

ABSTRAK

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Production Process of 20KL Water Truck Tanks and FEA Solidworks Simulations at PT. BMT Burangkeng Maju Teknik

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Water Truck Tanks are tanks located on motorized vehicles that are designed to carry liquid loads, to control air emissions by dust particles in the mining area. The function of the tank is as a reservoir for water distributed in watering. The type of tank used is the type of roll bending tank. This writing aims to determine the effect of loading pressure vessels on liquid loads in the tank using solidworks simulations which are software based on finite element analysis, from the experiments that have been carried out it is found that the pressure vessels that occur in the tank can affect the age of the tank, the strength of the tank, and changes in tank, therefore the stress analysis that occurs in the Water Truck tank is carried out using solidworks simulations to determine the value of the safety factor in the tank. from the calculation results obtained outer wall thickness (shell plate, cover plate, top plate) is 6 mm, thickness of the inner wall (baffle plate) 4.5 mm, with a tank capacity of 20,000 liters of water and loading of 14175 N / m². The maximum stress value is 1.161x10⁸N / m² and the yield strength of SS400 material is 2.5x10⁸N / m² and the safety factor on the calculation of the software solidworks simulations is 2.15. When compared with the standard table the overall safety factor of the tank is 3.5 - 6. Which means the value obtained from the analysis is fairly safe because it is still below the overall standard value of the safety factor.

References (1984 – 2019)