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PRESS RELEASE

ALPINE celebrates tunnel breakthrough for New Delhi's Airport Metro Express

Extremely complex metro expansion in the center of New Delhi

India: ALPINE celebrates the final tunnel breakthrough for the Airport Metro Express Line in New Delhi after less than ten months of tunneling. ALPINE landed the contract tendered by the Delhi Airport Metro Rail Corporation (DMRC) in September 2007 together with its joint venture partners, SAMSUNG Corporation (Korea) and Hindustan Construction Company (India).

Tunnel construction

The 3.86-kilometer twin-tube tunnel project (2 x 1,540 m + 2 x 670 m) and a cut & cover tunnel (1.16 km) were driven with three tunnel boring machines (TBM). The tunneling conditions were very hard. "We worked under extremely difficult conditions at a depth of 35 – 45 meters," says Roman Esterbauer, managing director of ALPINE Bau GmbH. New Delhi's major traffic arteries are located directly above the construction site: the Minto Railroad Bridge, Connaught Square and Connaught Circle as well as two existing Metro lines, whose continuous operation could not be disrupted. The work was not only provided at a great depth but also with a longitudinal gradient of 2.85 % and a water pressure of 4.5 bar. "Thanks to our extensive experience we were able to cope with the difficult situation during the headwork and complete the tunneling in just 11 months," adds Erich Golger, ALPINE's division manager for Asia.

This contract section includes the construction of the TBM tunnels, a cut & cover tunnel (1,165 m) and two underground stations, the New Delhi Station and the Shivaji Stadium Station, with a length of 242 meters each, as well as the adjoining parking garages.

Airport Metro Express

The Airport Metro Express Line in New Delhi has a length of 23 kilometers and six stations, linking the Central Railway Station in New Delhi with the Indira Gandhi International Airport and the district of Dwarka.

The line between the main station and airport is to be commissioned on time before the 2010 Commonwealth Games to provide a fast, convenient airport connection and reduce the daily traffic jams on the road.

ALPINE's competence in tunnel construction

Its extensive competence in tunnel construction not only allows ALPINE to successfully conclude projects for the construction of railroad, subway and highway tunnels but also water and energy management systems on an international scale. ALPINE is currently instrumental in the construction of the Gotthard Base Tunnel in Switzerland and responsible for building part of the new metro network in Singapore and a water supply tunnel in Tapovan, India. Further tunnel construction projects for



power plants are located in Bulgaria and Turkey. ALPINE has also been engaged in tunnel construction in China for years and is currently building a 25-km water supply tunnel. Consulting for tunnel construction projects is being provided in the USA, Russia, Kazakhstan and Great Britain, offering know-how and planning expertise.

*The **ALPINE** Group, a member of the FCC Group, is a global player. With a construction output of EUR 3.5 billion in 2008 and a staff of roughly 15,530, ALPINE is the second biggest construction group in Austria .For more information visit <http://www.alpine.at>*

Photos:

Tunnel Breakthrough

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The photo may be printed free of charge.

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