

## THE ESSENCE OF LAST TASK

ST-42 steel is kind of steel which product by PT KRAKATAU STEEL Indonesia, ST-42 steel, according to the carbon contained. It's a low carbon steel. It's about C 0,060 %. Because there are many kind of steel which circulate in the market especially Indonesia consist of a lot of kind of steel although in the one group. In the case is low carbon steel of course the production of course the production every factory will defferent with the other because the union of the element and the processing. According to that thing in this accuration, the writer accurate the fisis characteristic and ST-42 steel mechanic. The mechanic characteristic represented by draw and hard accuration. In different case the fisis characteristic represented by nikro structure test.

The accuration done in metalics laboratorium, machine engineering University of Gajah Mada. The draw accuration use servofolser machine, hard accuration use vikers methode anda the micro structure use metalurgrafi microscope, in this accuration the specimen that will tested devide to 4 condition there are :

Raw material, Quenching 870 °C, tempering 400 °C and tempering 600 °C.

From the result of this accuration, it can be abstract to 6 conclution, there are :

1. A normal condition specimen has a draw stress 50 KgF/mm<sup>2</sup>
2. The result of quenching process will exist an internal stress, it can effect ST-42 steel has hard and brittle characteristic.
3. The result of tempering process can be effect to the normality of steel structure. In this case internal stress which have done on the ST-42 steel, result of the quenching process will subtract. So that the steel have tame and breakable characteristic.
4. More quenching temperature will effect ST-42 steel more tame.
5. Choosing the quenching temperature and tempering according to the Fe-C diagram too more temperature will effect over heating so that will seem a hard grain on the micro structure photo result.
6. Because the contain of carbon 0,060 % ST-42 steel on the single condition is ferit inclusion have a light colour more dominant than ferit. Inclusion have a dark colours.