

Ashes Clean Up for Robot at H+H

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Getting down and dirty in the ashes is one process that personnel at H+H UK Limited, Goole, are pleased to leave to a new Kawasaki RS-80N industrial robot.

Manufacturing its market leading Aircrete Building Blocks from a mixture of Pulverised Fuel Ash (PFA) and mortar creates an aggressive environment for clean-up operations.

The operation requires the robot to remove all 'slurry' residue from a mould, 10 metre long by 2 metre wide by 600mm deep, before it proceeds back to the moulding operation where fresh slurry mix is poured

The operation requires oil to be sprayed to the sides of the mould as a release agent and also to help convert any residue to a mixable consistency.

Powered, rotating brushes are passed over the entire surface of the mould to agitate the residue and oil mix providing a clean and even coating over the surface.

Installed within a fully enclosed spray booth, the Kawasaki RS80N robot is mounted on a 12 metre linear axis which follows the length of the mould.

The robot has a selection of two different powered brushes, for the base and sides of the mould, which are automatically changed during the process.

A spray head mounted to the robot arm allows oil to be sprayed to the sides and base of the mould during the process.

David Lazenby, Systems Support Engineer, H+H, explains,

"The new robot is specified well within requirement as it has a payload capacity of 80Kg. The process can be completed in 3 minutes but the process demand allows it to operate at a comfortable 4.5 minutes.

During the robot installation the operation was carried out manually taking one man 10 minutes and two men 6 minutes."

The process is very aggressive with the mixture of oil spray and abrasive paste contained within the enclosure. David Lazenby explains that to maintain production the robot operates continuously without being cleaned, "The Kawasaki robot's design is ideal for this application; all motors are enclosed and the IP rating is IP67. It doesn't get cleaned unless we have another reason to attend to the robot, such as routine maintenance, which is a rare occurrence."

Operator and maintenance interface with the system has been improved with the addition of the Kawasaki E-Series robot controller which has allowed more flexible and easier programming. Sub-routine pages have now been created for every production and maintenance situation allowing straight-forward unplanned intervention and recovery for engineers and operators without programming skills.

In summary David Lazenby explains, "The new robot is more sophisticated than the previous robot and in particular allows more control options; however our system is relatively straight-forward and does exactly what we want without unnecessary complications being introduced. The fact it can just be left to do the job without clean-down is an important element reducing the requirement for needless downtime and additional maintenance operations."

