

## CASE STUDY

# Alimak elevator gives emergency access in underground mine

An Alimak rack and pinion-driven elevator has been installed in Voskhod-Oriel's chromium mine in Kazakhstan. The elevator serves as an escape elevator in emergency situations.

In 2008 Alimak signed a contract to provide an Alimak rack and pinion-driven elevator for Voskhod-Oriel's chromium mine, located in the Khromtau district, Republic of Kazakhstan. The Alimak elevator is being used for service and inspection purposes and also serves as an escape elevator in emergency situations.

Kazakhstan currently holds a third of the world's chromium reserves, after South Africa and Zimbabwe. The environment in the mine creates high demands on the elevators durability and reliability. The Alimak elevator has a lifting height of 204 meters and a payload capacity of 1000 kg or nine passengers. It is equipped with a single automatic control system, auto alarm, auto return to base, emergency phone, emergency flashing light on the car roof, and overload sensing device.

Several hundred Alimak elevators have been delivered to a variety of underground applications all over the world. Among them is the Norilsk iron ore mine in Siberia, Russia where five elevators were installed in the early 90's in up to 200 meters deep vertical shafts. The deepest Alimak elevator goes 640 meters in a vertical shaft in Freeport, Indonesia. The deepest situated elevator is for SNU Project, Sudbury, Canada, 2 300 meters below ground level.

Alimak, specialists in rack and pinion-driven elevators for installation above as well as under ground. The Alimak elevator has its drive unit placed on the roof of the elevator car and climbs on guide rails, which are anchored to the rock wall with expansion bolts. The Alimak elevator can travel vertically as well as at an inclination and the size and shape of the car can be adapted to the requirements at the site.



Khromtau, Republic of Kazakhstan

### ELEVATOR DETAILS

Location:	Khromtau, Republic of Kazakhstan
Application:	Underground mine
Elevator type:	Rack and Pinion
Elevator model:	Alimak SE 1000
Capacity:	1,000 kg or 9 persons
Elevator car size:	1.04 m x 1.56 m x 2.17 m (W x L x H)
Speed:	0.59 m/s
Machinery:	1 x 11 kW DOL
Lifting height:	204.32 m
No. of landings:	2