



INTI

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de Tecnología
Industrial



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y Desarrollo Productivo

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SMEs EXPORT

Argentine technology and innovation



PARTS AND PIECES FOR BOATS AND SHIPS



INSTITUTIONAL RELATIONS AND COMMUNICATIONS OPERATIONAL MANAGEMENT

Institutional Relations Deputy Management



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INTI and the shipbuilding industry

INTI, a national technological institution with a federal presence, is implementing a series of actions aimed at developing suppliers from strategic sectors that involve R&D levels in their processes and create greater industrial density along the Argentine territory.

The shipbuilding industry is included in this category and is a **priority component** of it, not only because it contributes to socio-economic development and systemic competitiveness **but also because of its great potential for expanding other industrial activities integrated into the whole chain.**

Taking into consideration this prevalence and accompanying the public policies for stimulating the sector proposed by the national Government, INTI created the **Supplier Development Board for the Shipbuilding Industry**, a meeting point in which public or semi-public shipyards participate. Among them are Río Santiago and Tandonor, together with other private shipyards such as Astillero Naval Federico Contessi, SPI Astilleros, Tecno Pesca Argentina, Río Paraná Sur, and business associations like the Argentine Naval Industry Federation, the Buenos Aires Naval Industry Association, the Argentine Naval Industry Chamber, and the Mar del Plata Naval Industry Chamber.

With the active participation of said shipyards, which represent a large part of the domestic demand of components, industrial services and critical inputs of the sector, chambers representing potential shipbuilding suppliers and other sectors—such as mining, gas, and oil—as well as other governmental entities and national enforcement authorities were summoned.

All the stakeholders involved in the Board sought to meet the demands that have arisen, promoting productive linkages, complementarity, synergy, and inter-industrial and inter-institutional relations within the value chain.

The work methodology has several guiding principles that are the foundations of this supplier development model: the adoption of a multisectoral approach, incorporating cross-sector suppliers, understanding that industrial actors acquire capabilities through their own efforts and the technological links between companies—public and

private—and government agencies; the promotion and strengthening of excellent relationships among suppliers, customers, and users; the detection of neglected areas and weaknesses in the national input-output matrix, promoting public interventions with an essentially technological approach to develop industrial chains; and the prioritization of territorial occupation.

Thus, through a planned and sustained action agenda, INTI has carried out a series of interventions in the sector, examples of which appear in this publication.

Juan Manuel Labanca

Coordinator

SHIPBUILDING INDUSTRY SUPPLIER DEVELOPMENT BOARD OF INTI



Exporting Potential



REDIMEC S.A., modernization and technological integration of maritime fleets



Shipbuilding is complex and goes back several centuries before the industrial revolution, so there are still non-mechanized practices. In this sense, it is a sector in need of ongoing process modernization. Through its **R&D and applied engineering group, REDIMEC S.A. is currently undertaking technology integration initiatives and developing new systems for the control and navigation of vessels, with the support of leading manufacturers in the market.**

Certified under the ISO 9001 Standard and audited by ClassNK (Nippon Kaiji Kyokai) and Bureau Veritas, Redimec has developed new systems for ship navigation control by changing the transmission of analog signals into other formats. This innovation has facilitated the ship's systems upgrade, merging new and current technologies and preparing them for future adjustments.

INTI supported the company in the diagnosis and the intermediate and final audits for the execution of the project submitted to the National Program for Supplier Development (PRODEPRO), which is aimed at strengthening the shipbuilding industry. Mónica Campanaro, coordinator of the Institute's Regional Assistance Management, explains the scope of the assistance provided by specialists: "After the survey, the company incorporated formerly outsourced processes, improved the capacity of its existing services, and enhanced its productivity and quality standards". Ms. Campanaro adds that the company received technical assistance to incorporate the Kaizen approach for continuous improvement in all its processes.

The company's flagship solution is the design and installation of a Navigation Data Integration System (SIDAN), which supports state-of-the-art navigation units, replacing obsolete navigation systems on old platforms. **Its great differentiator is the modular concept, which makes it possible to adapt the solution to different types of vessels, choose the most suitable navigation sensor, and provide other characteristics in addition to ensuring compatibility with the equipment in place.** The company claims that the product features make it unique in the market.

