



# Indian Railways Project

## *The Udhampur -Srinagar- Baramulla Railway Link (USBRL)*

With a plan to provide an alternate safe and reliable transport system to Jammu and Kashmir in the Kashmir Valley the Indian government has planned a 338 kilometer long railway line from Udhampur to Baramulla. This transit line would enable the joining of the Kashmir Valley with the rest of the Indian railway network.

It starts in Udhampur and ends in Baramulla (although an extension to Kupwara has now been approved by the Railway Board) and comes under the jurisdiction of the Ferozpur railway division of Indian Railways with a total project cost (as of 2022) of US 3.5 Billion.

The project has a long and chequered history and serious progress was only made once it was declared a project of national significance in 2002.

It is the most challenging undertaking post independence by Indian Railways and is made doubly difficult due to the rugged and complex Himalayan geology. The route faces multiple natural challenges including major earthquake zones, extreme temperatures and inhospitable terrain

This project involves 38 tunnels with a combined length of 119 kilometers, the longest being the T49 at 12.75 kilometers (the country's longest). This project utilizes 927 bridges totaling 13 kilometers, including the iconic Chenab Bridge with an overall length of 1,315 meters, an arch span of 467 meters, and a height of 359 meters, making this the highest railway bridge in the world!

### **Building this bridge required:**

25,000 meters of structural steel

4,000 meters of reinforcing

43,000 cumulative meters of excavation

### **These are the overall project specifications:**

Route Length – 345 kilometers

Ruling Grades – 1 in 80 through 1 in 100

Bridges – 931 totaling 13 kilometers

Tunnels – 38 totaling 186 kilometers



The project has been completed and handed over in sections-

**1994** - The original project was sanctioned

**2002** - After very little progress the project was declared of "National Importance"

**2004** - The 53km Jammu-Udampur section finally opens after 21 years with 20 major tunnels(the longest at 2.5km) and 150 bridges (the highest at 77 metres)

**2008** - The 66km section between Anantnag and Manzhama is opened

**2009** - Extension to Baramulla is opened and the extension to Kupwara is proposed and a survey for this is started. The 18km section between Anantnag and Qazigund is opened meaning the entire Valley line as initially proposed in 1994 is now open from Qazigund to Baramulla although as yet still not connected to the national rail network

**2010** - A critical tunnel in Sangaldam is completed

**2011** - The 1.215 km Pir Panjal rail tunnel is completed and 8 years after the contract was initially awarded work finally begins on the worlds tallest rail bridge at Chenab river

**2013** - The Pir Panjal rail tunnel is opened meaning trains can run from Jammu to Kashmir and onwards to Baramulla but as yet no southern connection to the rest on the Indian rail network is available

**2014** - Trains can now travel north to Katra from Delhi but the section from Katra to Banihal still remains to connect the two networks

**2019** - All sections are now complete except the section between Katra and Banihal which will need 111 km of track BUT 97 km of that will be in tunnels 27 major and 10 minor bridges including the worlds highest bridge at Chenab river at 359 metres high is 35 metres higher than the Eiffel tower

**2022** - Chenab bridge is complete

**2023** - Anji Khad at 321 metres above the river is complete and becomes India's largest "cable stayed" bridge and the network is now 95% complete with trial trains running over the complete line

Pivotal to the safety of staff and passengers, and key to the protection of the significant investment was the tunnel fire protection system. Crucial to an effective fire protection system is a successful control valve.



Working closely with IRCON and the major tunneling contractors, Cla-Val, with partners Sharp Solutions and Newage Fire, were nominated as the only allowable product to be used for this project.

Our global history, the quality of our designs, and the proven capabilities of our in-country support, as well as the strength of our relationships meant there was simply no other choice. This project adds to the list of nationally significant projects in India using Cla-Val products and Cla-Val's approved in-country partners.

So far we have progressed tunnels 14/15/40/41/48/49/50 with a total of 188x150 Cla-Val 90.21 UL listed pressure control valves and 178x25mm Cla-Val CRDL direct acting pressure regulators.

In conclusion, when reliability of products and support is critical, it is important to choose Cla-Val and authorized Cla-Val in-country partners.