





# Confab Equipamentos

Since its foundation in 1943, Confab Equipamentos has pursued constant innovation and improvement, ensuring its prominence among Brazilian companies.

Confab Equipamentos produces equipment used in the chemical, petrochemical, oil and gas, steelmaking, pulp, energy and steam generation industries as well as in the infrastructure, engineering and construction segments. Confab Equipamentos' mill, located in Pindamonhangaba, SP, has an annual production capacity exceeding 1 million man-hour/year, and relies on modern laboratories for non-destructive, mechanical and chemical tests.

The company has grown alongside the development of Brazilian national industry and has already participated in all Petrobras refineries projects with the supply and assembly of equipment. It has supplied equipment for Petrobras' oil platforms, such as PRA-1, as well as for nuclear power plants in Angra dos Reis, RJ. Since its foundation, the company has supplied more than 1.2 million tons of equipment for the domestic industry.

EQUIPMENT UNIT	
Total area	904,239 m <sup>2</sup>
Constructed area	54,316 m <sup>2</sup>
Production capacity	over 1 million man-hour/year
Maximum equipment volume	50,000 tons per year



# Materials and Welding Expertise

Confab Equipamentos is qualified to meet the most demanding customer's technical requirements and construction codes for welding, thermal cutting, hot and cold forming, heat treatment and physiochemical/mechanical properties of materials.

The extensive knowledge of its people in welding technologies and the use of the Welding Technical Center, located in its industrial mill, allow the company to develop and implement welding, forming and heat treatment procedures for materials such as carbon-manganese, chromium-molybdenum, chromium-molybdenum-vanadium, duplex and stainless steels, in addition to nickel and aluminum alloys, clad plates, materials for H<sub>2</sub>S jobs, materials for complex reactors (HDR/HDS) with step cooling, J. Factor and Bruscato requirements.

Welding procedures are qualified pursuant to the applicable standards, such as:

- ASME SECTION IX
- AD-MERKBLATTER HP 2/1
- AWS D1.1
- NF A88-110
- AWS D13.1 (rockets) ANSI/AASHTO/AWS D1.5
- API 1104
- Petrobras standards

Both planning and execution of welding non-destructive tests are conducted by highly qualified and certified people, in compliance with international codes and standards such as AWS (American Welding Society), Petrobras, IBQN (Instituto Brasileiro de Qualidade Nuclear) and FBTS (Fundação Brasileira de Tecnologia da Soldagem).

▼ *Welding of a reactor connection (CrMoV) by the SMAW process.*





# State-of-the-art Technology

With leading technology processes, the company is able to meet the most severe and complex conditions of supply. Its industrial park meets both domestic and foreign technical codes and specifications, including some of the main manufacturing processes and equipment in the market:

- Thermal process for cutting (for example: oxyfuel and plasma), with CAD/CAM control
- edge mill and rotating cutter for V and J beveling, 12m length
- bending rolls machines: 150mm capacity at hot forming (700°C) and 100mm at room temperature, maximum width of 4,100mm
- 6,000 and 1,500-tons capacity hydraulic presses
- automatic welding equipment (submerged arc, traditional and square wave), semi-automatic (FCAW / GMAW / TIG, orbital TIG and MIG/MAG) and SMAW (Shielded Metal Arc Welding)
- welding machines for membraned pipe panels for boilers
- machine for bending tubular panels
- furnaces for heat treatments (max 1,200°C): internal furnace with capacity for 100 tons/ parts and external furnace with capacity for 300 tons, 20 meters in length, 8 meters in height and 10 meters in width
- vertical lathe for pieces of up to 160 tons, diameter up to 12m and height up to 5m
- universal milling machine – floor type – 200mm spindle, turning table 3x3m (60-tons) and 12m fixed table
- 100 – 60 – 40 – 20 ton capacity overhead crane
- complete grit blasting and painting facilities
- non-destructive test equipment and facilities

## ▼ External heat treatment furnace.



▲ Bending roll machine – 2,200 ton capacity.



▲ Hydraulic press with 6,000 ton capacity (4.5m in height, 5m in width).



◀ Heat treatment furnace.



*Feed heater for the  
UN-REPAR delayed  
coker unit.*



## Services

The company has complete infrastructure to provide specialized and innovative services to its customers, including the assembly of equipment and commissioning of industrial mills.

- integrated logistics, from supply to delivery of the product to the customer
- use of special software for complex calculations (thermal fatigue, finite elements)
- technical assistance
- equipment revamp and plant modernization
- own engineering:
  - basic: mechanic / process
  - detailing: utilization of materials, drawings and shipment lists
  - technical assistance, commissioning and start-up
  - after start-up services
  - use of softwares such as CAD, Inventor, Compress, PDMS, Microstation and HTRI, Aspen etc.

## Montagens

Confab Montagens, a company 100% controlled by Confab Equipamentos, has proven experience in highly complex operations and has infrastructure to work in the assembly of mills and industrial systems in the turnkey modality.

Offers, in total synergy with Confab Equipamentos, integrated solutions through management of all activities related to the supply of complete mills, be it planning, engineering, procurement, supply, construction, assembly, operational assistance and training, adding value to clients operations.



