



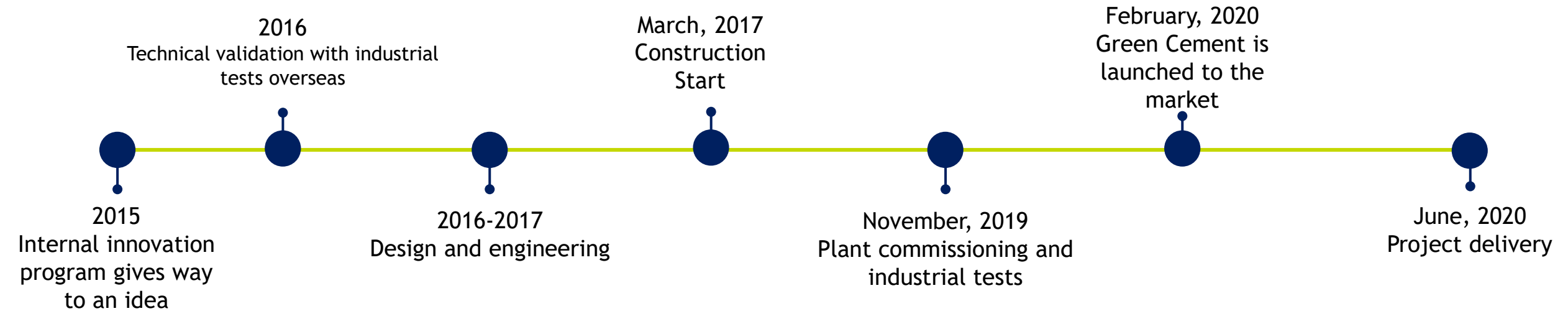
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**DAY**

 **ARGOS**

# Calcined Clays

Cartagena, Colombia  
June 15-16, 2022

# Calcined Clays Line in Rioclaro: From an idea to a reality



**~38%** Emissions reduction\*

**~30%** Power consumption reduction\*

**+600** Jobs created by construction

*\*initial estimates*



Investment **~USD 78M**

Calcined clays  
Installed capacity **~450,000**  
tons per year

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# This new production line is fitted with cutting-edge, one-of-a-kind cement production technology

This new line allows Argos to custom-make cement products according to the needs and requirements of our customers' projects



In this process, Clinker use is reduced thanks to the incorporation of calcined clays (artificial pozzolans)

By using this technology, Argos places itself at the cutting-Edge of new raw material for the cement industry

The Rioclaro plant is located at the center of Colombia, which allows us to supply all the markets and meet the demands of the construction sector

