



## SatrindTech Srl - Waste to energy: customised shredder for cement plant waste recovery in China's Jiangsu province

Dear Customer,



### Industrial shredder for baled fabric and clothing, empty standard 200 litre metal drums and IBCs with a frame

We are proud of bringing Italian technology to the world. The strength of our shredders, together with the meticulous planning that we put into custom-made projects, are a unique combination which is increasingly requested by companies specialised in processing and disposal of waste and industrial materials worldwide.

For SatrindTech there is nothing better than when our expertise and knowledge is required in cases where the shredding needs are more serious and pressing. In addition to our standard products, we can offer customised solutions for the most extreme shredding needs.

China's Jiangsu province is densely populated and is one of the country's economic engines. The work is the result of a collaboration with a local engineering company, which has assisted our specialists in the cement plant. The shredded material aids combustion in the furnace cycle of cement production using waste to energy logic.

Custom 3R 15/200 industrial shredding plant: an engineering work we are proud of for the waste to energy

What we have installed in China is a reasonably powered system designed for intensive use and compatible with different materials that make up large objects. The installation work was a real engineering challenge, but we are extremely satisfied with the result.

The heart of the system consists of an industrial 150 kW, 200 hp, three-shaft shredder model 3R 15/200. The shredder is equipped with 50 mm thick 5-1 hook blades and material selection grids with 100 mm holes.





The shredder operation is controlled by a **Siemens PLC management system**, which is the plant 's nervous system. The Programmable Logic Controller (PLC) has three different interfaces:

- Directly near the machine through a convenient **touch display** installed on the electrical panel.
- Remote: the PLC is connected with a long cable to a remote room - the Distributed Control System (DCS). Thanks to the **Profibus communication protocol**, the shredder can be operated from one of the site control rooms, eliminating the need for the constant presence of an operator close to the plant.
- Remote assistance: the PLC is connected to a **gateway module equipped with a SIM and UMTS antenna** that allows SatrindTech technicians to connect to the PLC software remotely. We can monitor the system's proper functioning, manage any anomalies and make periodic changes through upgrades and updates, without moving from our offices.

The plant is mounted on a **support stand** equipped with walkways connected to a large **primary hopper**. The hopper is divided into chambers separated by **automatic shutters** and connected to a secondary discharge hopper which can be closed by a shutter.

#### The plant's special features

The machine we installed in China shreds **baled fabric and clothing, empty standard 200 litre metal drums and IBCs with a frame**. Once shredded to minimise their volume, these waste materials are subjected to a controlled combustion process inside the cement plant to fuel combustion in the firing process in the cement mixture's furnace. This reduces costs and environmental impact, which is the central idea of the waste to energy principle.

Given the complexity and the entire system's significant size, it was necessary to prepare the configuration of the whole system to **simplify future maintenance operations as much as possible**. The shredder can be removed from its base using a **winch**. By releasing the grinding body from the overlying hopper, it can be slid on rails and be extracted so that the **blades can be sharpened** or replaced when needed. Given the plant's unusual nature and the construction complexity, a considerable part of the project included issuing technical manuals on the product specifications and operation.

This installation consists of a sophisticated **system of opening and sealed closing of shutters**. The plant treats hazardous waste. Each chamber opens and closes in an **automatic cycle with nitrogen insufflation**. This avoids the treated material encountering oxygen and prevents fires and explosions.

#### The best results were obtained thanks to customer partnership

An excellent installation and commissioning result was due to our successful partnership with our Chinese partner. SatrindTech supplied the shredding chamber which was the machine's heart, together with the related hydraulic power units and the electrical panel to control them, at a distance via cable, through the Profibus protocol and remote assistance mode. The SatrindTech team was responsible for all the engineering phases during the design and on-site stages, while our partner took care of the carpentry made locally, carefully following our instructions.

The installation of the custom 3R 15/200 industrial shredding plant in the Far East was not only a company technical and commercial success, but a project that we will happily remember in the years to come. If we only look at our result, we risk forgetting the best side of our work which was the **collaboration between experts of different backgrounds and cultures to achieve a common goal**.

SatrindTech's philosophy is not only to export shredders and technical solutions, but also an **innovative working style** that allows us to give our best regardless of the country and context in which we operate.

For any other request for free quotes of our industrial shredding solutions, please contact our Sales Department by writing to [sales@satrindtech.com](mailto:sales@satrindtech.com) or by calling the number +39 (02) 9037 6683.

**Our Sales Dept. is your disposal for any information.**

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