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Chromate identification & quantification video

Breedon GB Materials > Hope Cement Works



Chromium VI deposit

DESCRIPTION

MPA Cement H&S committee shared research throughout Europe that found that increasing use of high-alloy steels in the clinker burning process has led to the formation of chromate on components and coatings in kiln installations.

In certain circumstances chromate can be highly toxic, hazardous to water, and in a small number of cases there have been possible links to cancers. Chromate takes the form of a greenish-yellow-solid however, it can take 1 to 2 days for this colouring to become visible, or it may not be visibly identifiable on account of external influences.

Once alerted to this issue, Breedon engaged with a specialist company, Socotec, to develop a programme to identify and monitor the presence of Chromium VI within the Hope works process. The process began with surface swab testing on internal surfaces during a major shutdown. The company used recognised analytical processes to establish whether there was any Chromium VI present within the plant. This process was then followed up with extensive personal and static dust monitoring to identify the levels of airborne Chromium VI during refractory and mechanical works.

The study revealed that Chromium VI was present in one location, on the vortex plates and, during refractory removal from the vortex ring. Chromium VI levels were recorded above the workplace exposure limit.

These results were used to develop a safe system of work in conjunction with contractor partners to ensure the health & safety of all parties. Air-fed helmets were purchased for the contractor controlling the machine that was used to remove the vortex plates during the shutdown.

The information was shared with members of the MPA Cement H&S committee.

BENEFITS

- A previously unknown H&S issue was identified and quantified
- Safe system of work developed to mitigate this risk
- Reinforced close collaboration between Breedon and contractors on key H&S issue.

TRANSFERABILITY AND DEVELOPMENT

- Since this issue was raised via the MPA H&S committee, Breedon have led the way with the identification and quantification of Chromium VI within the manufacturing process, sharing information and progress with all committee members
- The process has helped to foster further collaboration with Breedon's contractor partners in developing, communicating and implementing a new system of work for a number of key tasks where Chromium VI has been identified
- Although the issue is only related to the clinker manufacturing process, the information has been shared throughout the Group to raise awareness of the issue and the process that was followed to identify, quantify and then to mitigate the risk.

