Desby Parawitasari, 2011. **The Refinement Level of P22 and S22 Low-Carbon Steel Surface With Hot Dip Galvanizing Method**. Thesis under tuition of Drs. Djoni Izak R, M.Si., and Jan Adi.,S.Si, M.Si. Departmental of Physics Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

The research has been done to determine the effect of layering process temperature variation forward the thick layer of steel type P.22 and S.22 with *Hot Dip Galvanizing* methods. The galvanizing process is done by using zinc solution and layering process of temperature variation of 445°C, 450°C and 455°C for 2 minutes. The thick of samples are tasted by using the electrometer, the hardness are tasted by using microvickers hardness testers, the corrosion rate are fasted by using gravimetric methods and test micro-structure by using metallurgi microscope. The temperature process of *Hot Dip Galvanizing* layering is optimum for the layering of zinc resistance forward the corrosion gotten by temperature of 455°C with thickness values (119 ± 1.00)μm with the corrosion rate is 0,009995 mpy for steel type P.22, and the thickness value (94.90 ± 0.20)μm with the corrosion rate is 0,016773 mpy for steel type S.22. the maksimum hardness value 550,33 VHN for steel type P.22, and the maksimum hardness value 531,66 VHN for steel type S.22 with the temperature. The test results show the temperature process of *Hot Dip Galvanizing* layering effect on the thick layer of zinc. The higher temperature layering process is used, the thicker layerof zinc is produced. The thick layer of zinc effect on the Vickers value, corrosion rate and the structure of micro. The thicker layer of zinc is produced, the lower Vickers hardness value and corrosion rate occurs. With the temperature the hardness results and the thickness value gotten can be published to get excellent steel product. More researchs needed for other parameter effect, such examples the variation of time and temperature to get a good steel product from the mechanical and article characteristic side.

Keywords: Steel P22 and S22, Hot Dip Galvanizing, zinc liquid