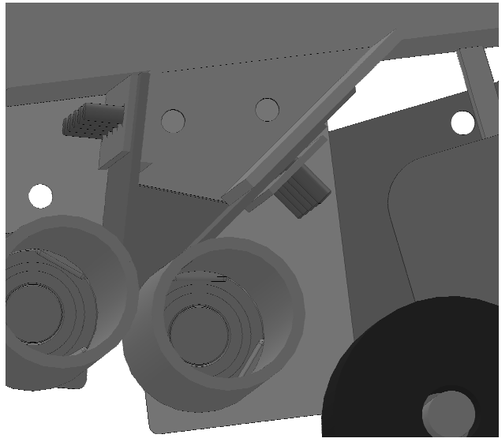


FLEECE ROLL LOADING

Fleece Pathway Feeding

1. Unroll approximately 2 ft. of fleece from the roll, and feed the fleece between the two fleece guide rollers. One fleece guide roller is stationary; the other fleece guide roller rotates freely.
2. IMPORTANT: The fleece must pass between the upper fleece guide rollers with out binding. The fleece roll position on the fleece roll bar can be adjusted from side to side by loosening the screw handles on the locking collars and adjusting the securement cones, moving the fleece roll as required, and then clamping the fleece roll in place with the securement cones and locking collars. Make sure that both screw handles are tight.
3. Unroll an additional 2 ft. of fleece from the roll by pulling the fleece from be low the upper fleece guide rollers.
4. Feed the fleece through the resin slot at the bottom of the resin bath and be tween the resin bath fleece guide rollers, using a plastic putty knife or similar. The resin slot must be open for this to be possible. Release the resin slot closure controls if still engaged (see Resin Slot Adjustment section).
5. Pull additional fleece through the resin slot until the fleece is even and wrinkle-free. Reroll the fleece back onto the roll, leaving approximately 12 - 24" of fleece extending beyond the resin slot. Activate the resin slot closure controls to close the slot.





LIQUID RESIN LOADING

Resin Capacity

1. The resin capacity of the fleece saturator resin bath is 30 gallons. However, a practical resin capacity is 20-25 gallons, which equates to four to five 5-gallon pails.
2. The fleece saturator resin bath will require refilling on a frequent basis during operation of the machine. It is suggested that refilling the resin bath be performed following application of every 150-200 square feet of membrane (40-50 lineal feet of applied membrane). of fleece extending beyond the resin slot. Activate the resin slot closure controls to close the slot.

Resin Loading

1. Liquid resin can be poured into the fleece saturator bath from the left side, from the right side, or from the fill trough.
2. Before pouring resin into the fleece saturator bath, make sure that the resin slot closure controls have been activated and the slot is closed.
3. Open the resin pails as required and carefully pour the resin into the fleece saturator resin bath until the resin level is approximately 4" below the rim of the bath on all sides of the bath.

IMPORTANT: Ensure that an even amount of liquid resin is in front and in back of the fleece. This will help to avoid the application of dry fleece by ensuring that an adequate amount of liquid resin is available from both sides of the fleece so that full saturation is achieved.

JOBSITE LOGISTICS

Staging

1. Typical resin usage will be 10 to 12 5-gal. pails per 1,000 sf. Cooler temperatures and a rougher substrate surface will result in more resin being used.

Another way of looking at resin usage is to figure on adding 2 5-gal. pails of resin into the resin bath every 40 lin.ft. of applied membrane: one pail to be added in front of the fleece, and one pail to be added in back of the fleece.

It is suggested that 20 to 30 pails be opened prior to fleece saturator operation. The opened pails and 2 to 3 additional rolls of fleece should be staged throughout the work area. This will ensure that the fleece saturator can be reloaded with minimal down time.

Crew Size

A properly sized applicator crew is required to realize the efficiencies of the Sika Fleece Saturator.

All projects are different, and all applicator crews work differently together. However, as a start, the following crew size is suggested:

1 - Operator (Pulls fleece saturator machine, changes fleece rolls with Reloader)
1 - Reloader (Keeps resin bath filled with liquid resin and assists Operator in changing fleece rolls)
3-5 - Backrollers (Removes air pockets/wrinkles, finishes off splices and end-of-run conditions)

JOBSITE LOGISTICS

Subsrate Condition

- With proper adjustment, the Sika Fleece Saturator will apply the correct amount of liquid resin to properly saturate the fleece and to adhere the saturated membrane to the substrate surface.
- There is no provision on the Sika Fleece Saturator to apply additional liquid resin under the fleece to fill in bug holes, spalls, and cracks, or to smooth out a rough and uneven surface. This is in contrast to hand application of resin, where additional resin can be spread onto the substrate surface to address these types of substrate conditions.
- This means that substrate conditions must be addressed during surface preparation/priming operations by grinding/scarification/blasting, and/or by the use of primer/kiln-dried sand mix.
- Inadequate substrate preparation will be evident during evaluation of the substrate following membrane application because there will be areas where resin has not wet the substrate surface.