▲ *High pressure gas storage vessels.*

## Oil, Petrochemicals and Gas

Confab Equipamentos is one of the leading Brazilian suppliers of equipment and in the refineries segment.

- liquid and gas storage equipment:
  - cylindrical and vertical reservoirs with fixed or floating/pontoon roofs
  - refrigerated or cryogenic reservoirs for liquefied gas storage
  - spherical or cylindrical pressurized vessels – leader in the Brazilian market with over 200 storage spheres supplied
- solid and multiwall high pressure vessels and reactors -HDT / HDS
- process columns and trays
- petrochemical furnaces (hydrogen generator, feed heater, naphtha, etc.)
- chemical and petrochemical plants
- offshore equipment (nodes, piles, tubular products, diverse structures, templates (bajas), butts, etc.)
- heat exchangers
- metallic structures
- pioneer and sole manufacturer in Brazil of Chromium-Molybdenum-Vanadium (CrMoV) reactors, high complex material in welding and state-of-the-art processes for operations under severe pressure and temperature conditions

▼ *Reactor in Chromium-Molybdenum-Vanadium (CrMoV).*





# Pulp and Chemical

Confab Equipamentos is the leading Brazilian supplier of Black Liquor Evaporation for pulp, with services ranging from research and project refinement, to installation of evaporation systems using HPD Veolia technology.

- LTV, FC, FF, MVR, BHR and LEC evaporators
- stripper columns
- methanol columns
- CRP (Chlorine Removal Process)
- draft tube crystallizers
- PIC crystallizers (Positive Internal Circulation)
- NCG systems
- boilers
- pressurized parts for chemical recovery boilers

▼ *Black Liquor Evaporator and NCG systems designed and supplied in turn-key regime through a technology partnership with HPD Veolia Water System.*







▲ *Precipitator system for alumina production, Alunorte-Pará, Brazil*

## Metallurgy and Mining

The company has already supplied more than 40 thousand tons of equipment to aluminum and alumina mills in Brazil.

- equipment for the aluminum industry (alumina precipitators, evaporation systems, bauxite storage silos, electrolytic containers, gas treatment systems and others)
- blast furnaces
- blow-oxygen converters (BOF)
- direct reduction furnaces
- electric arc furnaces
- ladle-furnaces
- continuous carriage and preheating systems for scrap
- gas holder (gasometer)
- dust-removal systems
- hot metal and Molten steel ladles
- degassing systems
- systems for ladle desilification, dephosphorization and desulfurization
- grinding plants for rolling mill cylinders
- material handling machinery: continuous ship loaders and unloaders, stacking and reclaimer machines, belt conveying systems and wagon turning devices

# Energy and Steam Generating Systems

Confab Equipamentos, provides state-of-the-art steam generating and energy systems.

- shop-assembled compact watertube boilers
- externally assembled watertube boilers
- boilers for special applications
- pressurized parts, closure panels and components for heat recovery steam generators
- pressurized parts: drums (steam and water), membraned panels, collectors, superheaters, reheaters, economizers
- auxiliary equipment: blowdown and blowoff tanks and deaerators



▲ Compact FM boiler – 80 ton/hour.

▼ Boiler burning wood chips



## Renewable Energy

Aligning itself with the renewable energy market, Confab Equipamentos provides a complete range of solutions for the demands of the market:

- tailor-made boilers designed to burn diverse types of biomass (bagasse, tops and leaves of sugar cane, wood chips, pellets and bark, elephant grass, etc.) for steam generation and power (CHP), suitable to operate at high pressures and capabilities, focusing on high energy efficiency
- boilers of various grates and burning systems technologies, including bottom and top supported solutions
- ethanol distillation plants
- biodiesel production plants, including the treatment of Glycerin Processes
- tanks for storing liquids up to 100,000 m<sup>3</sup>, with both fixed and floating models, in accordance with API standards
- wind mill towers

# Nuclear Energy

With an active participation in the Brazilian energy program, Confab is qualified to provide equipment and services to one of the most demanding markets.

Confab Equipamentos is a provider of challenging projects, such as the nuclear complex Angra dos Reis. The products the company is able to provide are:

- Reactor Containment Vessel (Sphere)
- vessels and pressure tanks
- feed water tanks
- process vessels and columns
- waste water/air decontamination plant
- locks (Access to Equipment/Emergency/Personnel)
- pool lining
- overflow cover
- special support structures for Primary Circuit Equipment (Varied)
- reactor support structures

▼ *Reactor containment vessel and process columns are among the equipment supplied to Angra dos Reis (RJ) nuclear plants.*







▲ *Nothing is more important than the health and safety of our employees and those who use our products.*

# Quality, Health, Safety and Environment

According to its policy, the company aims at achieving the highest standards regarding Quality, Health, Safety and Environment, incorporating the principles of sustainable development throughout its operations.

## Quality

The search for excellence is more than a Quality Policy in Confab Equipamentos. It is a guideline supported by an internationally certified program.

The company uses a unified management system, designed to ensure that clients always obtain the same standards of quality in our products and services around the world. Quality Management is integrated in all business processes.

