

SIEMENS



SITRANS LR560

## High-performance radar for innovative green aggregate



Jam jars, baby food containers, beer and wine bottles – we typically think of these as being recycled into other glass products.

But what happens with colored glass that can't be recycled, or pieces that have become too fine to use in new glass products? What if that beer bottle eventually became part of that tile adhesive you're using in your bathroom renovation? For the past quarter century, Dennert Poraver GmbH, known in Canada as Poraver North America, has been doing just that.

A lightweight but extremely strong aggregate, Poraver® is generated from post-consumer glass that is no longer usable for the production of new glass or bottles. It is an ideal additive for a number of construction

materials, and is used in plasters and renders, adhesive and reinforcement mortar, fillings, lightweight concrete, plastic applications, and a variety of other applications.

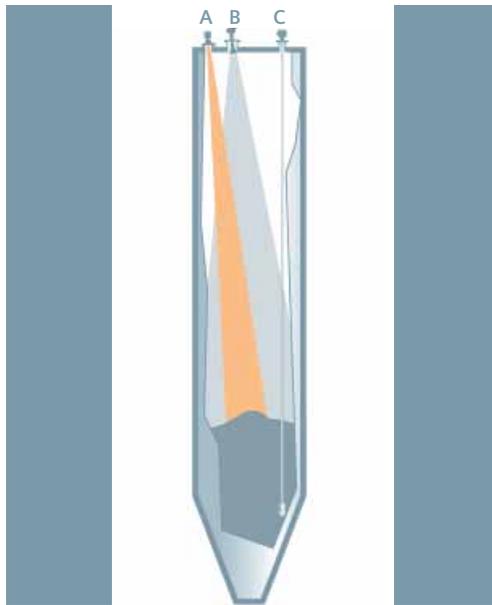
Located in Innisfill, Ontario, an hour north of Toronto, Canada, Poraver North America produces Poraver® granules in sizes from 0.04 – 16 mm (0.0015 – 0.6").

A green product, Poraver® is 100% recyclable. It is actually the only lightweight mineral aggregate not requiring raw materials from open-cast mining, as it uses glass that would otherwise end up in landfills. Its light weight reduces CO<sub>2</sub> emissions and shipping costs by up to 33%, since trucks can carry more Poraver® per trip than they would traditional aggregate

[siemens.com/sitransLR560](https://www.siemens.com/sitransLR560)



Poraver North America produces this unique, light-weight aggregate in a variety of sizes, all made from post-consumer glass.



With its narrow 4° beam, SITRANS LR560 (A) can measure material even in a silo's cone area, unlike radar transmitters with wider beams (B). It also does not experience the maintenance issues of contacting technologies (C).



The company is pleased with SITRANS LR560's high performance and the decreased amount of time spent climbing tall silos for maintenance.

materials. Poraver® also reduces maintenance costs for its users: since the glass balls are less abrasive than materials such as sand, they do not cause as much wear and tear on manufacturing equipment.

### Challenge

Poraver first crushes glass into a fine powder. Chemical binding and expanding agents are then added along with water to produce a slurry.

The slurry is then aggregated or atomized into spherical balls that are heated to 900 °C (1652 °F) in kilns to expand them and to remove excess moisture. The final product is sieved into different size ranges and then stored in silos, ready to be shipped by trucks, in totes, or in bags.

From the raw materials to finished product, there is a lot of dust present. Add to this the abrasiveness of the raw materials and you have a challenge for most level measurement technologies.

In the past, the company has tried a number of different level measurement technologies on their raw material silos and on those containing finished product.

The result? Plumb-bobs required a great deal of maintenance, as materials bind on the cable or the rotating pulley and can cause a failure. The extremely abrasive nature of the raw materials wears out the cables of these contacting

technologies and can lead to cables or weights falling into the silo, a very costly event.

The exceedingly dusty conditions in the Poraver® production process pose a challenge for non-contacting level devices as well. Poraver had some limited success with lower frequency radar, but this technology's wider beam did not provide operators with the accuracy they required. Many of these devices are somewhat challenging to set up and need fine-tuning to ensure correct operation.

### Solution

The answer came in the form of Siemens' easy-to-install, high frequency SITRANS LR560 radar level transmitter for solids. Poraver North America installed one transmitter on its finished product silo, and the device immediately provided accurate level reading. This transmitter has continued to perform flawlessly without any maintenance, even without using the built-in air purge feature.

On the company's kaolin clay additive silo, operators installed a second SITRANS LR560, this time using the air purge because of past experience with severe buildup on other sensors tested.

Poraver was pleased that Siemens' newest level transmitter for solids includes the air purge as a standard feature. An air supply was fitted to the top of the SITRANS LR560's



SITRANS LR560 is a perfect fit on two of Poraver's raw material and finished product silos, and will be installed on more silos in the future.



Poraver North America ships its lightweight glass granulate worldwide to be used in nearly every area of the construction and construction chemical industry.

flange. Air is channeled through the antenna, which keeps the antenna lens clean.

## Benefits

SITRANS LR560's narrow 4-degree beam provides consistently accurate measurement of material in the entire silo, all the way into the cone area. The 78 GHz frequency ensures that the steep angle of repose created by the finished product is no problem when measuring the level of materials.

Setup and programming of both transmitters was simple, and operators only needed to use the Quick Start Wizard on the SITRANS LR560's Local Display Interface (LDI).

Operators can view the level readings right on their control system's monitor and have never needed to climb to the top of silos for maintenance. These transmitters have eliminated high maintenance costs, as they have not experienced any problems or required any cleaning or other upkeep.

"These radar transmitters are working perfectly," says Richard Banaszak, Head Electrician at Poraver North America. "In the future we will continue to replace our current level transmitters with the SITRANS LR560."

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