

## Strengthening of Bridges by Additional Prestressing

**Authors :** A. Bouhaloufa, T. Kadri, S. Zouaoui, A. Belhacene

**Abstract :** To put more durable bridges, it is important to maintain existing structures, rather than investing in new structures. Instead of demolishing the old bridge and replace them with new, we must preserve and upgrade using better methods of diagnosis, auscultation and repair, the interest of this work is to increase the bearing capacity bridges damaged by additional prestressing, this type of reinforcement is growing continuously. In addition to excellent static strength, prestressing also has a very high resistance to fatigue, so it is suitable to solve the problem of failure of the bearing capacity of the bridges. This failure often comes to the development of overloads in quantity and quality, that is our daily traffic has increased and become very complicated, on the other hand its constituents are advanced in weight and speed and therefore almost all old bridges became unable to support the movement of the latter and remain disabled to all these problems. The main purpose of this work includes the following three aspects: - Determination of the main diseases and factors affecting the deterioration of bridges in Algeria, - Evaluation of the bearing capacity of bridges, - Proposal technical reinforcement to improve the bearing capacity of a degraded structure.

**Keywords :** bridges, repair, auscultation, diagnosis, pathology, additional prestressing

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