## Processes to ensure quality

- destructive and non-destructive tests
- X-Ray tests using the 4 MeV linear accelerator
- pneumatic, hydrostatic and other tests
- PMI – Positive Materials Identification
- materials testing laboratory
- metrology laboratory
- ultrasonic equipment, including ToFD/EP (Time of Flight Diffraction / Echo Pulse) and Phased Array technologies
- equipment for industrial radiography and gammagraphy (linear accelerator and 320/225 KV)
- magnetic particles and penetrating liquids

## Health & Safety

The Company's practices not only benefit employees but also the communities where we operate.

## Environment

Confab is committed to sustainable business, minimizing the environmental impacts of its operations with efficient application of natural resources and energy.

For more information, please access [www.tenaris.com/QHSE](http://www.tenaris.com/QHSE)

*Linear accelerator for X-ray tests for heavy walls (up to 350mm) ▶*



## Certifications

Throughout its history, the company has accumulated the most respected certifications assuring quality and technical capability to provide equipment with high technological requirements.

- qualified to operate in nuclear areas by IBQN – Instituto Brasileiro de Qualidade Nuclear and ETN – Eletrobras Termonuclear, in accordance with CNEN-NN 1.16 standards
- approved by the National Board of Boiler and Pressure Vessel Inspectors as manufacturer of equipment bearing the ASME seal, upon certification and authorization to manufacture pressure boilers and vessels as per the American Society of Mechanical Engineers – ASME (seals U, U2 and S)
- the only company in Brazil and first in Latin America having the U3 Seal
- ISO 9001 certification
- R Seal, upon insertion into ASME Quality Manual of the chapter regarding Repairs and Changes
- in compliance with the National Board of Boiler and Pressure Vessel Inspectors Code

# Social Development

Since its foundation Confab Equipamentos has established deep roots in the community in order to provide mutual support between the industrial project and the community, promoting development through partnerships in projects conducted by different entities in Pindamonhangaba.

Within this proposition to promote economic, social and environmental sustainability, one of the company's mottos is to "help those who help themselves". The company is focused on projects related to education, health and environment that meet the following criteria: they were created as a community initiative; they benefit a large number of people; they promote voluntary work; they are conducted by entities known for their honesty and transparency.

During 2011, the company strengthened even more its relationship with Pindamonhangaba, by supporting initiatives that benefitted, directly or indirectly, an average of 30 thousand people. Education, health, culture and environment were the focus of our actions in Social Development in the community.



◀ 5,904,800 m<sup>2</sup> is the area of the Trabiju National Park, which is the main focus of the Environmental Education of Confab.





◀ *More than 15,000 children are benefitted every year by initiatives focused on Education with the support of Confab Equipamentos. Together, the “Study Excellence Award”, “Leaving the Streets” and “Anália Franco Scholarships” help dreams come true.*

### Education

As an incentive to maintain children and teens in school and to improve school performance, the company is involved in the “Leaving the Streets”, “Award for Excellence in Studies” and “Children’s Space Anália Franco” projects, which involved over 15 thousand young people in 2011.

### Environment

Support to initiatives focused on the preservation of the environment, such as the “Pinda Florida” Project, created in 2001, which has guaranteed the revitalization of squares and public spaces in the community and deals with actions regarding environmental preservation. Another action of the project was the publication of an almanac about the Atlantic Forest, entitled “Knowing is Caring”. This publication has been used in the preparation of public school teachers so that they can present the subject of biodiversity conservation in subjects such as Science and Arts.

### Social Action

Environmental participation through the “Pinda Verde” Project, which started in 2009 and in 2011 involved approximately 2000 students from municipal schools. The objective of the project is to cultivate vegetable gardens in the backyards of students’ homes, in an effort to improve life quality through improved nutrition. The students participate in activities that deal with themes like the preservation of the earth, care of the environment in which we live (rural or urban) and conscious consumption.

### Health and Sports

Support, since 2007, of the “Pinda Race”, which tries to incentivize and value the practice of sports and to promote health and improvement of the population’s quality of life. In this important partnership with the government and the community, thousands of people are discovering the value of union and team spirit. In 2011, the initiative was increased to create the “Athletics in the School” project, which, in its first year, has involved more than 600 students in 10 municipal schools.

### Art and Culture

Support of the Project “Historical Agents”, which intends to capacitate young people in the city in the art of restauration. Also, another initiative in art and culture is the “Guri Project”, which, since 2010, has allowed 315 students learn music at no cost in their free hours.

### Volunteers in Action

The participation of the company in social projects of the community in which it is located involves its professionals as well. Ever since 2003, the project “Volunteers in Action” has contributed to two campaigns: “Help Japan”, created to assist in the reconstruction of that country, devastated by earthquakes and tidal waves and the “Let’s Multiply” to help the victims of the rains and mud slides which destroyed Nova Friburgo (RJ) and other cities of the region. There are other programs, such as the Blanket Campaign and the Solidarity Tree.



For contact information, please visit:  
[www.confabequipamentos.com.br](http://www.confabequipamentos.com.br)