

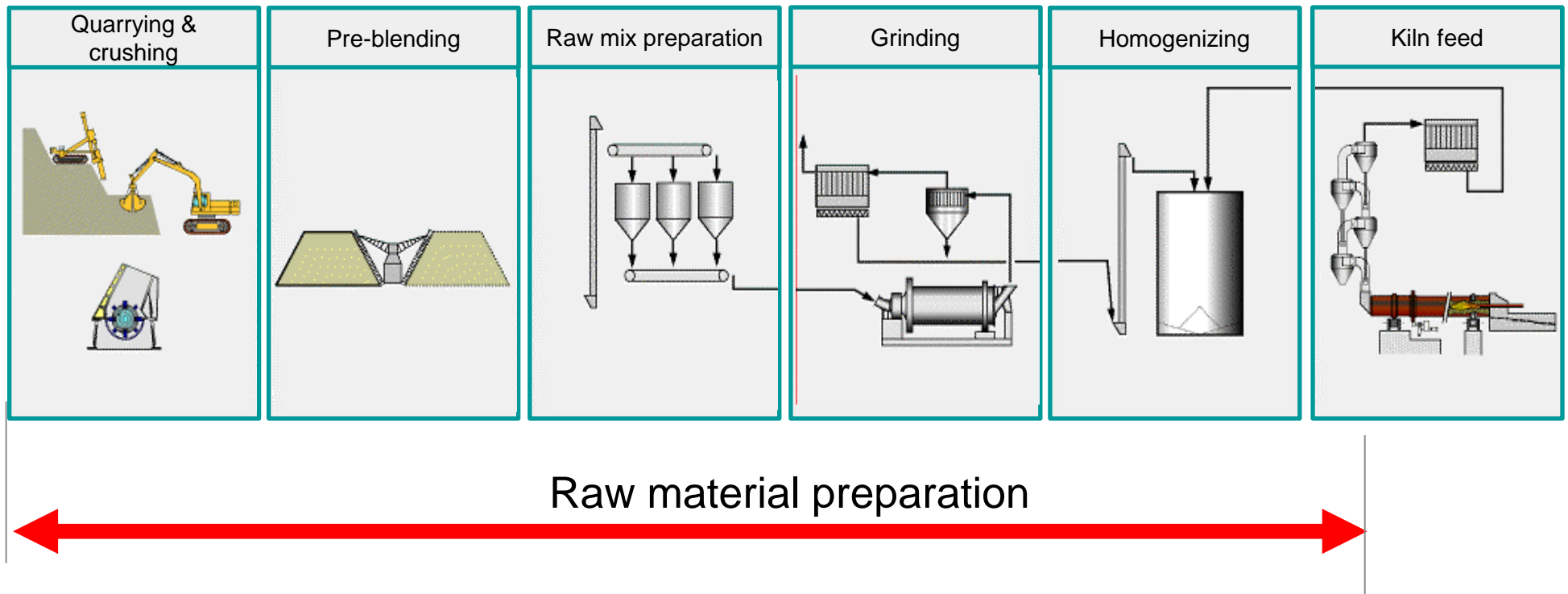
Raw material quality

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Definition

- Preparation of (optimal) raw mix through various process steps to feed the kiln with the required quality.



Typical challenges in raw material preparation



Missing material in the raw mix and accuracy?



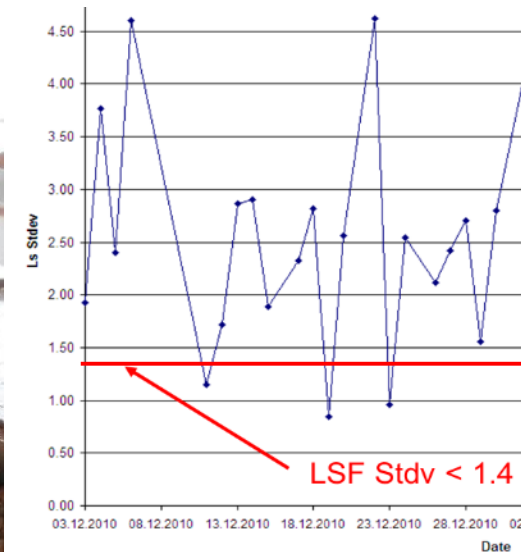
Contamination?



Efficient size reduction?



Manual intervention?



LSF variations?

