

# AI-Soil Analyzer

Continuous aggregate analyzer with Visual AI



## 1. Summary

A leading multinational company in the cement sector has implemented **AI-Soil Analyzer** on its production lines to automatically detect gravel, blocks with out-of-specs sizes, and foreign objects, preventing blockages and unplanned machine downtime. Thanks to our advanced AI models, the company now has a **real-time inspection system that ensures operational continuity, reduces breakdown costs, and optimizes line safety.**

## 2. Installation

AI-Soil Analyzer system has been installed directly above the conveyor belt, at a point in the feed line where early detection minimizes the risk of blockages.

Using a **high-resolution industrial camera and proprietary trained AI models**, the solution inspects every fragment of material passing along the belt. When the system detects a non-compliant object, it **automatically sends a signal** to prevent jams, part breakages, or cascading shutdowns.

## 3. Objective

The main objective of this implementation is to deploy an autonomous line inspection and protection system that enables the company to:

- **Detect large stones or foreign objects** in real time.
- **Prevent blockages and breakages** in critical machinery.
- **Reduce unplanned downtime** and maintenance costs.
- **Increase operational safety** and incident traceability.
- **Improve the efficiency** and reliability of the production line.

## 4. Results

Our **AI platform** enables real-time, objective, and precise quality control of the analyzed components, with an **accuracy greater than 97%.**

AI-Soil Analyzer has allowed the client to increase the operational availability of the line and minimize incidents related to blockages caused by non-compliant material. Among the key results:

**A/** Communication with existing internal systems and generation of immediate alerts, preventing equipment damage.

**B/** Reduction of unplanned downtime and costs associated with corrective maintenance.

**C/** Scalable system adaptable to different production lines and capacities.

