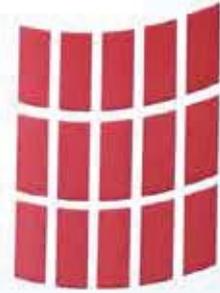


Since 2004 we have been making moulded parts in Brazil and supplying to the transformer manufacturers in the entire South America



ISOLETR
COMPONENTES ISOLANT



What differentiates us is our unique machine-moulding process through which we produce high quality parts by controlling pressure, humidity, and temperature

CARLOS JACOMINI

General Manager at Isoletri

The only insulation manufacturer in Latin America

Isoletri group is the only manufacturer of complete set of insulation parts and kits for transformers in Latin America. They are also a distributor of insulation materials, such as paper, pressboard, rigid and flexible laminates. The company has about 120 people and the revenue of around USD 15 million. Apart from supplying insulation materials, parts and kits, the company provides the support in transformer design to their customers.

From distributing to manufacturing

My involvement in transformer insulation business dates back when I was with ABB. At that time engineering department was developing ways to reduce the number of products in the insulation system of transformers, in which thousands of small parts are used, from small shim rods and strips up to large winding cylinders and supports such as press plates. Therefore, transformer manufacturers were spending a lot of time and money creating daily thousand of items in the system. My responsibility was to improve the situation with insulating material. I had the opportunity to work on the first project which in-

involved outsourcing manufacturing of insulation kits from transformer manufacturing plant to external suppliers. Actually, I was responsible for the preparation of this project. Later, when I was with Siemens, and when I was working on improvements of the insulation system, I cooperated with people from Pucaro Elektro-Isolierstoffe GmbH in Germany, and we continued this cooperation later between Isoletri and Pucaro.

Carlos Jacomini has been in transformer insulation business for nearly 25 years. His background is mechanical engineering. He started in ABB Brazil in 1996, and then in 2000 he moved to Siemens Brazil. He also spent 1.5 years in Siemens in Germany. His responsibilities included optimization of insulation system and development of the concept of insulation kits in Brazil. In 2004 he started Isoletri, a company which is converting and distributing insulation materials such as pressboard, rigid or flexible laminates, and manufacturing insulation kits. Nowadays, Isoletri is the main manufacturer of insulating materials, not only in Brazil but in Latin America as well, being the only company that makes this kind of product.
Contact: jacomini@isoletri.com



The other aspect of our innovative process is that we can get moulded parts manufactured much faster thus ensuring competitive prices and much shorter delivery time

So, when I came back to Brazil, I started my business as a distributor and convertor of insulation materials and manufacturer of insulation kits for transformers. At that time, all the transformer manufacturers here in Brazil had a big problem with moulded parts because we only had one supplier. Since it was really necessary to find some other suppliers, I started a project to develop moulding parts locally. We wanted to develop wet board machine so we started working on its

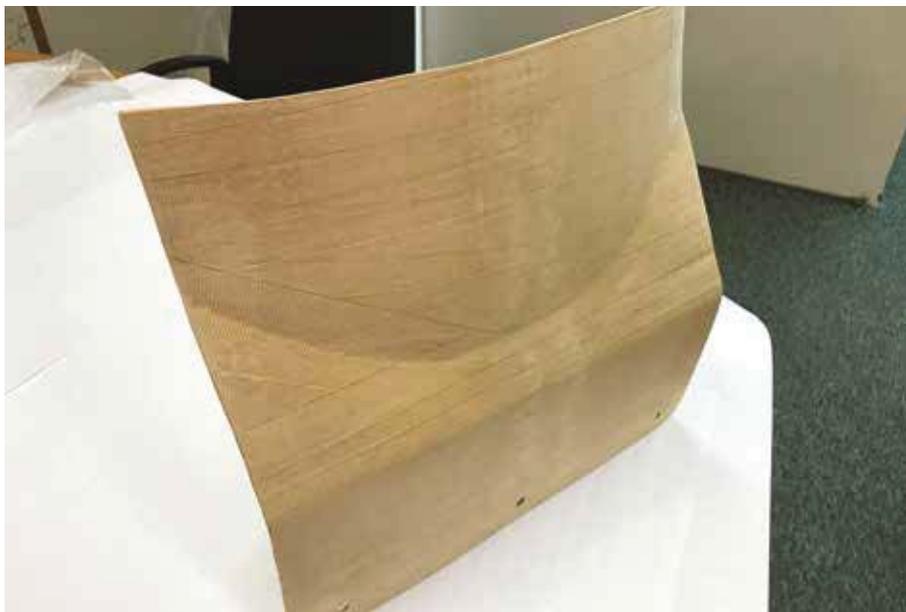
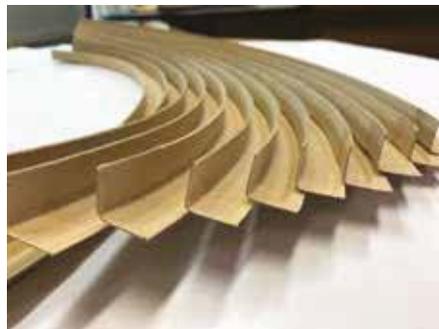
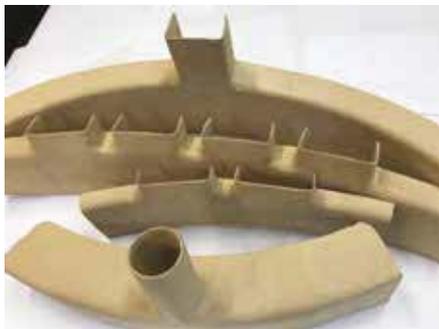
design. When we developed the machine and got the first wet board, we saw that we have produced a high quality product, and we decided to start making moulded parts in Brazil in 2004 already. Since then I have kept improving the machine and the process.

