

APPLICATION OF COMPOSITE MATERIALS ON THE STRUCTURE OF ROAD BRIDGES

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ABSTRACT

Algeria has more than 11000 bridges of which 55% are road bridges. More than 40% of these bridges require maintenance and/or repair and strengthening. The application of the repair techniques like jacketing, external prestress or composites materials permit to the structure to regain its mechanical performance. In most cases, the repair is not guaranteed, as the follow-up of behaviour and quality control are not applied.

We will present in this paper, the technique of carbon fibres composite material strengthening of structural elements of bridges. This technique, applied since more than 15 years in the rehabilitation of road bridges in Algeria, has proved its efficiency and under static and dynamic behaviour of these structures. The results of an in situ experimental work will be presented, in order to get the maximum information that help the generalization of this technique for strengthening of other damaged structures.

Keywords: Composite, fibers of carbon, road bridges, beams, experimental test, repair.