

# THE FLYINGBELT

Pushing the Boundaries of Engineering Performance



**The Flyingbelt** is a remarkable example of engineering prowess and a more cost-effective, efficient and environmentally-friendly conveying solution compared to conventional truck transportation. In Brazil, one just started running after a successful collaboration between **Sempertrans** and **Agudio**.

For the expansion of its Barroso cement plant in Minas Gerais, Brazil, Lafarge-Holcim was seeking an innovative conveyor solution which would withstand a demanding production capacity without wreaking havoc on the surroundings.

Relying on our long-standing technical expertise and product flexibility, LafargeHolcim and Agudio chose Sempertrans as their partner of choice to

develop a custom conveyor belt for this outstanding project. It involved the construction of a loading and unloading station, designed by Agudio, and a single 15-kilometre-long belt tailored by Sempertrans to meet the specific performance, cost and environment-conscious requirements of the customer. The longest Flyingbelt in the world was borne out of exemplary teamwork.

## BARROSO PROJECT IN NUMBERS

Client: LafargeHolcim

Location: Minas Gerais, Brazil

Year: 2016

Transported material	Crushed limestone / Clay
Horizontal installation length	7.2 km from limestone quarry to cement works
Installation height	Up to 36 m above ground level
Conveyor belt length	Approx. 15 km
Conveyor belt width	1,200 mm
Transport capacity	1,500 tph
Track ropes	55 mm
Hauling ropes	20 mm
Number of towers	18
Number of intermediate anchors	3
Motors nominal power (belt)	3 x 615 kW
Motors nominal power (maint)	4x30 kW
Speed of belt	4.00 m/s

## FLYINGBELT: THE CONCEPT

Fly with a conveyor belt over any obstacle by combining the advantages of a conveyor belt system and a material ropeway construction

- Belt conveyor suspended on four track ropes
- Easy installation and low operation costs of a belt conveyor
- High versatility to overcome the most difficult surroundings
- Possibility for partial coverage of top part to protect material from rain or full coverage on top and side parts to avoid material spillage
- Maintenance with special vehicle, designed according to best ropeway engineering guidelines





Standing on a ropeway 7,2 km long and up to 36 m high, this unique conveyor system transports 1,500 tph of limestone and clay from the quarry to Lafarge-Holcim's cement plant, while crossing valleys and a dense vegetation without ever touching the ground.

Sempertrans' Metaltrans belt is the perfect solution for the unusual structure. It has a unique steel carcass construction with a low elastic modulus which allows for optimum elongation. This feature ensures that the belt is supple and can stretch out enough to fit the deformation imposed by the very small radius curves on the pylon stations supporting the Flyingbelt.

Sempertrans is the only conveyor belt manufacturer in the world producing such a complex belt.

## SEMPERTRANS SUPPLIED:

- Tailored belt design requiring elaborate, structural engineering calculations and planning to fit unique Flyingbelt construction
- Production of 15 km of specialty Metaltrans conveyor belt
- Installation and positioning of several bits of belt in a record 75 days and 22 splices by six Sempertrans Service technicians 30 m above ground

## BENEFITS OF FLYINGBELT

### Compared to traditional conveyor system or standalone ropeway installation



#### INCREASED PRODUCTIVITY

Higher transport capacity and decreased power consumption



#### LOW ENVIRONMENTAL IMPACT

Fewer supporting structures for reduced visual and environmental impact



#### FLEXIBLE ROUTE DESIGN

Adaptable to the most problematic terrains to overcome obstacles using reduced number of supports



#### REDUCED CAPEX

### Compared to truck transportation



#### INCREASED EFFICIENCY

Continuous material transport vs. empty trucks on half driven distance



#### LOWER OPERATING & MAINTENANCE COSTS

Use of standard, reliable and long-life conveyor belt components



#### HIGHLY SAFE

System relying on engineering performance and integrated safety device



#### CO<sub>2</sub> REDUCTION

Lower power consumption on long distances



#### LOWER NOISE IMPACT

Less noise pollution without trucks on the road

## ABOUT SEMPERTRANS

Sempertrans is one of the largest and most technologically advanced conveyor belt manufacturers in the world and part of the Semperit Group. We are headquartered in Vienna, Austria but operate globally with production facilities in Poland, France, China and India.

Conveyor belts made by Sempertrans are distinguished worldwide for their high performance, high operational reliability and long service life through continuous focus on R&D and sustainability.

Our product portfolio ranges from general and engineered solutions to specialised covers. It includes conveyor belts with both textile and steel cords, which perfectly meet the requirements of their respective fields of application – from underground and surface mining to heavy industry and shipping ports.

Sempertrans is committed to finding the most suitable and reliable solution to help optimise the effectiveness of our customers' business operations. We offer application engineering, product development, manufacturing, installation and maintenance services.

## ABOUT AGUDIO

Agudio, founded in Italy in 1861 and now a division of Leitner S.p.A., is a worldwide leader in engineering and construction of conventional and non-conventional transportation systems on ropes for bulk material (ropeways, conveyor belts suspended on ropes, cable cranes).

Agudio is also involved, within the Group, in the design of special ropeways for people transportation (jig-back and funiculars).

Agudio is able to design reliable and cost-effective solutions for cement, mining and construction (bridges and dams) industries.

