
CITY OF THOMPSON (MANITOBA)

Pre-insulated Water Service Line

Project Profile



Manitoba Mining Town Leads Canada Into New Era of Water Main Technology

A small mining town located in northern Manitoba called Thompson may not be your first guess for a Canadian city that would pioneer the use of a cutting-edge technology for its water supply infrastructure. Thompson's water and wastewater utility manager Santokh Randhawa would understand.

Thompson became the first city in Canada to use REHAU MUNICIPEX Pre-insulated crosslinked polyethylene (PEXa) water-service pipe when it installed about 3,700 ft (1,127 m) in September 2015 as part of an ongoing water main renewal project. The new pipe will serve a trailer park community in the city. More MUNICIPEX Pre-insulated pipe will be installed in 2016 and subsequent years. In fact, Randhawa says, MUNICIPEX water service line will be the only type of pipe the city uses going forward, as it replaces old copper service lines that are worn and breaking, due in large part to the region's harsh winter conditions.

Thompson's long, cold winters make the city an ideal candidate for MUNICIPEX Pre-insulated. The average high temperature doesn't rise above 0°C (32°F) – between November and early April.

Kirby Martinussen is president of the company that installed the water main, Eric's Plumbing in Thompson. Martinussen said the ground routinely freezes to a depth of 8 ft (2.5 m) every winter (compared to 5 ft [1.5 m] near the U.S.-Canadian border).

MUNICIPEX Pre-insulated water-service pipe is designed for water distribution in extreme cold climates that require an extra level of protection from freezing, or when laying pipe below the frost line is not possible. It consists of REHAU MUNICIPEX carrier pipe surrounded by a solid layer of CFC-free polyurethane foam insulation and a corrugated LDPE outer jacket. The outer casing "locks" firmly into the backfill while the insulation is bonded to both the casing and the MUNICIPEX carrier pipe, increasing the durability and flexibility. The carrier pipes, offered in 1 and 2 in. diameters copper tube size (CTS), connect easily to standard industry brass curb and main stops with the use of a stainless steel insert and are available with an integrated conduit to accommodate heat-trace cables.

"We have so many problems with frost heaves and ground movement from frost on our pipes that the old copper service lines are susceptible to breaking. MUNICIPEX pipe absorbs a lot of movement from the ground without breaking, and the testing that has been done shows that it is far more durable than anything we've used before," Martinussen says.

He adds that installing MUNICIPEX Pre-insulated is significantly easier than installing the traditional 50 ft (15.2 m) lengths of copper pipe. The insulated pipe is available in continuous coils of 300 ft (94 m), reducing the number of joints needed for the pipeline, as well as the cost and time associated with installation. Fewer joints mean fewer locations that are susceptible to leaks and breaks due to this seasonal shifting. Martinussen notes the pipe's flexibility is ideal for economically and ecologically advantageous horizontal directional drilling.

"When you are in a tight area, you can't get enough flex on the standard 50-ft copper pipes to make a proper pull. You end up pulling the joints apart and it's a real pain. MUNICIPEX Pre-insulated is one piece and there are no joints to pull apart. It coils off the roll and into your hole and away you go. It's beautiful that way."



Project: City of Thompson, Manitoba, water main renewal

Type of Construction: Renewal of city infrastructure

Scope of Project: 3,700 ft (1,127 m) of pipe

Primary Contractor: Smook's Contracting

Installer: Eric's Plumbing

REHAU Systems Used: MUNICIPEX® Pre-insulated water service pipe