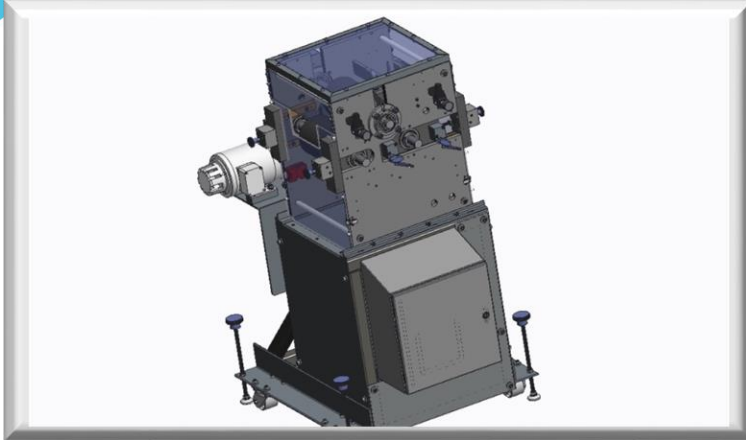


# Design and Build of Extruded Product Line

## Case Study: Inbrape Tecidos Industriais



### SUMMARY

#### Industry

- Home products

#### Customer Location

- Guaiba, Brazil

#### Business Situation

- Inbrape needed to grow its plastics extrusion business in to new markets.

#### Technical Situation

- Inbrape has several basic extrusion lines and was looking for a modular production solution where a group of machines could quickly be put into and out of production.

#### Solution

- NLS designed and manufactured a group of machines to apply unique surface finishes to Inbrape's extruded products.

#### Benefits

- NLS provided a complete solution: from concept, design, and production ready equipment.
- Reduction in production downtime. The equipment could be quickly changed to accommodate different product requirements.
- NLS understood the technical challenges associated with building the machines because we designed them. This allowed us to manufacture the machines at a lower cost than commercially available anywhere else.

#### Solutions / Services

- Design engineering services
- Manufacturing services

### Company Overview

Inbrape Tecidos Industries Ltda., located in Latin America, was founded in 1957 and was primarily engaged in the processing of wool. Today, the company manufactures nonwovens for industrial applications and extruded PVC. Inbrape is the largest manufacturer of nonwovens for shutters and the largest producer of nonwoven stitched shoes for Latin America.

Inbrape's industrial plant, with 14,500 m<sup>2</sup> of built area, is located in Guaiba -RS, the metropolitan area of Porto Alegre. With approximately 200 employees they export to over 40 countries from Latin America, Europe, the Middle East, and Africa. With concern for the environment, Inbrape uses fiber recycled from PET bottles to manufacture high-quality shutters and footwear components.

### Situation

Inbrape approached Northern Lights Solutions to develop new decorative finishes for their line of plastic extruded products. We agreed to develop the products, design the machines to produce the products, build the machines, and send them to the factory in Brazil.

### Product Design

Our product design engineers created a vast array of new surface features, unique in the industry, for Inbrape's plastics line. We focused on developing new products for Inbrape that could be efficiently manufactured. Taking a great design and making it work for production takes a great deal of skill to keep the original design intent. A creative design needs a team like NLS to get it to market. The next phase was to design the machine to apply the aesthetic finishes.

### Machine Design

Having experience in applying thin coating to plastic parts, we knew we needed an offset printing process and began designing a dedicated machine to apply a thin film on their narrow width product. The second machine would be an IR heater to dry the coating before the product was packaged for retail sales. Both machines were designed in Creo's 3D modeling software prior to being released to manufacturing.

## *Flexibility*

NLS created a modular production line for Inbrape that involved a group of machines that could be quickly pulled in or out of production, depending on the volume of product needed to be manufactured at any given time. This flexibility saved Inbrape time, made production more efficient, and was great for their bottom line.

## *Manufacturing Services*

Receiving a complete detailed manufacturing package from design engineering made the manufacturing process very straightforward. With over 150 components specified from over 25 different suppliers, it was a fairly complex machine. However, after only seven weeks, two machines were finished and ready for shipment to the customer.

## *Results*

For a small investment, Inbrape had a new high margin product line, machines to build the product, and instructions telling them how to make it—all in a very modular, low downtime, and highly customizable environment.



*You can depend on NLS to provide a complete solution—from concept, to design, to production ready equipment.*

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