

## ABSTRACT

*Wire drawing process is one of the simplest manufacturing process. The basic principle of wire drawing process is by reducing the initial cross-sectional area of wire becomes smaller with rocks dies. Reduction is known for its wide diameter reduction. This study aims to determine the tensile strength of aluminum wire with wire drawing process with a withdrawal angle 12° and 14°. These results indicate that the process of wire drawing withdrawal speed with the same initial length of wire at an angle of 12° dies at low speed control with the speed values obtained 26,85s time 0,024 m / s, at medium speed control with the speed values obtained 11,20s time 0,058 m / s, while at high speed control with the speed values obtained 09,47s time 0,068 m / s. Drawing speed with the same initial length of wire at an angle of 14° dies at low speed control with the speed values obtained 24,32s time 0,026 m / s, at medium speed control with the speed values obtained 10,36s time 0,062 m / s, while at high speed control with the speed values obtained 07,87 time 0,082 m / s. The changes affect the time of withdrawal dies angle so that the speed of the drop on the dies were increased. The greater the angle, the greater the speed penarikanya. The amount of the average speed on the aluminum wire drawing dies angle of 12° is 0,050 m / s, and the magnitude of the average speed on the aluminum wire drawing dies angle of 14° is 0,056 m / s. It can be concluded that the withdrawal parameters give effect to aluminum wire drawing speed. The greater the angle on the dies, the greater the speed of withdrawal is obtained. Tensile test results showed that the angles 12 and 14 have the same value ang fuyes 2.80 kN, at an angle of 12 can be seen that the value of  $F_y$  has the highest value of 2.70 kN at an angle of 14 with a value of 2.60 kN. Stress and strain can be seen that the tensile strength values angle 12° and 14° had a tensile strength The same is 396.31 Mpa. On the yield strength can be seen that the angle of 12 higher the value is 382.16 MPa of at an angle 14 with a value that is 368.01 Mpa.*

**Keywords:** Parameter Withdrawal, Withdrawal Speed, Wire Drawing, Tensile Test, Aluminum.