

From horses to heavy machinery: Building the iconic Chenab railway bridge in Jammu & Kashmir



Realising the dream of a seamless rail journey from Kashmir to Kanyakumari came with daunting engineering challenges, primary among them, building the world's highest railway bridge over the Chenab River in the treacherous terrain of the Himalayas.

Interestingly, when construction first commenced, the only way to access the Chenab bridge site was on horseback.

“Initially, we relied on mules and horses to transport both our teams and materials,” says a spokesperson for Afcons Infrastructure Limited, the company behind the construction. “Gradually, temporary access roads were built, an 11-km stretch on the North bank and 12 km on the South, to support the project.”

PM Modi, on Friday, unveiled the Chenab Bridge, along with the Anji Rail Bridge and the Udhampur-Srinagar-Baramulla Rail Link (USBRL) project. Additionally, he flagged off new Vande Bharat trains linking Katra and Srinagar, marking a new era of connectivity in Jammu & Kashmir.

Remarkably standing high, 359 metres above the river, the Chenab Bridge is 35 metres taller than the Eiffel Tower and is now the highest railway bridge in the world.

“This isn’t just a feat of engineering, it’s a symbol of India’s determination to overcome impossible odds,” says Krishnamurthy Subramanian, Executive Vice Chairman of Afcons.

To meet the challenge, Afcons deployed some of the most advanced construction technologies in the world, including the tallest crossbar cable cranes and heavy-duty machinery. The Himalayan slopes were stabilised using massive consolidation grouting, allowing for secure foundations to be laid for the bridge’s signature arch.

The arch was constructed using the cantilever method from both riverbanks. On April 5, 2021, both halves met perfectly at the crown, marking a key milestone in the project’s timeline.

The viaduct section posed its own set of technical hurdles, requiring incremental launching on a transition curve and gradient - a first in Indian Railways history.

“We planned the deck launching in four meticulously engineered segments,” said Giridhar Rajagopalan, Deputy Managing Director, Afcons.

To ensure top-tier quality throughout, Afcons also established an NABL-accredited laboratory on-site, another first for an Indian Railways project.

“This bridge is a tribute to Indian engineering, teamwork, and our commitment to nation-building,” said S. Paramasivan, Managing Director, Afcons. “It will inspire generations to come.”

After the inauguration, PM Modi walked the length of the bridge carrying the Tricolour, underscoring the project’s national significance.