Handling Peremiter Conditions

Sika Fleece Saturator requires approximately six feet of clearance at the ends of runs and two feet of clearance at the sides. The application of hand-applied perimeter rolls of membrane should be installed at the perimeter, per the following suggested schedule:

End of Run: 1 to 2 perimeter rolls
Side of Run: 1 perimeter roll

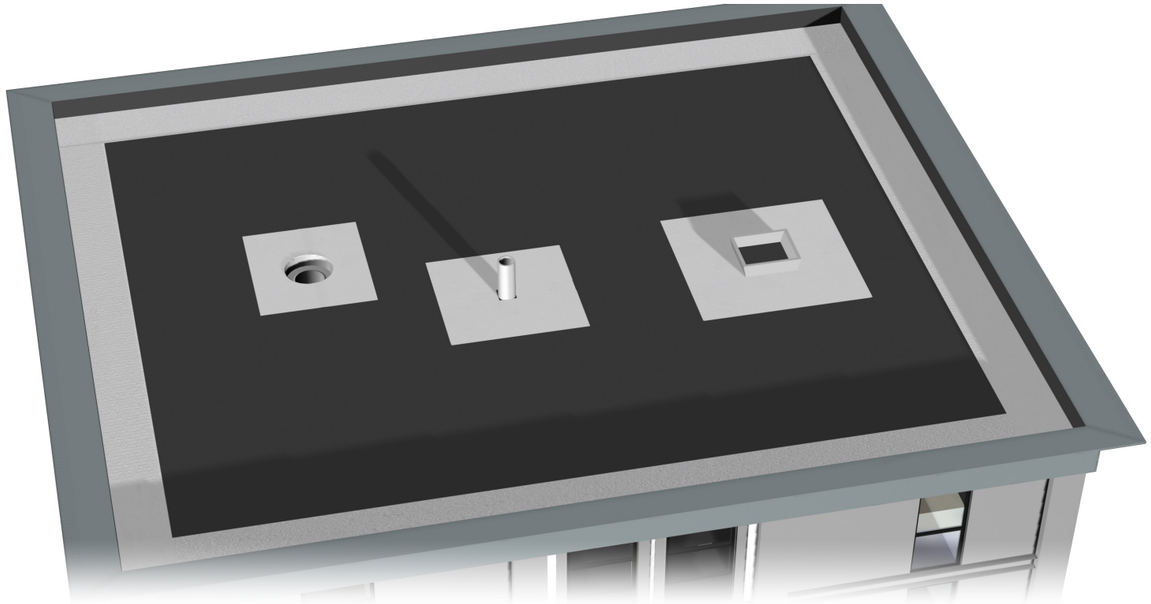
Considerations such as roof geometry, flashing height, and contractor preference may dictate other perimeter roll application schedules.

JOBSITE LOGISTICS

Subsrate Condition

The Sika Fleece Saturator is not necessarily suitable for use in roofing environments where there are multiple rooftop penetrations. Stopping and starting the machine, maneuvering round and between penetrations, and allowing for the required six feet of clearance in front of each penetration and two feet of clearance to the sides and the back may not be conducive to achieving significant application efficiencies.Certainly the fleece saturator can lay saturated fleece over drain openings, which can then be cut out and properly flashed.

With respect to roof curbs, pipes and conduit, and other penetrations, it is generally up to the contractor to determine how best to utilize the fleece saturator. If the penetrations are widely spaced, the use of the fleece saturator may continue to be effective, but if the penetrations are close together, it is likely that the entire roof area encompassing the penetrations would be best done by hand application.



CLEANING & MAINTENANCE

Cleaning

- The Sika Fleece Saturator is designed for easy cleaning with plastic or wooden scrapers, rags, and denatured alcohol.
- IMPORTANT: DO NOT use metal-bladed scrapers, wire brushes, or other aggressive cleaning tools. These will damage the fleece saturator finish.

The following cleaning steps are most conveniently performed while the fleece saturator is resting on its main wheels and base rollers:

Resin Bath and Resin Loading Tray – The resin bath and resin loading tray are coated with a non-stick coating. Allow the Sikalastic resin to cure, and then peel it off the resin bath and resin loading tray surface. If necessary, follow up with a rag scrub with denatured alcohol.

Machine Frame and Handle – Use plastic or wooden scrapers to remove heavy resin deposits, followed by a rag scrub with denatured alcohol.

The following cleaning steps must be performed while the fleece saturator is vertical and resting on its end casters:

Lower Membrane Rollers – The lower membrane rollers are easily removed by loosening the large hex bolts from one roller bracket and pulling the rollers up and out. The rollers are coated with a non-stick coating. Allow the Sikalastic resin to cure, and then peel it off the roller surface. If necessary, follow up with a rag scrub with denatured alcohol.

Resin Bath Slot and Gaskets – Remove resin from the resin bath slot and the upper and lower gaskets. Use plastic or wooden scrapers to remove heavy resin deposits, followed by a rag scrub with denatured alcohol.

CLEANING & MAINTENANCE

Maintenance

The Sika Fleece Saturator is designed with a minimum of moving parts. No operator maintenance is required. Thorough cleaning should be sufficient to keep the fleece saturator in a functional condition.

Repair

In the event of damage/mechanical failure with the Sika Fleece Saturator, contact the Sika Technical Department at 201-933-8800 for repair/machine replacement instructions.

SIKA FULL RANGE SOLUTIONS FOR CONSTRUCTION:

WATERPROOFING

CONCRETE

REFURBISHMENT

SEALING AND BONDING

FLOORING

ROOFING

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