



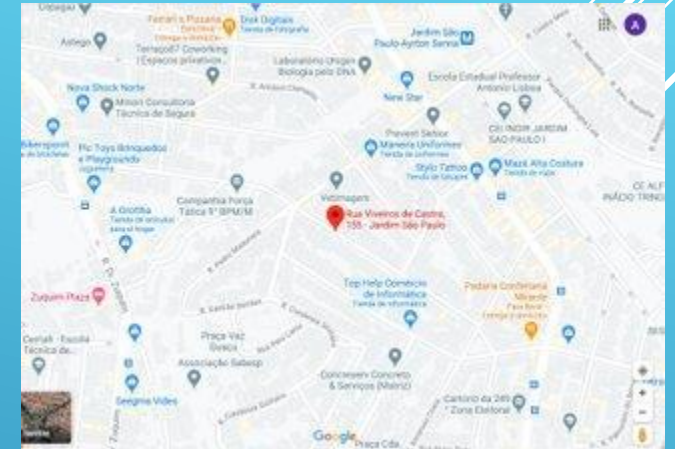
SERVICE OF OPTIMIZATION OF VARIABLE COSTS
AND PRODUCTIVITY FOR THE CEMENT INDUSTRY

INTRODUCTION OF THE COMPANY



President / Martín Ambrosi &
11 employees

- ❑ Mechanical Measurements in Kilns and Mills
 - Hot Stabilization of Kilns
 - Mill Stabilization
 - Burner Stabilization of Running Kilns
 - Stability Control of Running Kilns
- ❑ Optimization of Cement Plants
 - Increasing of Kilns and Mills Production without Investments
 - Improvement of Cement KPI's
 - Reduction of Heat and Electrical Consumption
 - Cost Reduction
 - Plant Audit



TYPES OF SERVICES

The company performs two types of services:

1- COST REDUCTION: this service has the focus in variable cost reduction and has impact in CO₂ emissions reduction and mills capacity increasement.

2- KILN PRODUCTIVITY OPTIMIZATION: the focus in to increase the kiln capacity by process activities and without any investment.

Both types of services have 2 stages of implementation.

DESCRIPTION OF COSTS REDUCTION SERVICE

The cost optimization service is carried out in 2 stages:

Stage 1

□ Implementation of actions of cost reduction of the product, without modify the quality: optimization of clinker factor, minimization of the standard deviation of 28 days strengths, detection of improvement opportunities with cement additives.

Stage 2

□ Improvements in the specific energy consumption in mills to reduce costs.

The activities of these stages are statistically validated to ensure that the quality of the product is the same or higher than at the beginning of the service.

The client receive free of services the following activities: Benchmarking Report, Statistical Training, Mechanical Diagnosis of Kilns and Mills.

DESCRIPTION OF KILN PRODUCTIVITY

OPTIMIZATION

The kiln optimization service is carried out in 2 stages, requiring one of them a major maintenance shutdown of the equipment:

Stage 1

- Optimization of kiln production through quality and operation process actions
- Comprehensive diagnosis of rotary kilns, in order to prevent and correct during the operation unscheduled shutdowns with loss of production This activity is free of charge for the client

Stage 2

- During a maintenance shutdown of the kiln of at least 20 days modifications are made that allow a second optimization of production

DURATION OF BOTH SERVICES

Both services has same period of approximately 30 days to the following activities:

- ☐ Agree and sign the service contract
- ☐ Analysis of information of quality, process and equipments
- ☐ Agreement of the baseline, the initial cost when the services start
- ☐ Presentation of the Roadmap defined to the type of optimization

Duration of Cost Reduction Service: two types of action are carried out in this service:

- 1) General actions** of quality are carried out **in 3 months** and **mills improvements in less than 30 days**
- 2) Reduction of the standard deviation** of strengths at 28 days that **takes 6 months**

Duration of Kiln Optimization: the second stage of this activity needs a major maintenance shutdown, the productivity improvement for both stages is get in **less than 30 days**.

MODALITY OF CONTRACT

- ❑ 6 to 12 months of project time
- ❑ Partial payments as improvement actions are implemented (monthly)
- ❑ All expenses are paid by the client (any type of transport that must be used to reach the cement company, accommodation, meals, mobility and any type of expenses that may arise in opportunity to develop the service in the cement plant).

REFERENCE EXAMPLE

Cement Mill Optimization

Optimization of Productivity of Cement Mills N° 9, 10 and 11

- ❑ Activities of Process and Operation Modifications
- ❑ 21 days of project
- ❑ Increasement of Production from 100 to 122 Tn/h
- ❑ **Secondary KPI Improved:** Reduction of 16% in Electrical Consumption
- ❑ **Contact: for confidentiality reasons ask this information to RACAI**

Kiln Optimization

- ❑ Optimization of Productivity of Kiln N° 4
- ❑ Activities of Process and Operation Modifications
- ❑ 30 days of project
- ❑ Increasement of Production from 5200 to 6000 Tn/day
- ❑ **Secondary KPI Improved:** Reduction of 8% in Thermal Consumption
- ❑ **Contact: for confidentiality reasons ask this information to RACAI**

WHY A COMPANY SHOULD CONTRACT US?

RACAI can help any client to:

- Reduce Variable Costs
- Improve Clinker Factor
- Reduce CO₂ Emissions
- Increase Cement Mills and Kilns Capacities
- Help to the Usage of Alternative Fuels

Service Modality:

- Advantages of payment method for the service: practically 100% based on Results
- Free additional activities of high added value for the industry: Benchmarking Report, Training Activities, Mechanical Measurements in kilns and ball mills
- Cost reduction service is paid monthly with the own saving of the company
- THE SERVICE IS FREE UP 3% OF KILN PRODUCTIVITY INCREASEMENT. The client pays the service if the productivity is increased more than 3%.

THANK YOU VERY MUCH...