HOSKINS-ABSTRACT

Current use and health significance of the modern use of chrysotile products: review of recently published evidence.

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Abstract

Exposure to high levels of asbestos fibres, particularly the amphibole types, has been known to be dangerous for a long time and concern about this has unfortunately been extended to concern about the safety of asbestos containing materials (ACM) in buildings. The near global ban of amphibole asbestos has removed most of the concerns and chrysotile alone continues to be used throughout much of the world. Of all the world production of chrysotile some 90% is currently used in asbestos-cement products such as pipes, plates, sheets, mouldings and shingles. Many earlier uses for chrysotile where the product could not be guaranteed to be employed safely have been stopped, usually through substitution. The best example of this is sprayed insulation used for several purposes including building insulation and fire-proofing the iron frames of large buildings.

Health effects in people from exposure to chrysotile are only known through exposure to very high fibre levels. No effects are noted in people exposed to chrysotile at low fibre levels. There is a large cohort of people around the world who live in areas where chrysotile is mined who are daily exposed to air levels that can be around 1 f/ml without ill effect, a level greater than many current permitted occupational levels. With regard to the products, it has been known for a long time that asbestos-cement products are dense and do not readily release fibres. The highest fibre levels found when working with modern chrysotile products occur during manufacture and construction or during demolition. Some cement products can even be re-cycled by crushing and conversion into construction blocks. This process, interestingly, liberates so few fibres that minimal precautions need to be taken during operation. Recent work has shown why cement products present few risks at any stage of their life-cycle. Firstly the cement matrix sticks to the chrysotile fibres so reducing potential respirability of dust by increasing their size and mass and also chemical changes occur in the cementous fibres which appear to reduce further their low toxicity.