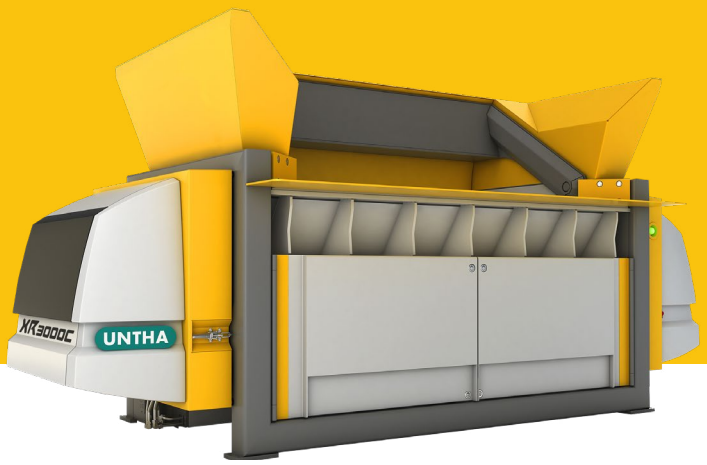
Footwear transformed into fuel in Vietnam



Global cement giant LafargeHolcim is actively pursuing a worldwide 'green manufacturing' strategy to reduce CO2 emissions, improve energy efficiency, reduce non-renewable fossil fuel use and lower the clinker factor in finished cement. The use of waste as an alternative fuel in Vietnam has fulfilled this brief entirely.

Overview

Company: LafargeHolcim
Shredder: UNTHA XR3000C
Input Material: Footwear production waste
Output / Goal: 95%<80mm SRF

Footwear production 'waste' is a prevalent material in Southeast Asia. However, comprising a mixture of tough materials – rubber, textiles, plastics, metals, sponge, reinforcements, and more – this waste is notoriously difficult to process.

An UNTHA XR3000C shredder has therefore been extensively configured, re-engineered and trialled to suit this demanding application. The cutting concept has been refined and two 113kW motors installed to provide sufficient, yet energy efficient, power. Designed for maximum efficiencies, the result is a single step shredding solution with only one machine, rather than a pre and post shredding operation.

Complete with discharge conveyor, over band magnet and control room, the entire plant was fully pre-fabricated and pre-assembled in Salzburg, for acceptance testing by the client, LafargeHolcim Vietnam, and its Swiss technical support group. A 95%<80mm SRF specification was exceeded, with 97% of materials consistently achieving the required particle size, consistently high calorific value (15-20GJ/t) and 10 tons per hour throughputs. The continuous rotor speed also proved the system's uptime robustness.

For heightened safety, the equipment was manufactured with an anti-explosive Atex-specification coating and intelligent in-built fire suppression technology. Carefully positioned UV, infrared, heat and spark detectors on the inlet hopper and conveyor can sense if a fire is likely to start. In the event of a significant temperature increase, extinguishing nozzles, positioned in the same place as the

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sensors, will automatically spray water onto the fire risk. If the risk is within the shredder, the materials can be cooled and/or the fire put out before anything is discharged from the machine. If the problem is on the conveyor, the nozzles prevent hot, glowing fractions from entering the pile of output material, where a fire could otherwise break out.

To make the 6214 mile journey to LafargeHolcim's Hon Chong plant in Vietnam's capital Ho Chi Minh City, all equipment was carefully packed for cost-effective sea freight shipping. Two 40ft containers held the shredder, conveyors, FE-separator and support frames, whilst a third 20ft container housed the control cabinet room. A special sea freight transport package was not required.

A carefully planned installation schedule meant a team of UNTHA technicians was on site in Vietnam when the equipment arrived. The installation began the next day, commissioning was underway only four days later, and 11 days thereafter, the final acceptance test took place.

Whilst simple to operate, by design, the XR was installed with full operator and maintenance training. Should LafargeHolcim's fuel specification change, the shredder's indexable cutters and interchangeable screens can be alternated to achieve an even more precise shred.

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