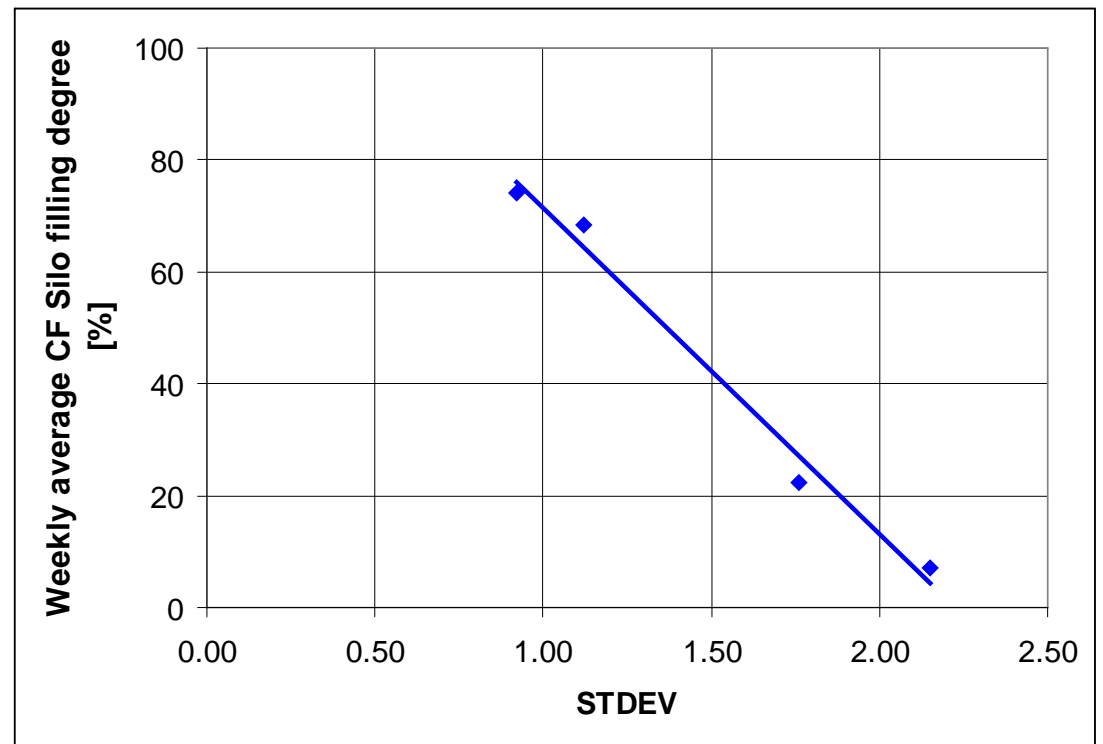
Challenges: Achieving (optimal) raw mix target

- Achieving optimal raw mix targets is crucial for fuel economics, burnability, coating, kiln emissions, ...
- Potential root causes not achieving raw mix targets:
 - ▶ Weighing/dosing accuracy not accurate
 - ▶ Extraction and handling issues
 - ▶ Poor blending/mixing efficiency
 - ▶ Storage management



Challenges: LSF fluctuations

- Low LSF fluctuations are crucial for maximum kiln feed rate, kiln stability and clinker quality.
- Potential root causes for high LSF fluctuations:
 - ▶ Poor blending/mixing efficiency
 - ▶ Bin extraction issues
 - ▶ ...



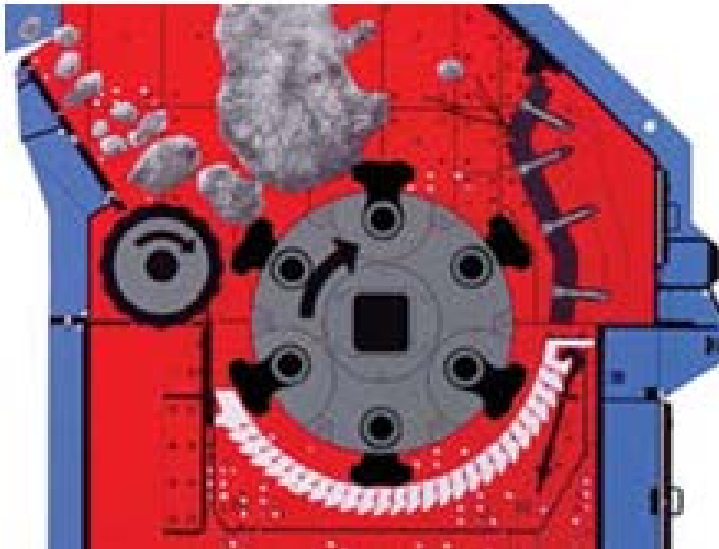
Challenges: Energy efficiency

- Energy efficiency:
 - ▶ Proper size reduction and automated systems.
- Potential root causes for low energy efficiency:
 - ▶ Inefficient blasting, crushing, grinding (input/output size)
 - ▶ Manual handling/re-handling.



Challenges: Optimal equipment live

- Achieving optimal equipment live is crucial for plant maintenance cost economics.
- Potential root causes for high maintenance costs:
 - ▶ Inefficient blasting, crushing, grinding (input/output size).
 - ▶ Wrong equipment/raw material selection.
 - ▶ Manual handling/re-handling.



Economics in raw material preparation

- Achieving optimal **raw mix**, maintaining low **LSF variation**, energy efficient size **reduction** and an optimal **equipment life** are key for cement producer. The economy can vary from being leader in manufacturing costs until not-surviving in the market due to importance of the raw material preparation.

What do we offer?

Our competencies in raw material preparation

- Review of overall raw material preparation in plants and projects.

- **Technical due diligence on site** with simple & hands-on visual reports with action list generation for follow-up and ease of tracking. Providing solutions for:
 - ▶ Achieving designed raw mix targets.
 - ▶ Minimizing LSF fluctuations.
 - ▶ Sizing and transporting energy efficient until kiln.
 - ▶ Maximizing equipment live and spare part.