RTM & VACUUM INFUSION

Process Overview:

Resin Transfer Molding (RTM) and Vacuum Infusion are similar processes. Both processes are typically employed to manufacture lower volume quantities as compared to more expensive steel tools.

RTM utilizes low resin injection pressures while Vacuum Infusion utilizes negative pressures to evacuate air, thus drawing resin into the reinforcement layup.

Design Considerations:

When selecting the proper SI Veil, the designer should consider several areas.

Veil Thickness / Weight:

Final design should be determined after sample part testing. Typical SI Veils frequently used will range between 10 mil and 20 mil thick.

Width:

When specifying veil width, consider the overall part design, including the part wall depth. SI Veils may be specified up to 120 inches (3.048 m) wide.

Fiber Orientation:

- Pearlveil® is typically used for relatively flat molded parts
- Curveil® is designed for moderate to highly curved molding
- Flexiveil® is used for compound curved molding applications.

Fiber Wash:

The veil must be capable of maintaining its placement in the mold during high injection pressures, thus eliminating fiber wash.

- Series 100 Binder is more soluble and more conformable to complex shapes.
- Series 600 Binder offers more strength and resistance to fiber wash at higher pressures.
- Other: Consult Factory.

Binder Percentage:

Binder can be specified between 7% and 15%.

Resin Flow-ability:

SI veil's enhance resin flow during injection. The open construction enhances wicking while reducing air entrapment.

Smoke and Fire Suppression:

Glass mineral fibers are non-toxic and do not burn.

Post Mold Finishing:

SI Veils offers many advantages to post mold finishing, including:

- The translucent color allows for enhanced resin pigmentation or post painting
- Parts can be sanded before post painting
- Fibers shear cleanly when holes are punched into the part

Corrosive Properties:

Pearlveil is highly corrosive resistant for parts intended to be used in harsh, acidic conditions.

Smoke and Fire Suppression:

All SI Veils consist of glass mineral fibers that are non-toxic and do not burn.

Apperance:

Supplied as roll goods, white in color with uniform fiber distribution and neatly trimmed edges. Each roll is substantially free of holes, glass beads and tails or other foreign contaminants.

Packaging:

Each roll is attached and wound on a heavy duty 4-inch I.D. cardboard core, immediately sealed against contamination in a polyethylene bag and identified with a unique product specific label. Based upon quantities, SI Veils are usually shipped on a 45 inch x 45 inch wooden pallet. Optional packaging is available.

Storage:

For best performance, all veils should be stored upright in locations with temperatures between 50° F (10° C) and 85° F (30° C) with a relative humidity below 80%.

Quality:

All SI Veil products are produced in the United States and meet the demanding quality requirements within the industry.

Warranty:

See Schmelzer Industries Product Warranty.

About Schmelzer Industries LLC

Schmelzer Industries Inc, headquartered in Somerset, Ohio is a glass fiber manufacturer, developer and supplier of quality veils and reinforcements into the composites industry. We can be found on the internet at www.siveils.com.

Typical SI Veil Specifications for RTM & Vacuum Infusion:

Consult factory for additional options.

Veil Classification	Thickness In. / MM	Grams / Sq. M	Grams / Sq. Ft.	Ounces/ Sq. Ft.	Roll Length Ft. +/- 10%	Roll Length Meters	Roll Dia. Nominal
10 mil	0.010/0.254	35	3.5	0.12	1,750	533	16" - 22"
15 mil	0.015/0.381	55	5.3	0.18	1,700	519	20" - 24"
20 mil	0.02/0.508	75	7.1	0.25	1,700	519	25" - 28"
30 mil	0.03/0.762	105	9.5	0.34	1,400*	427*	25" - 28"
40 mil	0.04/1.106	135	12.5	0.44	865*	264*	25" - 28"
1/2 Ounce	0.04/1.106	155	14.2	0.50	865*	264*	25" - 28"

* For rolls over 80" wide, the total length is approximately half the published length.

SI Veils
Fiberglass Veil and Lightweight Reinforcement

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