



## IMPROVING BRIDGE INFRASTRUCTURE THROUGH REHABILITATION - AN INDIAN EXPERIENCE -

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### Summary

Bridges are the vital infrastructure elements of Indian Railways and Highways network. There are more than 200,000 bridges on this system. Maintaining them in safe and serviceable condition gets high priority. At times, they get adversely affected and are required to be rehabilitated by adopting novel techniques. In the process, study of causes of deterioration has revealed that there is potential improvement possible to enhance durability aspects.

Similarly, improvements are required to be done in bridge structures due to situational, environmental and loading changes. How these improvements are done is described in this article.

**Keywords:** rehabilitation, corrosion, bearings displacement, post-tensioning, external prestressing, bonding of plates, jacketing.

### 1. Introduction:

India attained independence and became a Sovereign Democratic Republic in late forties. Over the years, successive Five Year Plans were launched for systematic development of infrastructure. Roads and Rail Bridges got priority.

Bridging the rivers in India posed a challenge all the time. Many rivers are mighty with large waterways ranging from 1 to 2.5 Kms. Due to limited resources, priorities were fixed to connect capital cities first and then other cities through railways and highways network. Bridges assumed significant importance on these networks. Experience gained and lessons learnt through rehabilitation for improvement of infrastructure is brought out here.

### 2. Evolution of Bridge Construction in India:

Post war era coincided with formation of Sovereign Republic of India which embarked upon systematic development of infrastructure in the country, through successive Five Year Plans. As it happened, this was also beginning of application of pre-stressed concrete on a large scale. Advent of pre-stressed concrete opened up a new chapter in bridge engineering by encouraging new methods of constructions and large span constructions

In urban areas, due to thick population, such constructions are done with new methods such as span by span and segmental constructions, launching by overhead gantries, incremental launching etc.