

Economic Study of Strengthening of Existing RCC Building

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Abstract: Many structures fail or deteriorate before completion of its intended life span due to poor quality of material used, lack of mix design, poor workmanship, attacked by environmental agencies, etc. Sometimes due to slenderness of column or less reinforcement provided than actual requirements, less depth/thickness provided in flexural members, etc. feels excessive vibration during walking on floor ultimately develops cracks. Strength of such structural elements can be found by using non-destructive tests like Rebound hammer test, ultrasonic pulse velocity test, etc. If strength of existing structural elements is less than desired strength then structural consultant suggested strengthening of structural elements. There are various methods used in strengthening of existing structural elements like pressure grouting, fibre wrapping, chemical treatment, structural steel support, jacketing, etc. But these techniques are very costly and need precise quality control activity. In the present of investigation, strengthening of beam and column elements of a building by ferrocement techniques and steel jacketing were carried out and cost and cost comparison and strength results before and after strengthening are presented. It is observed that the strength of structural by ferrocement technique is cost effective than steel jacketing technique. And also has increase in the strength of RCC elements.

Keywords: Strengthening, Ferrocement, Steel Jacketing

REFERENCES

- [1] Mini Soman ,JebinMohan,“Rehabilitation of RC columns using ferrocement jacketing” “Construction and Building Materials181 (2018) 156–162”.
- [2] Y V Ladi and P M Mohite “Experimental Evaluation of Reinforced Concrete being retrofitted with Ferocement” “Int. J. Struct. & Civil Engg. Res. 2013 ISSN 2319-6009”
- [3] Gurbir Singh Benipal,Kamaldeep Singh “Reinforced Concrete Beams retrofitted using Ferocement” “2015 IJEDR Volume 3”
- [4] A.B.M.A. Kaish , M.R. Alam b, M. Jamil c, M.F.M. Zain c, M.A. Wahed,“Improved ferrocement jacketing for restrengthening of square RC short column”“Construction and Building Materials 36 (2012) 228–237”.
- [5] .Abdullah a, KatsukiTakiguchi, “An investigation into the behavior and strength of reinforcedconcrete columns strengthened with ferrocement jackets” “Cement & Concrete Composites 25 (2003) 233–242”.
- [6] S.U. KHAN,S.F.A.RAFEEQI AND T. AYUB “Strengthening of RC Beams in Flexure Using