

Conveyor belt system Scilla, Italy

The conveying technology in Scilla overcomes every challenge

Almost 3 km from the port town of Scilla in Calabria, a power plant 320 m higher is generating electricity. This electricity will be supplied to Scilla via a cable routed through the mountain and from there to Sicily via underwater cables. That is why the Roman company Terna Rete Italia S.p.A. is building a tunnel, for pedestrians and vehicles, which is 3 m in diameter and runs from Scilla to the power plant. Marti Technik AG provided the conveying technology for the excavated material of the tunnel: including a vertical belt storage and a tunnel belt which additionally delineates a curve at a 12% incline. The plant was commissioned in April 2013.



Overview

Contractor: Terna Rete Italia S.p.A., Rom
Order total: 1.6 million Euros
Built: 2013

Conveying technology

Tunnel belt conveyor
Vertical belt storage





Tunnel excavation

Tunnel length: 2775 m
Tunnelling method: TBM
Tunnelling: uphill with 12% incline

Belt storage

Item: Vertical belt storage

Tunnel belt conveyor

Wheelbase: 2775 m
Difference in altitude: -320 m
Drive: regenerative
Braking effect: similar to a booster on the back-up
Width of belt: 500 mm
Belt: ST 630 K
Power: 160 kW
Conveying capacity: 160 t/h
Grain size: 0-150 mm



Belt storage for confined spaces

The space at the site in Scilla is restricted not just by the sea, but also by the town itself and the Calabrian massif. That is why the vertical belt storage developed by Marti Technik AG was deemed as perfect for such a setting. At its full size it is over 7 containers high, however, on the construction site it takes up significantly less space than a horizontal belt storage. This vertical belt storage is an important innovation for us as it is becoming increasingly apparent that more and more building projects have to overcome the restrictions associated with limited space conditions.

The conveyor belt delineates a curve at a 12% incline

Due to the 12% incline in the tunnel, the conveyor belt is regenerative in its operation owing to the weight of the excavated material. To ensure that the belt does not gather too much momentum, it is slowed with an intermediate drive, similar to a booster, on the back-up of the tunnel boring machine. Together with the incline, the tunnel delineates a left-hand curve (radius of 500 m). Thanks to a process specially designed by Marti Technik AG, the conveyor belt in Scilla can master this curve.



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