The SIDAN is used in Argentina's most emblematic fleets, such as the vessels ARA Libertad, ARA Drummond, ARA Indómita, and the icebreaker ARA Rosales. **Its average life is over 20,000 hours.**

Another outstanding solution is the R-SYNC, a hydroacoustic trigger synchronization unit that can control up to eight hydrographic devices for oceanographic research purposes. It is used in vessels with on board hydroacoustic systems (sonars and echo sounders) having similar frequencies that can interfere with each other. It works by emitting sound waves into the water and receiving the reflected waves. When there is more than one device operating simultaneously, signals can overlap and cause interference with the waves. To prevent this from happening, **the R-SYNC unit opens a time window by synchronizing the signal triggers of all devices so the desired target is heard. Also, the company provides a solution in integrated bridges systems** with equipment that best meets the most demanding performance requirements.

Currently, the company aims to deepen its presence in Latin America, specifically in its Central America destinations. Redimec CEO Fabián Oyarbide claims that the countries from the region truly need these developments on their fleets.

In this sense, Mr. Oyarbide also says, "We can sell a wide range of state-of-the-art sea equipment as a KIP (Key Industrial Partner) member of the Thales Group. We provide support during the whole life cycle and modernize maritime vessels such as corvettes, frigates, destroyers, and submarines for improved capacities", concludes the company's chairman.



REDIMEC S.A.

Tandil Industrial Park, province of Buenos Aires

Technology integration and development of new ship and navigation control systems

-Plant 1800 m²

• HS CODE (NCM):

-9014.20.90 / SIDAN

-9014.80.90 / R-SYNC Hydroacoustic Trigger Synchronization Unit





SAUVE S.A., worldwide compatible GUMMI clutches and couplings



Suppliers to the marine industry offer a significant number of inputs, parts, components, and equipment essential to the industry. One of these qualified suppliers is **Sauve S.A.**, a company that manufactures and markets products for the transmission sector under the Gummi brand name.

Certified under the ISO 9001, ABS Quality Evaluations (ABS QE), and ATEX (ATmosphères EXplosibles) standards, issued by TÜV (Technischer Überwachungs-Verein), **its flagship products are pneumatic clutches and universal flexible couplings featuring maintenance-free elasticity resulting from rubber.**

The company has a long track record of collaboration with INTI, in whose premises it has been testing the different formulations used to manufacture its metal-rubber pneumatic clutches and couplings for more than forty years. Karina Potarsky, technical director of INTI's Rubber sector, explains that tests are conducted periodically to ensure compliance with international regulatory requirements. "INTI's assistance provides the technical endorsement of the parts and positions the company's products in foreign markets," Ms. Potarsky says.

All clutches, brakes, and spare parts are fully interchangeable with those manufactured by the most important North American company in the field.

Its annual production capacity is 14,000 units in all its lines. Its main customers are Fluviomar S.A., Nacional Shipping Corp., and UABL, among others.

“Given the extensive relationship with the institute, Sauve was summoned to join the Naval Development Board. As part of this initiative, INTI visited the plant to identify all the parts currently produced and include them in the Argentine shipbuilding supply catalog,” says Esteban Ramírez, a member of INTI’s Assistance and Industrial Liaison department.



The shipbuilding activity is mostly carried out in the province of Buenos Aires, where 63% of the companies and 79% of the sector’s employment are located.

Sixty per cent of its production is for the domestic market, while the rest of it is exported to the United States—where it has been well established for over thirty years—, Indonesia, Italy, Canada, Mexico, Brazil, Peru, Colombia, Paraguay, Chile, Bolivia, and Uruguay. **The company plans to strengthen its position in the Asian market and to expand its presence in Europe.**

Juan Carlos Morgade, technical director of the company, explains that Gummi’s main advantage is that its couplings are easy to assemble and disassemble, and they are elastic, vibration-dampening, and maintenance-free during their service life. Finally, he adds that the company **offers technical and after-sales support services abroad.**



SAUVE S.A. - GUMMI

Exaltación de la Cruz, Capilla del Señor, province of Buenos Aires

Manufacture of pneumatic clutches and couplings

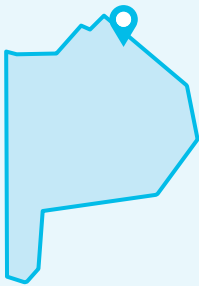
-A 4500 m² covered area distributed in two warehouses

-Its coupling lines are A, universal elastic coupling; BR: elastic coupling for low rotation/high torque; and VND: semi-elastic coupling with polyurethane elastic lugs for applications requiring low or high rotation and high torque.

