

**ANALYSIS OF THE INFLUENCE OF CURNING TEMPERATURE
VARIATION ON THE BENDING TESTS AND BENDING TESTS OF
ALUMINUM A356 CASTING RESULTS USING THE SANDCASTING
METHOD**

by

Nico Dwi Widiyanto

Study Program of Automotive Engineering, Majoring of Engineering
The State Polytechnic of Jember

ABSTRACT

Pour temperature is one of the variables contained in the casting process. This variable is very important because if the pouring temperature is too low then the cavity in the mold cannot be completely filled which is caused by the molten metal that has hardened before it can fill the cavities in the mold and if the pouring temperature is too high or too hot it will result in shrinkage. The independent variables in this study namely the variation of the pouring temperature used in the specimen printing process. The pouring temperatures used were 650°C, 700°C, 750°C and 800°C, and the dependent variable was an effect variable, namely the variable arising from the use of variations in pouring temperature (independent variable). The dependent variable in this study is the material compression test (bending) value and tensile test value (tensile strength) for each test specimen. The results of the effect of pouring temperature on the A365 aluminum casting process on bending and tensile strength using the sandcasting method have an increasing value. The results of the bending test at 650°C were 156.37 Mpa, 700°C were 174.93 Mpa, 750°C were 180.11 Mpa, and 800°C were 206.43 Mpa. The results of the tensile test at 650°C were 135.11 Mpa, 700°C were 164.65 Mpa, 750°C were 176.44 Mpa, and 800°C were 185.11 Mpa. Further research is needed using different variations or mixtures of several types of aluminum. It is necessary to carry out the data collection process using more sophisticated tools or by using other casting methods an additional testing process is carried out to determine the strength of the specimen in more detail.

Keywords : Pour temperature, Sand casting, bending test, tensile test.