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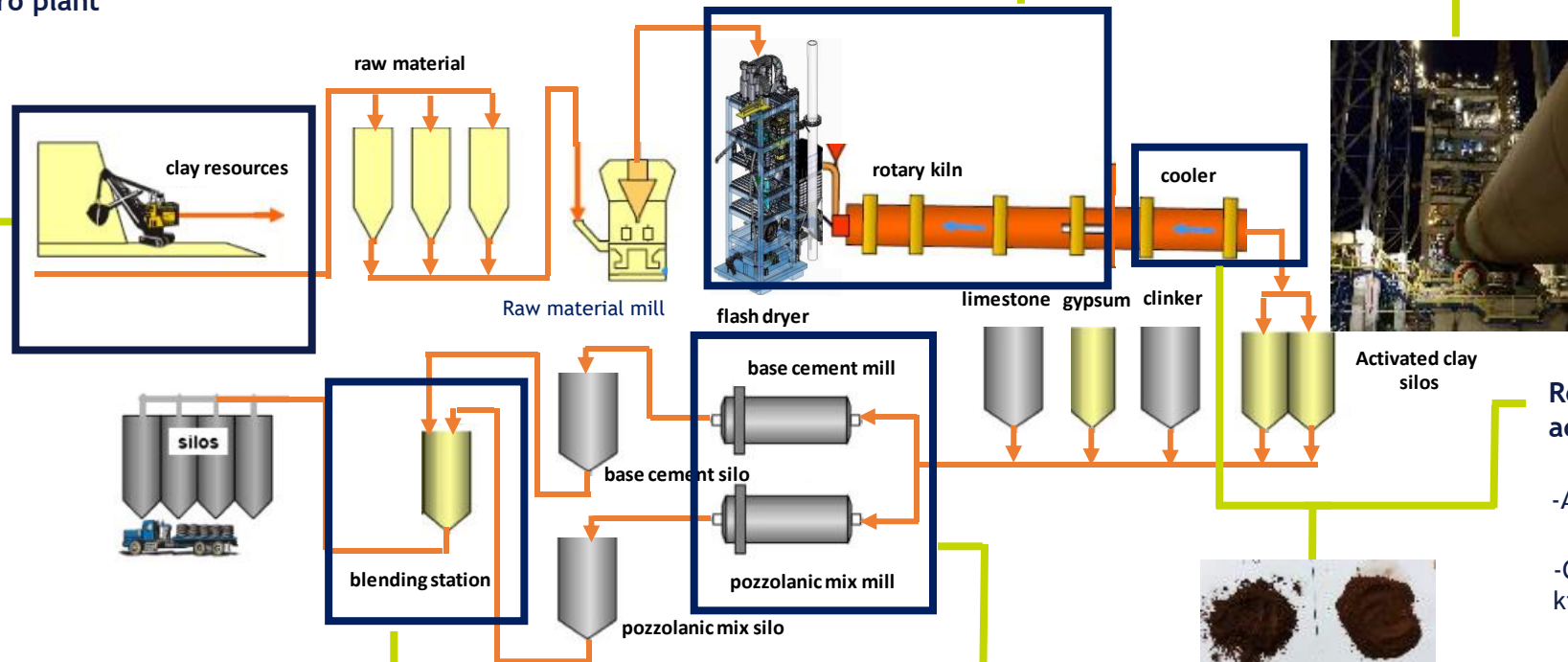
# Calcined clay production and product design

Clay selection at the Altorrico mine, close to the Rioclaro plant

Average kaolinite content 25-38%

Clay activation process: pozzolanic reaction

- Thermal process activation.
- It generates a high content of reactive alumina and reactive silica in dihydroxilation process.
- Pozzolanic activity index: Between 95 and 110% after 7 days



Reductive atmosphere Control during activation and cooling processes

- Amount of iron ore in raw material
- Calcination temperature inside rotational kiln.

Technical benefits:

- Grindable material hardness and desired fineness.
- Grind flexibility and efficiency.
- Better cement performance per grind and separate mix.

Total capacity of the mixing station: 400 Ton / day

Keys:

- Doser precision.
- Different types of cement to produce.
- Better performance per grind and separate mix

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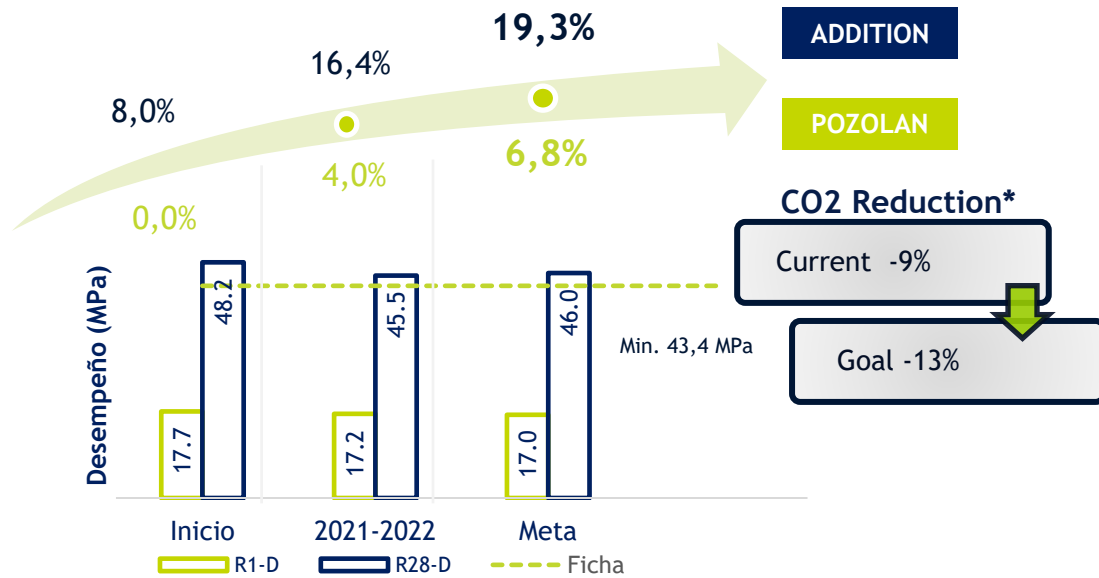




