

Research regarding application of new material to civil engineering structure members

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Materials for civil engineering structures, such as bridges, are used generally steel and concrete, however, recently, comparing with steel and concrete, application of new materials is promoted, such as aluminum alloy and FRP (Fiber Reinforced Plastics), which are lightweight, high intensity and high durability. In case of applying these new materials to civil engineering structures, at present, they are expensive, therefore the initial cost will be high. However, lifecycle cost including maintenance and management will be able to be lower.

Because of this situation, in this subject, we examined application possibility of new materials such as FRP and aluminium alloy, to civil engineering structures. As a result of material characteristics survey and examination by stereo FEM analysis, application possibility of the new materials to road bridge plate deck, was indicated from perspective of structure analysis.

Keyword : civil engineering structure, new material, aluminum alloy, fiber reinforced plastics