

## ***BEAM SHEAR BEHAVIOR DUE TO CORROSION OF SHEAR REINFORCEMENT***

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### ***Abstract***

*Indonesia is an archipelago, some of its regions are directly adjacent to the sea. One of the main problems affecting the life of concrete and its safety is corrosion. The most dangerous type of infrastructure damage is corrosion of concrete reinforcement, which causes a decrease in material quality and structural capacity. The purpose of this study was to observe the effect of corrosion of reinforcement used in reinforced concrete beams on shear collapse.*

*This research is an experimental study using a media mixture of 3.5% corrosive salt (NaCl) solution and using electric current (Power Supply). The reinforcement used has a diameter of 6 and 13 mm. Corrosion focuses on 6 mm diameter stirrup reinforcement for 10 days using 0.407 Ampere with a planned corrosion of 20% (Binamarga Specification Guidelines 2018) and the concrete blanket is 40 mm (SNI 2847: 2019). Beam test objects are made with a size of 1000 x 150 x 250 mm.*

*The results of research and analysis after the reinforcement is corroded, there is a decrease in the shear load capacity that can be held on the beam. The maximum load of the control beam was 164 kN with a deflection of 10.4 mm, while the beam with corrosion reinforcement obtained a maximum load of 96 kN, resulting in a 41.5% decrease in load capacity. The weight of the corroded reinforcement for 10 days was found to be 6.44%, the remaining 13.56% of the corrosion occurred in the flexural reinforcement.*

***Keywords-Beams:*** Crack Grooves, Beam, Corrosion, Shear Testing.