

Asbestos Emission Caused by Demolition of Buildings after the Great Hanshin-Awaji Earthquake

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Abstract

After The Great Hanshin-Awaji Earthquake that occurred in Japan in 1995, ambient asbestos concentration increased widely over the stricken zone. To determine the relationship between this concentration increase and asbestos emitted from buildings, we performed measurements and researched the emission of asbestos that occurs when toppled buildings are demolished, then employed a diffusion model to examine the effects on the concentration increase. First we determined the use of sprayed-on asbestos in buildings of the earthquake zone. We also investigated asbestos emission on sites where sprayed-on asbestos was used. Then we found that demolition without pre-removal caused the most concern about asbestos emissions and impacts on surrounding areas. Finally, based on the estimated amounts of asbestos emission in the earthquake area, we employed the plume-puff model to calculate the contribution of emissions to the increased asbestos concentration at actual sampling points for monitoring. Results showed a weak positive correlation between calculated values for asbestos concentration rise and actually measured values.