STUDY OF STRENGTHENING STRUCTURE OF COLLEGE BUILDING STPMD YOGYAKARTA BY USING MATERIAL E-GLASS FIBER REINFORCED POLYMER (E-GFRP)

Name of Student : Michael D.G.Simamora
Number of Student : 3111 105 041
Major Department : Civil Engineering-ITS
Lecturer Consultant : Prof.Tavio, ST. MT. Ph.D

ABSTRACT

For reasons of safety of the building’s user of STPMD Yogyakarta that was built in 1965, the building must be analyzed in accordance with the latest earthquake regulations. This is done to minimize loss of life and property of victims of an earthquake in the future, especially based on the results of the test hammer test on the first floor columns obtained an average compressive strength of concrete 18 MPa is not eligible for the 20 Mpa.

In this final project planned retrofitting the building damage STPMD Yogyakarta flexural, shear or a combination of both by using the jacketing material fibers made from E-GFRP. This strengthening method is one method of retrofitting columns, done by enveloping the column with material made of glass fiber in the whole cross section of the column. E-GFRP methods need to be analyzed detail to prove that the results of the column reinforcement eligible and consistent with applicable regulations (ACI-440-2R-02 Guide for Design of Externally Bonded FRP. So it can be ascertained that the analysis of the results column jacketing able to bear the burden of the plan. So it needs to be made column interaction diagrams and analysis capabilities with a column made of glass fiber coating material that can show the ability to assume the column axial load, shear and bending.

Keywords: ACI-440-2R-02 Guide for Design of Externally Bonded FRP, E-GFRP jacketing, Strengthening of reinforced concrete columns.