

LCQ9: Asbestos cement pipes

Following is a question by the Hon Lam San-keung and a written reply by the Secretary for Development, Ms Bernadette Linn, in the Legislative Council today (May 21):

Question:

According to government information, the use of asbestos cement pipes in Hong Kong has been discontinued since January 1986, but such pipes still exist in the existing water supply systems. In this connection, will the Government inform this Council:

- (1) of the length of asbestos cement pipes in Hong Kong's water supply systems at present and the districts in which such pipes are mainly located;
- (2) given the potential danger of asbestos to human health, whether the authorities will consider giving priority to replacing the existing asbestos cement pipes; if so, of their plans; if not, the reasons for that; and
- (3) as it is learnt that the authorities need to carry out works involving asbestos-containing materials in a safe manner pursuant to the law, whether the authorities engage outsourced contractors to handle works involving asbestos cement pipes; of the costs incurred by the Government in handling works involving asbestos cement pipes in the past three years?

Reply:

President,

When designing the water supply network, the Water Supplies Department (WSD) would use various types of pipe materials according to the needs at the material time. Among them, asbestos cement (AC) pipes has been widely used in Hong Kong and other countries in the past because they could withstand greater internal water pressure and have good heat resistance and chemical corrosion resistance. Asbestos containing materials pose no health risk as long as they remain intact and undisturbed. The WSD later found that pipes made of this materials were relatively more brittle when serving as external wall and were more likely to burst or leak when impacted by external forces (such as arising from nearby road excavation works). Therefore, the WSD has discontinued to use AC pipes in pipe laying and maintenance since January 1986, and progressively replaced them with more durable ductile iron pipes or steel pipes under the relevant water main improvement programmes or during repairing works for water main burst incidents, with a view to reducing the risk of water main bursts or leaks.

The replies to various parts of the Hon Lam's question are as follows:

- (1) As of now, there are about 130 kilometres long AC pipes still in service,

accounting for about 1.5 per cent of Hong Kong's 8 500 km long water supply network. They are distributed in different districts in Hong Kong as follows:

District	Length of AC pipe (km) (approximate)
Central and Western	11
Eastern	7
Islands	3
Southern	7
Wan Chai	6
Kowloon City	7
Kwun Tong	6
Sham Shui Po	4
Wong Tai Sin	4
Yau Tsim Mong	4
North	3
Sai Kung	14
Sha Tin	11
Tai Po	2
Kwai Tsing	13
Tuen Mun	10

Tsuen Wan	6
Yuen Long	12
Total	130

(2) According to the Health Information about Asbestos published by the Centre for Health Protection of the Department of Health, asbestos fibres are generally bound into the base material matrix. Under normal circumstances, only extremely small quantity of asbestos fibres, if any, can be released.

The use of asbestos-containing cement pipes has been more common in earlier decades. The World Health Organization (WHO) reported in 2021 that there was no evidence to support that ingesting asbestos in drinking water poses potential risk to human health. Therefore, the WHO has not established a guideline value for asbestos fibres in drinking water, and considers such standards to be neither appropriate nor necessary.

The WSD is implementing a risk-based asset management programme for water mains by introducing factors such as age of use, materials, past records of bursts or leaks, surrounding environment, consequences of bursts or leaks, for assessing the risk of water main bursts or leaks so as to accord priority to improving specific sections of water mains with higher risk, including replacement or rehabilitation of them, with a view to reducing the risk of water main bursts or leaks for the water supply network overall. As mentioned above, since AC pipes are relatively brittle and more likely to burst or leak when impacted by external forces, the WSD has increased the risk weighting factor for AC pipes in order to speed up the replacement or rehabilitation of these water mains, aiming to reducing the risk of water main bursts and the impact on the community. The above improvement measures are based on considering the risk of pipe bursting rather than health or drinking water safety risks posed by AC pipes.

Those AC pipes currently assessed as higher-risk are mainly located on busy traffic routes. To expedite the replacement of ageing water mains, including AC pipes, the WSD has set up an inter-departmental task force headed by the Director of Water Supplies and composed of representatives from departments including the Development Bureau, the Transport Department, the Highways Department, the Hong Kong Police Force, the Environmental Protection Department, the Home Affairs Department, etc, to discuss and formulate temporary traffic arrangements and implementation programme for the replacement of water mains, so as to formulate plans as early as possible to minimise the impacts of the projects on traffic and the public.

(3) The handling, removal, transportation and disposal of AC pipes in the water supply network are regulated under relevant ordinances, including the Factories and Industrial Undertakings Ordinance (Cap. 59) and the Air Pollution Control Ordinance (Cap. 311), to safeguard the occupational safety and health of workers engaged in asbestos-related works. The WSD mandates through works contract provisions that contractors must fully comply with all

asbestos-related legislation and codes of practice, ensuring the AC pipes are safely handled, removed, transported, and disposed of in accordance with statutory requirements. All contractors and their workers must comply with the requirements of the relevant ordinances and the safety and health codes of practice and practical guidelines issued by the Labour Department when carrying out the works related to asbestos. This includes requiring the contractors to adopt control measures and provide personal protective equipment at the workplace, and employing competent persons to supervise the effective implementation of these measures.

During the implementation of the above works, the WSD will monitor the contractor's construction procedures to ensure that the relevant ordinances and codes in carrying out AC pipe works are followed.

Over the past three years, the project cost of the WSD in handling AC pipes (including the costs of handling, removal, transportation and disposal, etc) was about \$31.7 million per year on average.