-Its pneumatic clutch production lines are FM, in five sizes (25”, 30”, 35”, 40”, and 48”) and two versions (single and dual); and FKT (20-32” diameters).

They are a combination of ACTM36 Naval steel plate, natural rubber with rubberized fabric, and friction material manufactured at the plant, supported by an aluminum false keel.

-Clutches resist temperatures from -20 to 90 °C (-4 to 194 °F).



• HS CODE (NCM):

- 8483.90.00 / Elastic Centers FK/FKT Elements - Parts of Elements - Bells
- 8483.60.90 / Pneumatic couplings - Elastic couplings - tooth couplings
- 8483.60.11 / Clutches
- 4016.99.90 / DX Diaphragms / FKT Chambers





EB INGENIERIA®, the Argentine helm by Esteban Bernath

In Latin America, there are few companies that manufacture rudder machinery. **Esteban Bernath is an Argentine company renowned for its extensive track record in designing, manufacturing, and installing this product under the brand name EB Ingeniería®.**

With more than 25 consecutive years in the local market, the company has an in-depth expertise in designing and manufacturing mechanical and oleodynamic equipment for several industries: oil and gas, shipbuilding, fishing, and mining. Particularly in the shipbuilding industry, its two most outstanding products are **the rudder machines and hydraulic cylinders.**

Leonardo Tufaro, a member of the Welding department of INTI's Mechanics department, says that the company staff was trained in industrial ultrasound to be able to perform non-destructive tests using this method. The ultimate goal was to run an internal control of the welding processes. The Institute also provided the type approval and certification of welders and welding procedures. In this way, the company has successfully complied with one of the requirements demanded by the industrial sectors it supplies.

“Within the framework of the Supplier Development Board, technical assistance was provided for the type approval of the hydraulic cylinders used in its rudder machines to develop world-class products,” Mr. Tufaro concludes.

The company specializes in designing, manufacturing, and installing rudder machines adapted for vessels. These have a size and capacity ranging from 0.5 to 8 metric tons in different executions: parallel cylinders with central yoke, double rods with separate pistons for catamarans, and the new execution with electronic pairing for two independent rudder blades and with Danfoss microprocessors, including rudder angle indicators.

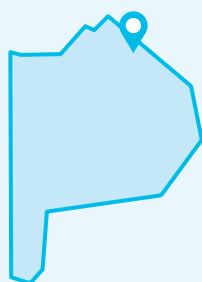
In addition, the company stands out in the field for the design and manufacture of hydraulic cylinders in naval executions such as A-frames, gantries, cranes, and any type of linear power motion.



One of the company's goals is to enter the Latin American shipbuilding markets, **particularly those of Chile, Ecuador, Paraguay, Peru, and Uruguay—where it understands there is a need for this type of product. The company is also deeply interested in reaching the Brazilian market since it developed and manufactured the first Lars Launch and Recovery System (LARS), which is commonly used in offshore platforms.**

Esteban Bernath, the company's chairman, says that after 28 years of presence in the domestic market, it has already equipped more than 20 vessels with EB Ingeniería® products. He also points out that, over the years, the company has entered into naval technology transfer agreements with companies from Norway (Karmøy Winch AS, Marioff, and Norgear A/F) and Finland (Kumera Oy), world leaders in the manufacture of winches, oleohydraulic systems, and naval gearboxes and inverters, anticipating new technologies in naval and fishing applications.”

