

# FL Smidth Private Limited

Calcined Clay: The Future of Green Cement

PRACTICE



Clay is found almost everywhere in the world, making it a natural solution in regions where a lack of limestone availability drives up the cost of cement. With the right treatment, clay makes for an excellent replacement for clinker, and can be easily treated by utilising equipment that cement plants already have on site, further reducing investment costs.

The following technologies and processes are involved in creating calcined cement:

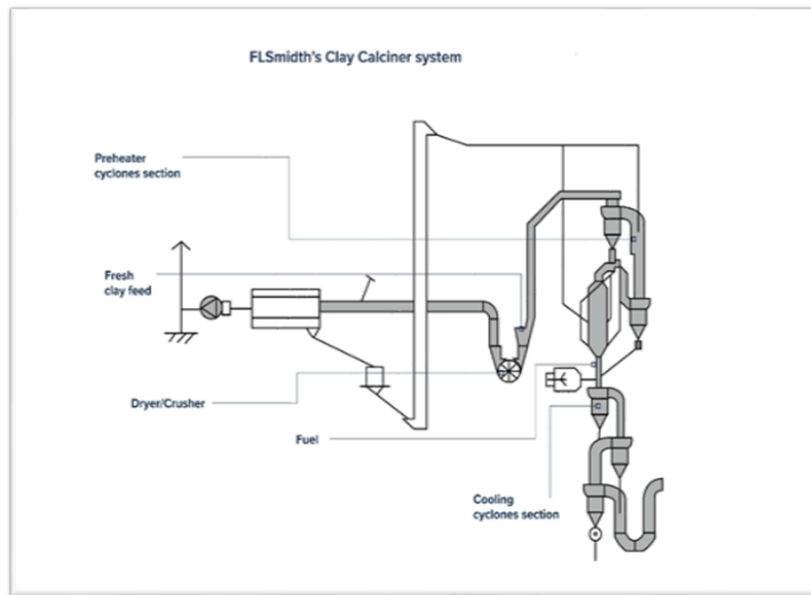
- Usage of the company's established ET dryer crusher, especially designed for materials like clay with up to 40% moisture content.
- Using waste gases from the preheater, the feed material is dried and crushed in one operation, achieving both the required fineness and a free moisture content of just 1% by the time the clay enters the preheater.
- From the dryer crusher, the material is fed to the 2-stage preheater/calcliner system for calcination. An important aspect of the process is that any fuel could be fired in the clay calciner, including up to 100% waste fuels.



**Figure 1:** *FL Smidth's Clay Calciner System*

The organisation uses the best available technologies from the cement and mining industries to optimise clinker substitution while maintaining cement quality. To further decarbonise the cement industry, F L Smidth and a series of leading industry experts have formed a new

partnership called ECoClay to reduce CO<sub>2</sub> emission from cement production by up to 50%. The ECoClay partners aim to develop and commercialise the technology needed to replace fossil fuels in the calcination of clay by fully electrifying the process. The ECoClay partners expect to be able to commence construction of the first full-scale electric clay calcination installation by the end of 2025.



**Figure 2:** *FL Smidth's Clay Calciner System*