Our first customer for moulded parts in the south was WEG. We also started to supply companies which were manufacturing small transformers

and step by step, we continued to grow proceeding with manufacturers of bigger and bigger transformers. Nowadays, we supply moulded insulation parts to all the big players we have here in Brazil, like Siemens, ABB, Toshiba, GE, etc. We also supply moulded parts to the entire South America. We have customers in Argentina, Chile, Paraguay, Colombia, Ecuador, and so on. Not all of them are big manufacturers, but we have substantial business with them and we provide our clients the best service regardless of their size, that is something we are very proud of.

Innovative moulding of insulation parts

We recognized the need on the market and through our research we developed

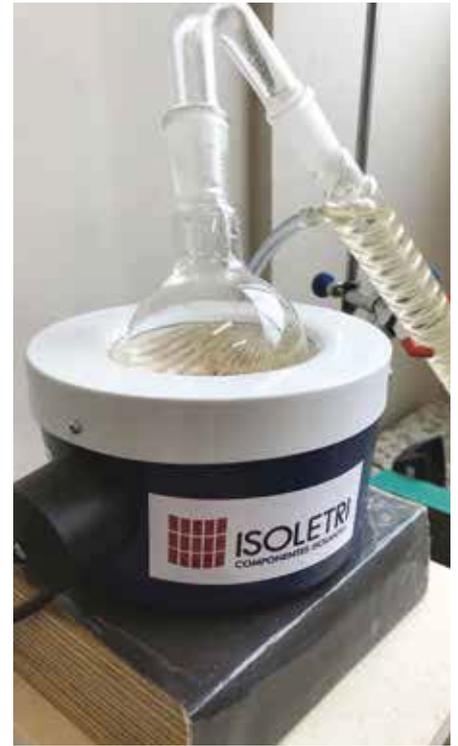


much faster compared to other manufacturing methods. Of course, this gives us the advantage over our competitors, because we have a very competitive price and shorter delivery time because of the high productivity, i.e. we don't spend a lot of time producing these parts. This is all enabled by our innovative process, and I am very happy because of this.

Just to give you an example. We have achieved a drastic reduction of production time for caps and rings, and we can get them ready in 20 mins. If you compare our process with high frequency drying or drying by conventional ovens, the reduction is drastic. But it is not all about reduction of manufacturing time. The more important aspects are the quality and characteristics of the product, the density, the degree

a very innovative process of making moulded components. I already mentioned that we developed the wet board machine, but the real difference here is that we have also developed new ways to make the moulded parts. Therefore, our focus is on machine-manufactured moulded parts, not the conventional, hand made parts. We also developed a special machine with special tools, and

created our own process where we control four parameters: pressure, humidity, and temperature. That way we preserve important characteristics of the cellulose and get moulded components of a very good quality, especially considering the need for high mechanical and dialectical performance. The other aspect of our innovation is that we can get insulation parts manufactured



Now that we have a new plant and a huge capacity for moulded parts and we are able to provide products of a very good quality for a competitive price, we are ready to globalize this business

of polymerization (DP), the electrical strength, mechanical strength, etc. It is really interesting to see that our products offer better characteristics and have better performance.

Some other manufacturers of moulded parts have similar, but very aggressive processes, which result in accelerated aging of cellulose. Consequently, this reduces the DP, and the reduction happens because of the process. Lower DP means that these moulded parts will have poorer performance under mechanical stress. When we started our development project we were aware of that and we decided to focus our development efforts on controlling these four variables: pressure, humidity, and temperature. That is the key to our innovation, the innovation we have done regarding the manufacturing of moulded parts.

Centre for moulded parts

We introduced these new products into the market in 2008, and we have gathered quite a huge experience regarding the process. The fact that we have been delivering moulded parts for five years already, confirms our process works well and that our clients are happy with the service and the products they receive from us.

Now we have a new plant for moulded parts with 1200 m² of production space and 70 people working. We make around 10 million dollars. Here we have a huge capacity for moulded parts, so we decided to communicate this better to the market and start exporting outside South America. We are already working on the cooperation with companies in North America, Europe, Africa, Asia, i.e. practically the whole world, we believe we have something good to offer to everybody, no matter the location. What

we need to do now is to figure everything out, find the right ways and the right partners, and to globalize this business. We are also discussing the possibility to set up our branch somewhere else in the world, to cover as much as we can. We are ready for this because now we are able to provide products of a very good quality for a competitive price, and I want to share here how we achieved this.

Reputation of high quality

Over the years Isoletri has gained the reputation and market share in the area of electrical insulation. This reputation of high quality products and performance served as a background for new partnerships with globally known and respected manufacturers, such as the Swedish company Munksjo, established in 1862 and known for inventing the Kraft process for the manufacture of special insulation papers (smooth or crepe, thermally upgraded, etc.) and Dehonit, a German company with over 75 years of history and one of the leading global manufacturers of densified wood.

In general, some of the products manufactured by Isoletri today are ensuring insulation levels of over 2 million volts impulse voltage, in transformers manufactured by our customers, ensuring the supply of electricity to great number of people.