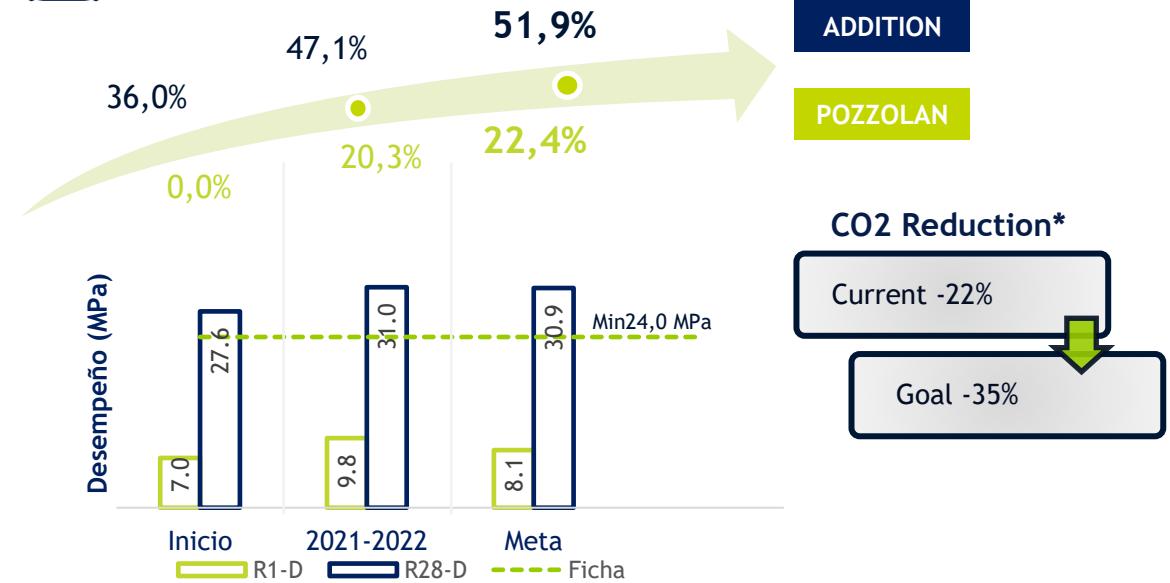
# Calcined clays allows for record increases in Clinker substitution rates



## Structural Cement Max



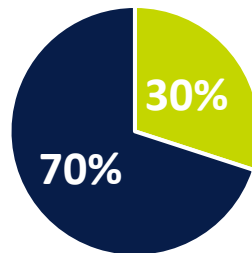
## General Use Cement



## Difference in Variable Costs

1 ton of calcined clays vs  
1 ton Clinker

\*2022 YTD



■ Green Cement Rio Claro ■ Rest of Colombia

- The knowledge acquired and the development of structured learning processes allows us to offer environmentally conscious products and opens a wide array of concrete possibilities.
- The product sees greater market acceptance through trainings, customer visits to our plants, and color stability.

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# Cementos Argos leadership in calcined clays opens a path for short, medium and long-term goals

Reaching a  
**3-million-ton capacity** in  
calcined clays by 2030

Cement capacity expansions  
**prioritize** calcined clay  
projects

Innovation and Development  
focused on other **potential  
uses for the material**

New projects in **other  
geographies**



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