

## BCCSA study helps contractors to develop lead exposure plans for ceramics

Following the conclusion of a BCCSA research program launched in 2023, contractors have more accurate guidance on creating exposure control plans (ECPs) for lead released in dust that's generated by cutting through ceramic tile glazes.

Contractors are required to create ECPs for all harmful substances they might encounter on the job site. However, there was no official guidance in BC on the level of risk of exposure to lead used in glazes from ceramic tiles. As a result, members of the BCCSA's Fire Flood & Restoration Program Technical Advisory Committee sought further clarity on the best practices for controlling exposure to lead.

*"The lead poses little hazard if the glaze remains undisturbed, but dust containing lead can be released when tiles are cut, chipped or disturbed,"* says Melanie Gorman Ng, Health and Exposure Scientist with the BCCSA, who led the research program. *"However, the methods used to analyze lead in paint were not suitable for ceramics. At the same time, chemical testing for lead in ceramic glazes has proved challenging, because ceramic tile material is difficult to dissolve."*

The research evaluated the most relevant and cost-efficient method to quantify health risks posed by exposure to ceramic tile dust. Under the study, workers wore personal air sampling devices as field researchers collected bulk samples of ceramic tiles. The air samples were later matched to lead found in the bulk samples.

The study concluded that the best-performing method for detecting lead in bulk ceramic tile samples involved fusion pellet digestion — which dissolves geological materials — followed by analysis using EPA 200.7 — which uses spectrometry to identify metals and trace elements. However, no method worked reliably to detect lead in air filter samples that contained ceramic tile dust.

*"I think that it would be appropriate to send out bulk ceramic tile samples for testing using this method to see if lead is present,"* Gorman Ng says. *"If this is not feasible then it would be wise to assume that all tile glazes contain lead and use appropriate exposure control strategies."*

The BCCSA would like to thank the 32 workers and their employers who participated in the study.