



Asbestos Cement Water Mains - Frequently Asked Questions

When were asbestos cement (AC) water mains installed in Saskatoon?

Most of the asbestos cement pipes were installed between the 1950s and 1970s; however, not all water mains installed during that time were AC. Cast iron water mains were still being installed as well.

How many kilometres (km) of AC water mains does Saskatoon have?

There are 345 km of AC distribution mains, which is about 30% of Saskatoon's entire inventory. There's an additional 6 km of primary water mains that are AC. Primary water mains move water from the Water Treatment Plant to neighbourhoods. Homes are then serviced by the distribution mains.

Do other cities test for asbestos in water?

Regina and Edmonton are the two cities that test drinking water samples for asbestos fibres of the 13 in western Canada reported to have AC water lines. Both Regina and Edmonton sites tested below the detection limit. See the charts on the next page.

Asbestos-cement water mains in Western Canada: High percentage

City	Asbestos-cement water mains: KMs	Total water mains: KMs	Asbestos-cement water mains: percentage
Regina*	600 km	1,000 km	60 %
Swift Current	152 km	209 km	72.73 %
Weyburn	59.1 km	78 km	75.77 %

Asbestos-cement water mains in Western Canada: Middle percentage

City	Asbestos-cement water mains: KMs	Total water mains: KMs	Asbestos-cement water mains: percentage
Edmonton*	1,050 km	4,200 km	25 %
Winnipeg	721 km	2,840 km	25.39 %
Saskatoon	352 km	1,176 km	29.93 %
Lethbridge	190.2 km	634 km	30 %
Medicine Hat	138 km	420 km	32.86 %
Moose Jaw	98.5 km	229.07 km	43 %
Prince Albert	101.2 km	219.19 km	46.17 %

Asbestos-cement water mains in Western Canada: Low percentage

City	Asbestos-cement water mains: KMs	Total water mains: KMs	Asbestos-cement water mains: percentage
Calgary	66.623 km	5,309.22 km	1.25 %
Brandon	8.4 km	293 km	2.87 %
Red Deer	64 km	636 km	10.1 %

*Tests for asbestos fibers in water samples

Can we test for asbestos with our current equipment?

The method for testing for asbestos in drinking water utilizes Transmission Electron Microscopy. Neither of the two City testing labs (Water Lab – WTP or the Environmental Lab -WWTP) own this piece of equipment. Testing competence would require this instrumentation, facility space, personnel, and considerable time to achieve. With these factors in mind, the cost to achieve in-house testing becomes cost-prohibitive and a sub-contract laboratory would be recommended.

Sub-lab testing is available with a few caveats:

- Asbestos testing in drinking water is not performed in Canada by our available sub-contract laboratories. Samples must be shipped to the United States for testing. Additionally, the sample must be received by the testing lab within 48 hours of collecting, so timely shipment can be a challenge. The cost is approximately five to ten times higher than most of our subcontracted tests, but less than a handful of other subcontracted tests.

If testing was requested, it would make the most sense to utilize a subcontract lab as in-house testing would be cost-prohibitive.

Do commercially bought filters effectively remove asbestos from water?

There are some filters on the market which are certified by NSF for the *reduction* of asbestos fibres in water. Each filter has its own statement regarding performance and would need to be individually researched.

What would it cost to replace all AC pipes in Saskatoon?

In 2022, it cost \$15.3 million to replace 6.6 km of water mains, so at 2022 rates, replacing 345 km of AC water mains would cost approximately \$800 million.

None of the water main replacements in 2022 were AC pipes. Traditionally, we do very little AC water main replacement as we typically do not have water main break issues with these pipes.

How many kilometres of Saskatoon’s water mains and pipes are not built with asbestos cement? What material(s) are they built with?

Water Distribution System	
Asbestos Cement (km) =	352 (30%)
Metallic (km) =	250 (21%)
Plastic (km) =	539 (46%)
Concrete (km) =	34 (3%)
Other (km) =	1 (0%)
Total (km) =	1,176

Additional Information

Additional Information on Cancer rates:

[Profiling Cancer in Regional Health Authorities \(2017\)](#)

[Summary of projected number of cancer cases and deaths in SK in 2021](#)

[Canadian Cancer Statistics: a 2022 special report on cancer prevalence](#)

[CTV story on Cancer prevalence SK has the 8th lowest rates of Cancer among 12 provinces and territories \(QC not included\)](#) Nov 9, 2022

Breaks between 2016 and 2020:

- 2020 – 193
- 2019 – 247
- 2018 – 289
- 2017 – 285
- 2016 – 183

Total = 1,197

Breaks on AC mains between 2016 and 2020:

- 2020 – 8 (up to Aug 2020. This is most recent update of break material list)
- 2019 – 34
- 2018 – 26
- 2017 – 28
- 2016 – 11

Total = 107

Water mains are selected for replacement based on break history, with priority given to water mains with more recent breaks and factors such as road type, number of customers served, and customer type such as school or business users.

Additionally for all other breaks where AC pipe are installed, they are generally on the cast iron fittings like tees, crosses, valves, hydrants, elbows, reducers, couplers, etc. as well as cast iron pipe, as these fittings have cast iron pipe on either side to where they couple with the AC pipe.