“Once we achieve the Italian Naval Register (RINA) Type Approval, which we are working on with the support of INTI, we will be the only company in Latin America to produce hydraulic cylinders and rudder machinery with this international certificate. There are only two manufacturers of this product in North America, which means that we can position ourselves in the segment,” concludes Mr. Bernath.



EB Ingeniería

San Fernando, province of Buenos Aires

Design, manufacture, and installation of rudder machinery for vessels and hydraulic cylinders for naval executions.

- Plant: 1100 m² with manufacturing capacity up to 12 t of 3 x 9 m.
- The company has the capacity to develop the complete equipment for two self-propelled barges or fishing vessels per year and to individually produce between 5 and 8 rudder machines per year, depending on their models and sizes, and up to 10 machines in series.

• HS CODES (NCM):

- 8412.21.10.000D / Hydraulic cylinders: with rectilinear motion (cylinders) - Hydraulic motors: other motors and driving machines. Nuclear reactors, boilers, machinery, apparatus and mechanical appliances; parts thereof.
- 8479.89.92.000F / Rudder machinery: rudder apparatus. Rudder apparatus - Other machinery and apparatus: mechanical machines and apparatus with individual functions, not specified or included elsewhere in this chapter. Nuclear reactors, boilers, machinery, mechanical appliances and apparatus; parts thereof.
- 8425.39.10.100V / Winches and capstans: other - Hoists: hoists; winches and capstans; jacks. Nuclear reactors, boilers, machinery, apparatus and mechanical appliances; parts thereof. With capacity less than or equal to 25 t - Other - Winches; hoists: hoists; winches and capstans; jacks. Nuclear reactors, boilers, machinery, apparatus and mechanical appliances; parts thereof.





PONTINE S.A., fire-resistant naval habitability

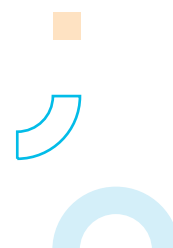
The shipbuilding industry is constantly developing new materials that serve as supplies, which involves the manufacture of sustainable vessels using lighter materials and non-polluting energies connected through intelligent systems. **Such technologies are essential for preventing, reducing, and avoiding environmental damage and improving safety on board.**

Pontine S.A. is the only national manufacturer of turnkey, fireproof products for naval habitability. Together with INTI, it has developed fire-resistant panels (A-15, B-15 types) with rock wool interior, metallic exterior, and fireproof paint for building ships' interior furnishings.

INTI specialist María Eugenia Corso, in charge of the Fire and Explosion department, explains that the Institute worked together with the company to meet international requirements and standards. This endeavor positioned the company as the only national producer of fire-resistant panels for naval applications, thus satisfying both national and global demand.

Pontine CEO Néstor Lavopa stresses that the company's products excel regarding raw material quality and manufacturing. It uses stainless steel and marine phenolic plywood in their furniture, which, due to the plastic laminate coatings, is significantly more resistant than melamine. Likewise, he emphasizes the quality of the finishes.

Pontine's products are used by shipyards, offshore platforms, fishing vessels, merchant ships, ocean liners, catamarans, cruise ships, tugboats, and naval vessels in general. While all of the company's production is exportable, there are plans for Pontine to hold a solid position in regional markets with its fireproof panels.





“We have participated in more than fifty developments in Argentina’s main naval hab- itability works over the last 20 years. Our works include bridge deck, interior furnishing, freezing tunnel and hold, internal partition, and cabin linings, among other projects”.



The Paraná-Paraguay waterway system is one of the longest natural navigable corridors on the planet: 3,442 km from Puerto Cáceres (Brazil) to Nueva Palmira (Uruguay). The waterway encompasses the Paraguay, Paraná, and Uruguay rivers; the countries that share this waterway system are Argentina, Brazil, Uruguay, Paraguay, and Bolivia. For the latter two countries, it is their only access route to the ocean.

“We see ourselves as an innovative company at the forefront of the shipbuilding indus- try’s needs. Our products guarantee fire safety on ships thanks to the fireproof coating used, which is manufactured under international standards,” concludes Mr. Lavopa.



PONTINE S.A.

