

FOREWORDS

Repair generally means an activity by replacing a part or putting together what is torn or broken. The object to be repaired usually something that has been used for particular time then get broke by either during its service uses or by accidental force. Therefore, a new part replacement or may be patch were united to the repaired. Generally, repaired object always has tendency to break again with the same manner or may be in different way according to how good the repair was conducted.

Same condition may also be happen in civil engineering works. Even a well-built structure still has probability to deteriorate by many factors. For example, a reinforced beam may experience a sudden surcharge load by unexpected activity above it, which could make the concrete experience and pass its maximum load capacity and failure. In ideal condition, this part of structure should be replaced by new structure, however this may not always possible. Therefore repair work is conducted to restore the failed member strength. This repair work has to be reliable and properly assessed for its probability and behavior of its failure mechanism, so the repaired structure may not harm the user.

In this study, staple repair rebar which has been widely used in repairing surface structure such wall and floor are applied and observed as flexural beam repair device. The easiness of application and cheap price of the devices are several benefits of proposed repair system. However, better understanding of how the proposed repair system will behave during service load and ultimate load is needed before the repair system may be widely used. As there are few information and conducted research on such repair system, therefore, this study is conducted as a preliminary study aiming to open the problems of such repair system, and also similar system with abrupt section change along the length of member. Discussion of the result and repair process is open so there will be a continuity and deliberate discussion to this research topic.

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