

# Building Pipe Dreams for Toronto City Airport

**ROYAL**<sup>®</sup>  
Building Products

CONTRACTOR: **Valentine Underground Services Ltd.**  
**PCL Constructors Canada Inc (Mississauga, ON)**  
**ARUP Engineering Consultants (Toronto, ON)**

PRODUCT: **Royal Seal™ Gasketed Sewer Pipe, Royal IPS Series Pressure Pipe, Royal Seal™ CIOD Pressure Pipe and Fittings**

**ROYAL**<sup>®</sup>  
Municipal Solutions

## About Royal Municipal Products Royal Seal™ Sewer Pipe and Fittings

(SDR35) is an extremely durable pipe with a leak proof joint featuring our specially designed Double Seal Locked-In (DSLITM) gasket.

**Royal IPS Series Pressure Pipe and fittings** can service many types of water systems. It is manufactured with Iron Pipe Size (IPS) diameters and available with either solvent weld ends or factory-installed Double Seal Locked-In (DSLITM) gaskets in the bells. **Royal Seal™ CIOD Pressure Pipe and Fittings** are used in potable water systems eliminating the risk of clean water being contaminated during transmission to the end user. Easy to install, corrosion proof, smooth interior walls and can withstand long-term hydrostatic pressure.

## About Valentine Underground Services Ltd.

Valentine Underground Services Ltd. (VUS) was established in 1988, and after more than 23 years is still considered to be one of Southern Ontario's premier site servicing contractors. Allan W. Jones, President and Co-founder has been working in the sewer and watermain business in the GTA area since 1975, and continues to manage the day-to-day operations of Valentine Underground Services Ltd. Valentine Underground Services Ltd. specializes in commercial, industrial, residential as well as road improvement projects; [www.valentineunderground.com](http://www.valentineunderground.com)



Billy Bishop Toronto City Airport has undergone significant expansion in recent years. Located on Toronto Island, the Toronto Port Authority, with the help of the PCL Constructors Canada Inc Design Team, are building a pedestrian tunnel between the terminal situated on the mainland and the airport gates on the island to ease congestion on either side of the ferry journey.

The tunnel project began in 2011, with a completion deadline of 2014. An integral part of the initial stage was redoing the underground infrastructure at the terminal and Island Airport. The pipe and fitting portion of the land-based construction was performed by Milton, Ontario-based Valentine Underground Services Ltd., who opted for municipal pipe and fittings by Royal through Crowle Fittings and Supply Ltd.

## The Right Stuff

The scope of Valentine's work involved relocating the existing system's sanitary force main, and sanitary sewers and wa-

ter mains on both ends up to the tunnel excavation point. "There were four or five different systems at each end serving multiple purposes that were built in the 60s and 70s," explains Valentine president Allan Jones. As part of the construction phases, portions of the sanitary pumping station had to be rerouted on a temporary basis.

The first step however was convincing the project leads to go with PVC piping instead of the polyethylene pipes outlined in the City of Toronto specifications.

The reasons for PVC were twofold, Jones says: time and money. "Polyethylene is great if you have long straight runs that don't require numerous, custom fittings to make the pipe work," he explains. "If you don't have that it becomes extremely expensive. PVC pipe made much more sense because it's more flexible, faster to install and easier to work with when doing short lengths. It's much more user-friendly, and the quality of the end product is the same."



PVC piping translates into lower per meter cost, largely because of the connection requirements, he adds. “The big cost with polyethylene is when you have to make a bend, because you can’t cut the pipe and restrain a mechanical joint fitting on it like you can with PVC. Rather you have to butt-fuse the pipes at the fitting. Because you have to be so exact, it’s very time consuming which translates into more time and labour. I’d say PVC translated into half the installation time.”

### The Time and Space Factor

Time was definitely something this project did not allow. The airport was conducting business as usual during construction and contractors were tasked with keeping to extremely tight and aggressive timelines in order to meet the drilling schedules, Jones says.

“The team pretty much had to work all day and night to get this done, and we had to work in areas where passengers were coming and going, which meant we had very little space to work in. So it was essential that we had an adapt-

able pipe system that could be installed quickly and easily.”

The infrastructure work required a total of 700 meters of piping from 75 mm to 400 mm, including SDR35 sanitary pipe, DR21/DR26 foremain pipe and a C100 DR 18 water main pipe that will serve as the feeder main to the island when the tunnel is done. The initial stage was carried out on the mainland side, where Valentine was allowed two months to complete work before the drilling was to begin. The team then moved over to the island side.

The location however created some unique challenges, Jones notes. “Because we were so close to shore there was a significant amount of dewatering involved and the soil was very sandy. It definitely made the job interesting. Obviously we needed a pipe and fitting system that would allow us to move quickly. If we had used another kind of pipe it would have been terrible.”

He adds that he has worked with PVC products from Royal Building Prod-

ucts® (Royal) on many sites in the GTA. “We pride ourselves on being able to go through the ground without breaking anything. Working with these products also makes us fast and efficient when it comes to projects where time and space are critical.”

Jones says choosing Royal is an easy one for him. In fact he has worked with the product since the 1970s. “Not only is the product great, they’re a local manufacturer which is important.”



### About Royal Building Products®

Royal Building Products, is a division of Axiall Corporation (NYSE: AXLL). The company manufactures and distributes leading materials for the home remodeling, building and municipal construction markets. For over 40 years, the company’s commitment to quality, innovation and customer relationships has attracted the loyalty of a growing number of building professionals, homeowners, architects, engineers and distributors to its products. With operations throughout North America, Royal Building Products offers the renovation, remodeling and new construction industries a broad range of innovative products including siding, trim, accessories, soffit, rain ware, mouldings, deck, window profiles and patio doors. Royal Building Products also manufactures pipe and fittings for the electrical, municipal, irrigation, plumbing and industrial construction industries. For more information, please visit our website [www.royalbuildingproducts.com](http://www.royalbuildingproducts.com).