Mar del Plata, province of Buenos Aires

Manufacture of fire-resistant panels

- Metallurgical plant: 400 m²
- Polishing workshop: 300 m²
- Carpentry workshop: 300 m²
- Annual production capacity: 10,000 panels

• POSICIONES ARANCELARIAS (NCM):

- 6806.10.10 / Panels
- 6806.90.90 / Doors
- 7308 .90.90 / Structures and parts of structures of iron or steel, n.e.s.





EPCA INDUSTRIAL S.R.L., custom-built protection against corrosion

For a long time, experts in the maritime industry have made strides to prevent the harmful effects of corrosion on vessels, a crucial issue for navigation since the capacity and safety of ships depend entirely on the protection of the hull, propellers, and rudders. **With more than thirty years of experience in the field, EPCA Industrial S.R.L. is one of the few companies in the world that provides solutions to this problem through upmarket cathodic protection rectifiers.**

Three years ago, INTI brought the company into the National Program for Supplier Development (PRO-DEPRO) for the shipbuilding industry, which allowed it to strengthen its presence in the field. Today, **the company is renowned by the country's shipyards as a specialized service provider.**

Under the **ImasTec** trademark, and certified under ISO 9001 2015 with the German inspection service provider TÜV Rheinland, the firm stands out for designing, manufacturing, and setting into motion cathodic protection rectifiers tailored to the ship's needs and at standard prices. Based on the navigation routes, they can be single-phase, two-phase, and three-phase; 110 V, 220 V, 380 V, 480 V, and 1000 V; 50-60 Hz; manual or automatic; air-cooled, oil-cooled, or with in-cabinet cooling for classified areas.

ImasTec offers three models: **Manual Rectifier, Automatic Rectifier, and Multiple-Output Automatic Rectifier.** The latter is its flagship equipment since conventional rectifiers have only one direct current output. However, ImasTec produces equipment with multiple independent outputs for the protection of casings and tank batteries, among others. It also manufactures cabinets that can be explosion-proof for classified areas, and cooled by free-air circulation or with insulating oil.

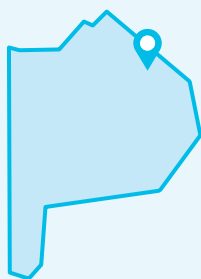


The company also produces cathodic protection measuring instruments, including switches, current sending equipment, recorders, potential recorders, synchronizable on/off anode switches, portable copper-copper sulfate reference electrodes, and corrosion testers with steel coupons.

It also supplies a wide range of materials for cathodic protection works, such as anodes, electrodes, cables, boxes, cairns, discharge protections, shunts, and rheostats.

It has exported to **Bolivia, Chile, Colombia, Uruguay, Ecuador, El Salvador, Paraguay, and Peru and is planning to export to Brazil, Korea, and Spain.**

Sergio Echebarrena, the company's general manager, says, "Together with Brazil, we are the only ones in Latin America capable of custom-building a product that worldwide is manufactured mostly in a standardized manner. Ours has a higher quality than those that can be found in the market. We offer unique products, with improved performance and exclusive designs at competitive prices."



EPCA INDUSTRIAL S.R.L.

Caseros, province of Buenos Aires

Manufacture of cathodic protection rectifiers

-Production plant: 400 m²

-Annual production capacity: 240 rectifiers and 200 instruments.

• HS CODE (NCM):

- 8504.40.21.900J / Rectifiers for cathodic protection
- 9032.89.11.000Q / Regulators for cathodic protection powered by thermogenerators or systems with photovoltaic modules
- 8536.50.90.519J / GPS-synchronized switches for on/off testing
- 8537.10.20.000C / Controllers for photovoltaic modules
- 9030.33.90.900F / Electronic instruments for electrical measurements without recorder
- 9030.83.90.900F / Electronic instruments for electrical measurements with recorder
- 9031.90.90.900Y / Reference electrodes for cathodic protection
- 8517.62.99.900R / Systems for wireless remote management



PEFOW EQUIPAMIENTOS S.A., customized high-speed valves



The Argentine shipbuilding industry hosts several input, components, and service suppliers. Although many of them have a certain degree of standardization, their production can also be customized for each vessel. **Such is the case of Pefow Equipamientos S.A., the only company nationwide that manufactures accessories for storage and transfer containers for liquids and gases, loading arms and pressure and vacuum valves in aluminum, steel and polypropylene, and flame arrester equipment.**

The company is well known both domestically and internationally for its high jet valve. This valve is custom-built and adaptable to different types of liquid and gas storage tanks. It is certified under the Lloyd's Register and comes in sizes from 2 to 12 inches, with a production capacity of 300 units per year.

