

Project:

Túnel El Melón II

Location:

Route 5 North, between the communities of Nogales and Zapallar (Chile)

Project completed:

Expected 2021

Market sector:

Tunneling

Products used:

MasterRoc® SA 160 and MasterLife® 300 D

Project description

Overall, the project measures 5 kilometers and includes the construction of a 2.8 km tunnel as well as the access roads leading to it. It is planned within the concessions of the Ministry of Public Works.

In the second stage of the project, it is considered to rehabilitate the existing Túnel el Melón I with a larger cross section and similar specifications as for Tunnel el Melon II. Five cross passages will be built between the two tunnels to create an escape route. Among others, both tunnels will have a modern variable messaging system and high-end lighting, fire- and communication systems. Each tunnel will be implemented with emergency bays, in case of any eventuality. The Ministry of Public Works also implements intercity concessional roads including the Melon having a free flow system, which is similar to the authorized highways in Santiago. This enables vehicles with TAG to pass through automated gates without having to stop and pay a toll, thus increasing the speed of transport and improving the connection between the communities of Nogales and Zapallar.

The project stakeholders aim for creating a high service level, therefore the highway will include elements of international standard intercity transit. The project also provides the construction of two small emergency buildings to assist users in case of any need.

Túnel El Melón II (Chile)

Chile: Túnel El Melón II

Our solution

MasterLife® 300 D, a crystalline waterproofing additive allows the sealing of small cracks in hardened concrete, while MasterRoc® SA 160 alkali-free accelerator provides temporary and permanent rock support in tunnels and achieves good long-term strength, a quick setting property and durability.

Project progress recording

The progress of the project is recorded daily, by measuring the blasts and profile with instruments. Topographical controls are also carried out for surface works, thus, among others, determining the advances, cubic meters of rock excavation and earth movement on the surface. The underground excavation, profiles and excavated length is measured daily to monitor if it is progressed linearly and to make sure that the excavated volume is controlled. The progress control is integral, not only on what is measured, but also on meters executed and on the course and alignment that corresponds.

Sustainability advantages

The Shotcrete contains high-range water-reducing admixtures, which lead to a reduced consumption of water and improved sustainability.

Our contribution

At the beginning of 2018, BASF started supporting this project by working together with the cement companies to create mix designs for the Shotcrete. There are permanent technical meetings, to monitor the process and its details. BASF participates and provides tips on how to improve certain aspects and which subjects to focus on. This also includes training for the staff, being involved in the concrete operation.

Project summary

Master Builders Solutions provided solutions for the construction of the Túnel El Melón II in Chile: MasterRoc® SA 160 alkali-free accelerator and MasterLife® 300 D crystalline waterproofing additives. The current construction of the Túnel El Melón is one of the most relevant milestones in the road infrastructure of Chile. Its complex construction will increase the road capacity and provide modern innovations for one of the most important roads in Chile.

Further information is available [here](#) (Spanish only)

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Master Builders Solutions is built on the experience gained from more than a century in the construction industry. At the core of the Master Builders Solutions brand is the combined know-how and experience of a global community of BASF construction experts, who connect with you to solve all your construction challenges.