Cement FingerPrint facilitates customers to collaborate with ABB experts to achieve optimal process performance and improve cost effectiveness. Cement FingerPrint ensures tuning of plant control system efficiently, benchmarked to industry best practices. Further, Cement FingerPrint offers a systematic approach in capturing the process sensitivity using plant step tests, building a dynamic process model, analyzing site constraints and identifying improvement opportunities. On review and acceptance of the solutions, the same can be implemented to realize identified benefits.

**Deliverables**
Cement FingerPrint identifies potential benefits and offers improvement opportunities, including:
- plant benchmarking with industry standards.
- plant variability study.
- control loop performance report.
- process performance analysis.
- energy efficiency potential.
- access to best practices.

**Workflow**
The complete implementation process is carried out in three phases:

**Pre study phase**
- Historical key data collection
- Agreement on schedule

**FingerPrint implementation phase**
The workflow comprises the following steps:
- Collection of plant data
- Execution of plant step tests and modeling
- Calculation of potential benefits
- Report generation
- Report and workflow validation
- Submission and discussion with customer

**Benefit realization phase** (if approved)
Recommendation implementation.

ABB’s Cement FingerPrint is a process optimization and energy consulting service designed to capture, analyze and improve operational performance and energy efficiency across the cement making process. Using ABB’s proven analytical and process modeling tools, complimented with in-depth industry specific knowledge and competency, we help our customers to achieve operational excellence.
Improving your operational excellence and performance

Architecture
- Collection of operational data
- Analysis of process performance and site constraints
- Plant modeling
- Usage of obtained process models and operational data to identify process enhancement and energy efficiency opportunities

Value proposition
- Process and energy consulting service for cement plants
- Higher production and better quality
- Lower energy consumption and reduced CO$_2$ emissions
- Cement FingerPrint is directly related to ABB’s solution portfolio for cement industry
  - Process control system
  - Variable speed drives
  - Instrumentation & actuators
  - Continuous gas analyzers
  - Emission monitoring
  - Online measurement for bulk materials
  - Advance process control solutions
  - Heat recovery power plants
  - Energy management solutions
- Minerals Remote Monitoring Center (MiRMC) offering
  - Remote audit
  - Monitoring and tuning of plant control system and process

Cement FingerPrint workflow

Results
- Process audit report identifying opportunities for minimizing process variability, improvements in production and reductions in energy consumption and CO$_2$ emissions

Analysis
- Plant benchmarking
- Process performance improvements
- Energy savings improvements

Data Collection
- Plant design and data
- Historical process and lab data
- Plant sensitivity test for selected processes

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