ANALISIS KEKUATAN STRUKTUR PADA *RAMP DOOR* SETELAH PENAMBAHAN PLAT DENGAN METODE ELEMEN HINGGA

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ABSTRACT

Ramp door is a ramp door construction that has an important role as access in and out of vehicles. The use of ramp doors with excessive loads will cause damage to the construction such as breaking and bending, so repairs need to be made to improve the strength of the ramp door structure. In carrying out this analysis, the author analyzed the ramp door that was broken. The ramp door was repaired by adding a layer of 15 mm thick plate with a length of 800 mm as a construction reinforcement. To ensure that the ramp door can work properly after repair, it is necessary to analyze to determine the allowable stress, safety factor in accordance with GL regulations and the comparison between the new and repaired ramp doors. The analysis process uses the Finite Element Method and FEM-based software. From the results of the analysis, the Total Deformation value on the repaired ramp door is 1.4469 mm and on the new ramp door is 1.3244 mm for the stress on the repaired ramp door is 102.42 Mpa and for the new ramp door is 52.299 Mpa and for the safety factor on the repaired ramp door is 2.4408 and for the repaired ramp door is 4.7802. The stress on the Sling Kupingan is 8.851 Mpa. From the addition of the plate, the barge experienced a decrease in draft of 310 mm.

Keywords: Ramp Door, FEM, Safety Factor.