Pefow Equipamientos S.A. also manufactures carbon steel, stainless steel, and aluminum loading arms, measuring hatches, and accessories for storage tanks, such as pressure and vacuum valves, flame arresters, mechanical level indicators, emergency vents, measuring hatches, and equipment for rendering tanks inert, among others.

The company is receiving technical assistance from INTI to carry out tests according to the corresponding standard; with this, its high-speed vent valves, corresponding to its TM model, would reach the certification provided by Lloyd's Register. The specialist Leonardo Tufaro, member of the Welding Department of the Mechanical sector of INTI, explains that this certification allows the company to increase its presence in the naval market internationally.



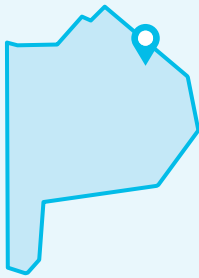
Certified under ISO 9001, ISO 14001, and OHSAS 18001 (Occupational Health and Safety Assessment Series) Standards, **it covers 90% of the domestic market. It has an extensive track record exporting to destinations such as Brazil, Colombia, Ecuador, Spain, the United States, Mexico, Paraguay, Peru, Uruguay, and Venezuela. Its future export goal is to secure these markets and to gain access to those of Cuba, El Salvador, the Middle East, and Trinidad and Tobago, among others.**



The Argentine shipbuilding industry encompasses 373 public and private companies that employ 7,010 workers directly, according to official data from 2020.

Maximiliano Espósito, head of Foreign Trade at Pefow Equipamientos, claims that international companies generally buy standard valves, yet, he says, “with a longstanding trajectory of over eighty years, our company **is the only international SME manufacturing customized high jet valves to meet the demands of our customers.**” He also emphasizes that the company stands out for its after-sales service through representatives in the countries of destination.

“We are a cutting-edge company that manages to exceed our clients’ needs and expectations. We are backed by an outstanding track record. We are the only ones to offer tailor-made solutions with unbeatable quality and durability compared to our competition,” concludes Mr. Espósito.



PELOW EQUIPAMIENTOS S.A.

Wilde, province of Buenos Aires

Manufacture of valves and accessories for storage tanks

-Production plant: 2500 m²

• POSICIONES ARANCELARIAS (NCM):

- 8421.39.90.900T / Flame arresters
- 8421.39.90.900T / Gooseneck with flame arresters
- 7609.00.00.000R / Goosenecks
- 9026.10.29.900G / Level indicators
- 9026.90.10.900R / Indicator parts
- 8309.90.00.990L / Measuring hatches
- 8481.40.00.900K / Valves and vents
- 8481.90.90.000V / Valve parts
- 8481.10.00.900T / Regulator modules
- 7306.29.00.900B / Floating suction and skimmers
- 8428.90.90.900Z / Loading arms



LA PASTECA, a trend in functional ship windows and portholes

Many specialized SMEs are involved in shipbuilding and ship repair, and their interaction with shipyards and shipping companies ensures the sector's efficient integration. In this area, **La Pasteca provides integral solutions to the naval industry for ship windows and portholes and the scrapping of large inactive ships.**

It is the only Argentine company specialized in the design and manufacture of opening and fixed portholes and windows under ISO Standards, built in SAE 1010 carbon steel, AISI 304 stainless steel, bronze and aluminum, tempered glass, and frames with nickel-plated or mirror finishes. The company has been certified by the Italian Naval Register (RINA), ClassNK (Nippon Kaiji Kyokai), and by the Argentine Naval Prefecture.

INTI's technical support helped improve the company's processes for increased productivity and international competitiveness. At the same time, and as part of the activities of the National Program for Supplier Development (PRODEPRO) of the Secretariat of Industry and Productive Development and the National Directorate of Strategic Projects (DNPE), audits took place for assessing the company's facilities, machinery, and operations, which allowed it to complete its application for the Program.



