



## Case Study

### Compression Molding Scrim for High-Performance Automotive Air Vent Systems

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**Summary:** Acme Mills partnered with a leading manufacturer in the compression molding industry specializing in automotive air vent systems for major OEMs. The collaboration focused on supplying spunbond flat bond polyester scrim to stabilize the compression molding process, enhancing component precision and consistency. The project required precise material customization, adherence to rigorous automotive quality standards, and on-time delivery to align with the client's production timelines.

This partnership underscores Acme Mills' capability to deliver tailored material solutions that meet stringent industry performance requirements and support efficient, high-quality manufacturing.

### Project Specifications

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- ⚙️ **Material:** Spunbond flat bond polyester scrim (multiple weights: 0.5 oz, 0.75 oz, and 1 oz)
- ⚙️ **Order Volume:** Over 2.3 million linear feet of scrim material
- ⚙️ **Use Case:** Compression molding of air vent systems for automotive OEMs



## Manufacturing Details

### 1. MATERIAL PREPARATION

**Base Material:** High-strength spunbond polyester filaments, selected for durability and stability.

**Fiber Composition:** Engineered to achieve optimal tensile strength and minimal elongation for consistent performance during molding.



### 2. FABRIC PRODUCTION

**Spunbond Process:** Continuous polyester filaments were extruded, stretched, and bonded to form a uniform scrim with a precise weight and thickness.

**Customization:** Scrim rolls were produced in specific widths and lengths to match the client's mold dimensions, minimizing material waste.



### 3. ROLL SLITTING AND RE-ROLLING

Scrim was slit to required widths and re-rolled for efficient handling and transport.

Each roll underwent inspection during re-rolling to confirm accurate length, tension, and edge quality.



### 4. PACKAGING AND DELIVERY

Rolls were moisture-protected and securely wrapped for transportation.

Shipments were labeled according to client specifications, with detailed bill of lading documentation to facilitate seamless inventory management.





## Quality Control Steps

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### Incoming Material Inspection

- ✓ **Material Certification:** Polyester fibers were tested for strength, uniformity, and compliance with industry standards.
- ✓ **Dimensional Consistency:** Initial rolls were inspected to confirm adherence to width, thickness, and weight specifications.

### In-Process Inspections

- ✓ **Spunbond Integrity:** Visual and mechanical inspections were conducted to ensure uniform bonding and eliminate defects.
- ✓ **Performance Testing:** Random samples underwent tensile strength and elongation tests to validate mechanical properties.

### Final Inspection

- ✓ **Visual and Physical Assessment:** Final rolls were inspected for defects, such as uneven bonding or frayed edges.
- ✓ **Labeling and Packaging:** Finished products were verified for accurate labeling and packaging specifications before shipment.

## Project Highlights

- ✓ **Enhanced Process Stability:** The spunbond scrim provided reliable mold stabilization, reducing deformation and ensuring dimensional consistency in molded components.
- ✓ **Custom Solutions:** Acme Mills tailored the scrim dimensions and properties to meet the client's specific requirements for compression molding.
- ✓ **Quality Assurance:** Rigorous quality control protocols ensured each batch met stringent automotive industry standards for performance and durability.
- ✓ **Reliable Supply Chain:** Acme Mills maintained an efficient production and delivery schedule, supporting the client's manufacturing continuity.



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# Compression Molding Scrim for Automotive Air Vent Systems

This project demonstrates Acme Mills' expertise in delivering high-performance materials for compression molding applications in the automotive industry. By providing customized spunbond scrim with precise material properties and adhering to rigorous quality control processes, Acme Mills supported the client's production of durable, high-quality air vent systems for major automotive OEMs. This collaboration highlights Acme Mills' role as a trusted supplier of innovative material solutions for demanding manufacturing environments.

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## Contact Acme Mills

Need assistance in maximizing manufacturing efficiencies to ensure quality and optimize costs? Call or email us today and one of our skilled team members will lead the way. (800) 521-8565 ~ [info@acmemills.com](mailto:info@acmemills.com)