

SUCCESS CASES OF THE STATE OF MINAS GERAIS/BRAZIL

AGRICULTURE, LIVESTOCK AND PLANTED FOREST

VALLOUREC SOLUÇÕES TUBULARES DO BRASIL

Vallourec is among the world leaders in premium tube solutions, supplying mainly in the energy markets (oil and gas, power generation). Its experience also extends to the industrial sector (including mechanical, automotive and construction).

With production lines in Minas Gerais and São Paulo, Vallourec Tubos para Indústria (VTI) provides of steel Cold Drawn tubes and tubular solutions for the industry in general, especially for the automotive, energy, machinery, and industrial equipment segments. In Rio de Janeiro, Vallourec Tubular Solutions Ltda. (VTS) provides specialized services for the oil and gas sector. And in Espírito Santo, it provides anti-corrosive coating services. The tubes produced by Vallourec in Brazil are known as Green Tubes, as they are manufactured from scrap and high quality vegetable charcoal produced with its own eucalyptus forests located in Minas Gerais State.

With approximately 17 thousand employees, integrated plants in more than 20 countries and an advanced research and development sector, Vallourec works side by side with its customers to offer more than just tubes, but innovative, safe, competitive and intelligent solutions to make all possible projects.



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Continuous Carbonization Reactor - Carboval®



Manufacturing of high quality charcoal, using a continuous and completely automated vertical reactor with the capacity to make the most of the potential of the energy contained in the forest, being a revolutionary and unique technology, patented by Vallourec



This reactor has zero methane emissions, emitting no smoke during the process, being compatible with the sustainability requirements of the circular economy and aligned with the greenhouse gas reduction strategies. The entire process begins with the renewable eucalyptus forests of the Vallourec Forestry unit: there, wood is planted, cultivated and harvested using processes and practices certified by internationally recognized patterns. The charcoal obtained is used in Vallourec's steel tube manufacturing processes.



Carboval® continuous carbonization technology allows wood to be transformed into charcoal in just 16 hours, without releasing methane and using up to 95% of the raw material's energy. A continuous carbonization reactor replaces 7 conventional masonry furnaces and produces, in addition to charcoal, pyrolygneous extract and high quality bio-oil, being applied in chemical, agricultural, food, biofuel and other industries. During the development of research in recent years, the pilot plant reactor produced 39 kt of charcoal, which were tested in Vallourec and third-party blast furnaces. In 2023, Vallourec will begin production in its first industrial-scale unit, Carboval Diamante, with the installation of 03 reactors, and is expected to achieve production over 20kt/year after the unit is commissioned.



Carboval® technology guarantees the production of high quality, homogeneous coal with a high fixed carbon content, which can reach up to 86%. In this way, this product was additionally certified for other uses, especially in replacing petcoke in the pelletizing plants and electric arc furnace industries. Therefore, technology is an effective solution on the path to decarbonization

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