



Institute of Electrical and Electronics Engineers INDUSTRY APPLICATIONS SOCIETY

CEMENT INDUSTRY COMMITTEE
EAST COAST SUBCOMMITTEE



Title: WOMA Gun Best Practices

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Background/Problem:

The Martinsburg Cement plant utilizes a WOMA HP-750R Gun to clean the kiln. A WOMA Gun is a high pressure water sprayer that can exceed pressures of up to 750 bar. On November 5th, 2017, an employee had returned from break, to continue the process of cleaning the kiln using a WOMA Gun. The individual turned the gun on, and it slipped from his hands and got loose. The high pressure stream contacted his right thigh with about a 4-6 inch cut and he sustained several small puncture wounds on his inner left thigh, in which some fluid was injected into the leg.

Investigation:

The investigation revealed there were no engineering controls implemented to prevent the WOMA Gun from exiting the kiln during use. Although the individual wears a Kevlar suit to protect him/her from the heat that escapes the kiln, it does not protect against the high pressure stream of the WOMA Gun. Our research found that there is not really one set suit an individual can wear to fully protect him/her against a direct hit of the WOMA Gun. The best solution is to completely remove the possibility of coming in contact with the stream.

Solution:

The site created the WOMA Gun Restraint System; the system consists of a cable and retractable lanyard. The retractable lanyard is tethered to the kiln in as close proximity to the port / hole where the gun is to be inserted as possible. The retractable unit is to be attached directly to the gun via a cable. The WOMA Gun Restraint System protects the employee from the WOMA Gun kicking back out of the hole. This is an Engineering Control designed to protect the employee.

Photo / Diagram:



You can see how the lanyard is used to connect the WOMA Gun to the kiln, which in turn prevents the WOMA Gun from kicking back out of the Kiln.



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