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Abstract

Caissons are widely used in foundation preparation in Hong Kong. Typically these caissons are 1 to 4 meters in diameter and 10 to 30 meters in depth. Because of the hilly terrain, manual digging is the preferred method and furthermore, because of the geology, granite is usually encountered and has to be removed by pneumatic drills. This creates a great deal of silica containing dust in a confined space and is extremely hazardous to the drill operators. As high as 2000 times TLV have been measured in previous studies and some drill operators contracted silicosis within one year.

An *in situ* dust removal system, using wet scrubbing and ventilation methods, was designed, fabricated and field tested and proved to be effective in removing up to 98% of the dust generated in an 1-m diameter caisson.

Key words: Caisson, silicosis, dust removal, wet scrubbing.