Excluding navy bases, Argentina has 101 ports across the country—67% private and 33% public—whose primary use is commercial and industrial exploitation.



The company's windows line is functional for all vessels, and their designs may vary depending on each customer's needs. The most popular models are square, rectangular, trapezoidal, and parallelogram-like. They have an 18-month warranty as of the construction completion date or a 12-month term as of installation.

Luciano Bonomi, the company's institutional manager, says they work without standardization. Their windows have different designs that provide special and customized habitability for the interiors of a ship.

The firm has an annual production capacity of 450 units, **which covers 100% of the domestic market. Given that ship windows and portholes are a scarce product internationally, it is also planning to expand into the Latin American markets and strengthen its presence in Brazil.**

"What marks us out from most of the world's ship window and portholes companies is that we are setting trends internationally with tailor-made designs that are functional for all types of vessels," concludes Mr. Bonomi.



LA PASTECA

Mar del Plata, province of Buenos Aires

Manufacture of ship windows and portholes

-Warehouse: 500 m²

• HS CODE (NCM):

- 7308.30.00 / Iron, steel, and stainless-steel windows and portholes

- 7608.10.00 / Aluminum windows and portholes





CARMELO GARRIDO E HIJOS S.R.L., innovation in trawl doors

The shipbuilding industry expects suppliers of parts and components to provide new solutions for their customers' needs. Carmelo Garrido e Hijos S.R.L. is one of the outstanding companies in this industry, with a **one-of-a-kind design of trawl doors for coastal shrimp and prawn fishing**, which are marketed under the brand name GA and intended for vessels ranging from 15 to 40 meters in length overall.

INTI certified its welders, thus adding value and quality to its products and services. Argentina has a welder qualification system under the IRAM-IAS U 500:138 Standard, and there are only six organizations authorized to undertake such a process. Among them, INTI stands as the only national institute being able to ensure the labor skills to execute this activity. Additionally, after acquiring a CNC plasma and oxy-fuel thermal cutting pantograph, the Institute provided technical assistance on management technologies. "This helps the company improve the quality of its solutions and streamlines the plant's production times", says Mónica Campanaro, INTI's Regional Assistance Management coordinator.

Florencia Garrido, head of the company and Mar de Plata Shipbuilding Industry's incumbent chairwoman, explains the most outstanding features of the product: **"Thanks to the doors' unique design, catch performance at sea becomes more efficient. This is due to its hydrodynamics, which allows for higher trawling speed, larger net opening, lower exhaust temperatures, fuel saving, and quicker positioning under the water"**.





Ms. Garrido emphasizes other attributes of the product, such as the absence of chains and its shape and weight distribution, which result in excellent stability on the seabed. The trawl door performs much better on soft or muddy bottoms thanks to the false keel width and adapts to all types of depths. In addition, it has a simple and practical placement and adjustment system.

The trawl door's hydrodynamic steel surface is linked to the net through the flanges or hooks, and both are part of the fishing system used by the fleet. It is equipped with depth, door opening, and inclination sensors, whose operation can be monitored from the cabin.

With an annual production capacity of 45 units, the company covers 70% of the domestic market and **plans to enter the Brazilian, Chilean, and Uruguayan markets.**

“Carmelo Garrido S.R.L. is renowned for its highly innovative and modern trawl doors and for its after-sales service through follow-up and assistance on the correct installation and operation of the door, which can be easily implemented and adapted to the fishing system”, says Gustavo Almadoz Garrido, the company's industrial designer.



CARMELO GARRIDO S.R.L.

Mar del Plata, province of Buenos Aires

Design and manufacture of trawl door for coastal shrimp fishing

-The company manufactures three different sizes of trawl doors according to the vessel power, dimensions, and type of fishing.

• HS CODE (NCM):

- 7326 / Other iron and steel products.





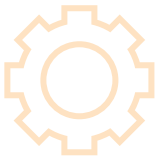
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Argentina

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y Desarrollo Productivo





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