

Belt turnover system improves safety at Montreal quarry

By Robert L. Consedine, Editor

A European-designed conveyor belt turnover device is helping a Montreal quarry significantly reduce maintenance costs while providing a safer work environment for its employees.

Lafarge Canada Inc.'s Montreal East quarry is using the non-mechanical system on three of its conveyors to virtually eliminate carryback spillage under the return idlers.

Designed and manufactured in France by S.A.R.L. R. Brunone and marketed through its Montreal-based Canadian subsidiary, R. Brunone Canada Inc., the patented SPAR 3 system features a unique U-shaped polymer guide that reverses the belt to keep the dirt-laden side of the belt facing upwards on its return journey. Other benefits include increased equipment service life for rollers and belts due to the cleaner operating conditions. Improved traction and tracking of the belt on the drive pulley is also improved because the driving side of the belt is protected from rain and wet materials. According to the manufacturer, a SPAR 3 belt turning device for a 610 mm to 1220 mm (24-in to 48-in) wide conveyor can be installed and operational in less than a day for under \$5000.00. The minimum length of the conveyor for the system to function properly is 36.6 m. The device can be fitted to most standard conveyors without any special modifications. Since it was introduced in the early 1990s, nearly 4000 of the SPAR 3 devices have been installed in aggregate operations throughout Europe.

The Montreal East quarry became the first Canadian operation to install a SPAR 3



View of the belt turnover system installed on conveyor C-7 at Lafarge Canada's Montreal East quarry. The system has eliminated carryback spillage under the return idlers.

device when Benoit Levesque, production supervisor for Lafarge Canada's 14 quarries in southern Quebec, imported the technology for the 1220 mm x 335 m long primary crusher field conveyor (C-7) in April 2003. The second device was installed in November 2003 on conveyor C-8, a 1220 mm x 396 m long field belt used to transport primary products from C-7 to the 30 000-tonne live surge pile. The third Spar 3 device was installed in June 2004 on C-10, a 1220 mm x 152 m long belt located in the reclaim tunnel under the surge pile. The length of the tunnel conveyor was extended in order to locate the tail pulley outside the tunnel entrance for safer clean up.

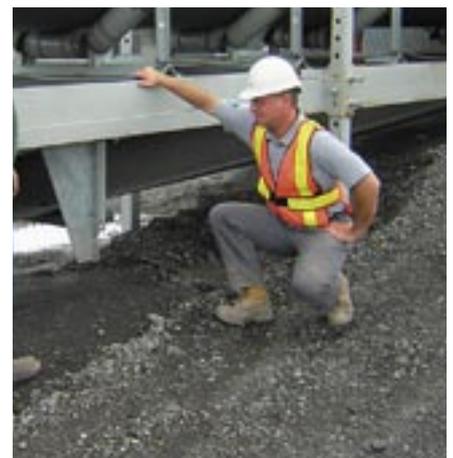
According to Montreal East quarry

manager, Michel Veronneau, the devices have worked continuously without any mechanical or operational problems at the 1 million tonne/y limestone operation. While the return on the investment in the SPAR 3 devices has been excellent, he points out the real payback for the belt turnover devices is best measured in terms of safety. For example, he says the latest device in the reclaim tunnel has removed the need for a worker to enter the tunnel daily for at least 30 minutes to clean up spills. "Putting a worker in this confined area every day was an accident waiting to happen," he states.

Veronneau told *Aggregates & Roadbuilding Magazine* during a recent site visit that the quarry used to spend roughly five hours per shift to clean up carryback spillage



The SPAR 3 polymer guide smoothly flips the belt so that the driving side remains clean and dry.



Lafarge Canada's Benoit Levesque checks out the SPAR 3 system installed on the surge pile tunnel conveyor.



Montreal East quarry manager Michel Veronneau with Pierre St-Amant, technical service representative with R. Brunone Canada Inc.



Transpar dust collector installed at the secondary crushing stage of the Montreal East quarry.

between the head and tail pulleys of the two field conveyors and in the reclaim tunnel. Not only was this time consuming and dangerous work for the ground personnel, it also caused production delays whenever the small excavator used in the clean up would hit a conveyor and misalign the belt. Now, the clean up is concentrated mostly to the area around the tail pulleys on the two long field conveyors and is accomplished by a single worker a matter of minutes. The Montreal East quarry operates 16 hours a day from April to late November or early Decem-

ber, depending on the weather. It is the only active quarry on the Island of Montreal.

The SPAR 3 belt turnover system is one of a range of SPAR (Safety Protection Around Rollers) products manufactured by S.A.R.L. R. Brunone for belt conveyor safety and dust control. In addition to the SPAR 3 belt turnover device, the Montreal East quarry has installed a number of these products including SPAR 1 that provides closed protection of idlers to prevent a worker's hand from jamming between the belt and the idler. Another Brunone product

installed at the same time as the first Spar 3 in April 2003 was a dust control system called Transpar that prevents airborne particles from escaping around a transfer point. Two Transpar units have been ordered by Benoit Levesque for spring installation at Lafarge Canada's St. Constant quarry south of Montreal while two SPAR 3 belt turnover devices will also be installed this spring at the company's St. Gabriel quarry, 100 km northeast of Montreal.

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