

Case Study: Surgical Grounding Pad

The Challenge - - - - -

Worthen Industries has been a leading provider for a number of Adhesive Coated Products to the medical industries for more than 20 years, including pressure-sensitive coated films, textiles and foams.

Worthen's work within the medical industry is highly customized to meet the needs of their customer. Because any change to a medical product requires extensive testing and certification, the return to the customer in terms of savings and quality needs to be significant enough to warrant the change. Worthen realized this in the case of a customer's production of 4"x4" grounding used in electrosurgical procedures.

This particular pad was produced via a four-step production process. Although working successfully, Worthen's team noted that simplifying the design and using updated manufacturing technologies would allow greater financial and environmental savings for the customer.

So Worthen's Research and Design team set out to develop a new 4"x4" grounded pad that:

- Demonstrated innovation within product design
- Had same or higher quality than the original design
- Showed significant cost savings to offset required testing and certification costs
- Proved better environmental sustainability throughout the product's life cycle

The Process - - - - -

The former 4"x4" grounding pad product consisted of pressure sensitive coated non-woven fabric supplied to the customer in two different widths, plus an adhesive-coated one and two mil polyethylene film supplied in two widths. In production the films were laminated to the non-woven to form the actual pad along with a wire cover piece that securely held the wires at the attachment point to the pad. In both cases, the customer had to print the non-woven, remove the release liner from either film and then laminate the film to the non-woven. Subsequent operations included die cutting and sheeting. Worthen Industries' Research and Design team saw that an extrusion process would streamline this whole assembly process by eliminating several operations in the

customer's plant along with two part numbers (SKUs).

In the extrusion process the non-woven is preprinted and then extrusion-coated with two mils of a polyethylene film. This new process eliminated the need for the two separate polyethylene films and the accompanying printing and lamination process in the customer's plant. The new extruded product needs only to be die cut and sheeted by the customer. The elimination of two adhesive coated films with release liners is a significant reduction of materials, including the process of solvent coating the two films in Worthen's facilities.

Results - - - - -

After a lengthy certification process for the new product, the customer was pleased to see immediate and long-term benefits including an annual savings of \$130,000.

In particular, benefits achieved included:

- Elimination of two part numbers (SKUs).
- A reduction in production assembly steps and time.
- Less waste within the customer's manufacturing process.
- A superior quality constructed product.

Worthen's unique ability to combine film extrusion with the application of a pressure sensitive adhesive is a process that can be used in many medical and industrial applications. Combining these two processes can eliminate the need to purchase and assemble multiple parts with purchasing one premade part.

Best Practices - - - - -

- Demonstration of innovation
- Willingness to collaborate
- Highly customizable approach
- Ahead of marketplace
- Customers' best interests in mind

Contact - - - - -

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