

INTISARI

Penelitian ini bertujuan untuk mengetahui kekuatan tarik, kekerasan dan struktur mikro baja V155 VCN 150 sebagai fungsi perlakuan panas.

Kekuatan tarik baja tersebut dapat diketahui dengan melakukan uji tarik. Kekerasan diperoleh dengan uji Vickers. Sedangkan struktur mikro dapat diketahui dengan bantuan mikroskop metalografi. Perlakuan panas yang dilakukan meliputi quench dan temper. Proses quench dilakukan pada suhu 850°C selama 60 menit dengan media pendingin oli. Proses temper dilakukan pada suhu 300°C dan 600°C selama 60 menit.

Hasil penelitian menunjukkan bahwa tegangan tarik benda uji mula-mula : $159\text{ (kg/mm}^2\text{)}$, benda uji yang di quenching : $253,5\text{ (kg/mm}^2\text{)}$, temper 300°C : $203\text{ (kg/mm}^2\text{)}$, dan temper 600°C : $132\text{ (kg/mm}^2\text{)}$. Kekerasan benda uji mula-mula : $345\text{ (kg/mm}^2\text{)}$, benda uji di quenching 850°C : $492\text{ (kg/mm}^2\text{)}$, benda uji di temper 300°C : $474\text{ (kg/mm}^2\text{)}$, benda uji di temper 600°C : $248\text{ (kg/mm}^2\text{)}$.

Semakin tinggi suhu tempering (sampai 600°C), butiran bahan semakin kasar (besar) sehingga tegangan tarik, tegangan patah dan kekerasan bahan semakin berkurang.

ABSTRACT

The purpose of this research is to find out the tensile strength, hardness and micro steel structure V155 VCN 150 as the function of heat treatment.

The power of tensile strength can be known by doing the strength testing. Hardness is got by Vickers testing. And micro structure can be find out by metalografi microscop. The heat treatment which be done is including quench and temper. The quench process is done on 850 °C for 60 minute long with cold lubricant media. The temper process is done on 300 °C and 600 °C for 60 minute long.

The result of the research shows that the tensile strength on the beginning is 159 (kg/mm²), the thing testing on the quenching is 253,5 (kg/mm²), the temper of 300 °C is 203 (kg/mm²) and the temper of 600 °C is 132 (kg/mm²). The hardness of thing testing on the beginning is 345 (kg/mm²), the thing testing on the quenching of 850 °C is 492 (kg/mm²), thing testing on the temper of 300 °C is 474 (kg/mm²), thing testing on the temper of 600 °C is 248 (kg/mm²).

If the temperature is getting higher (until 600 °C), the small part of the composition Will be more big and rugged then the tensile strength, fracture and hardness will be lack.