

STM: Italian expertise used to handle bulk materials



The Italian company STM specializes in the engineering and supply of belt conveyor systems for bulk materials handling facilities. Since 1975, when it was set up as a family business, STM has provided worldwide innovative integrated solutions to increase efficiency, reliability and cost savings for the customers production process.

STM offers its customers a full range of project services: engineering, fabrication, commissioning and carries out every step by developing flexible, individual and effective solutions. Therefore, STM succeeds in creating equipment of any size and complexity, which fully meets its customers' needs.

The whole supply process, from feasibility studies to final delivery and commissioning, is completely implemented in STM's factory, which is located at the company's headquarters in Tito Scalo (Potenza).

Thanks to an efficient and breakthrough Engineering Department, it is possible to optimize the design, the industrialization time and the information exchange with the clients. In-house engineers and designers use cutting-edge tools and advanced designing and calculation software. Moreover the competencies of the employers are continually enhanced so they are able to develop complete projects from general lay-out proposals up to shop-

drawings, with all necessary calculations to satisfy any requests.

Over the years STM gained a deep knowledge and expertise operating in many fields, with specific and innovative solutions for each applications: mining conveyors, RCC conveyors, tunnelling conveyors, crushing plants conveyors, batching plant conveyors and waste to energy plant conveyors.

THE OPPORTUNITIES PRESENTED BY THE BULK TERMINAL MARKET

STM is aware of the huge opportunities that have resulted from the requirement to develop new bulk terminals or to upgrade existing terminals in terms of increased

Doppelmayr builds ropeway for material transport in Colombia

In North-western Colombia, approximately 72km from the city of Medellín, CGL Sucursal Colombia, a subsidiary of the Canadian mining company Continental Gold, Inc. is developing the gold ore deposit Buriticá. The logistics of the project has to overcome some challenges in this very mountainous region. A ropeway will be installed to transport tailings from the valley floor to the paste backfill plant at 1,700m above sea level, covering a difference in elevation of 646m. In October 2017, Doppelmayr, headquartered in Austria, was awarded a contract to build an approximately 1.4km-long ropeway to transport 175 tonnes of material per hour in buckets. Commissioning of the system is planned to take place in March 2019.

capacity and to meet stringent environmental regulations arises, in terms of dry bulk handling.

STM has gained extensive experience and in-depth knowledge while operating in many fields, and this has all been extremely useful for its work in the bulk terminals market. In the last few years, STM's portfolio has become more challenging and specialized to meet the demands of handling grains and cement. A



further opportunity is biomass handling facilities that are becoming ever more popular and are encouraging investment in new port terminals.

STM'S NEW TELESCOPIC SWINGER CONVEYOR

To meet the needs of contractors that require uninterrupted feeding, STM has engineered and developed its telescopic swinger conveyor to distribute material. This new conveyor is STM's pride and joy and is an excellent example of Italian engineering.

The structure of the swinger is made of steel. The conveyor swinger can assume different configurations according to the application requested; it can assume different inclinations and extensions during the working phase.

The conveyor was originally developed for use in the construction of RCC (roller-compacted concrete) dams, but it also has wide application for use in the bulk handling market, especially at bulk terminals.

The new STM telescopic swinger conveyor is a machine that can carry up to 2,000tph (tonnes per hour). Mechanically it can swivel approximately 300°, change vertical slope between +23° and -20°, adapt the length between approximately 30m (completely closed) and approximately 45m (completely opened).

It is manufactured in metal profiles that are suitably sized and designed. The sections are connected with external steel plates and internal steel profiles. The volume of the loading hopper is 3–4m³. No fixings on the ground are needed.

The telescopic swinger conveyor is composed of three different modules:

- ❖ the first module, 37m long, can rotate



around the vertical axes by a slewing ring, and can have different inclinations that are adjusted by a piston;

- ❖ the second and the third modules are built-in on the first module and can move longitudinally and extend the belt conveyor length until to the 45m length.

This solution is very popular, because it satisfies the multiple needs of contractors.

SPECIFIC CONVEYING SYSTEM FOR EACH MATERIAL

STM has also gained experience in the handling of different kind of materials like RCC concrete, petcoke, coal, and muck from tunneling excavation.

- ❖ **petcoke:** this is an environmentally responsible recycling process used in some oil refineries to make the most use of hydrocarbon residuals that otherwise would go to waste. STM designs innovative solutions for petcoke handling. In its

plants all the electrical and mechanical equipments are certified ATEX to run a good and safe operation and to respect the main

international regulations. STM designs

and supplies enclosed conveyors are

often used to move the coke into a

storage building and then onto docks for

loading, onto barges, ships or to land-

based transportation loading facilities. The

conveyor used in this field is known as

flow dynamic conveyor and has very

particular features. Indeed this system

does not have rollers and the rubber belt

closes itself into a pipe and moves on air

cushions, avoiding any friction, so it can

reach high speed. In this way, it is possible

to convey the material from different

points of the site into a storage building

and then onto docks for loading, onto

barges, ships or to land-based

transportation loading facilities.

- ❖ **RCC Concrete:** STM gained great experience in concrete placing systems, particularly in the placement of RCC concrete used in the gravity dam construction, gained operating in many world projects (Canada, Iran, Namibia, Malaysia, Ethiopia, Morocco, Turkey, Sudan) to develop even more innovative solutions for bulk material handling in order to meet the needs of all its customers.

- ❖ **muck and spoil from tunneling excavation site:** Conveyor systems provide an efficient, reliable, cost-effective and lower-risk method of removing muck and spoil from tunnelling excavation sites. STM's continuous conveyor is specifically engineered to smoothly handle the transport of materials from the tunnel excavation site to the surface and beyond. Large Belt Conveyor storage capacity increases TBM (tunnel boring machine) utilization, reduces construction time and results in lower costs.



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