

Pengaruh hard chrome plating pada peningkatan kekerasan baja komponen kincir / Budi Setyahandana, Yohanes Eko Christiano

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Abstrak

ABSTRACT

High carbon steel generally has a high hardness but lower ductility. To obtain a hard and ductile material, surface hardening can be done on a low carbon steel. Surface hardening can be achieved by hard chrome plating. The objectives of this research were: (1) Conducting the process of hard chrome plating on low carbon steel, (2) Knowing the increasing of surface hardness of low-carbon steel after the plating process in time variations, (3) Knowing the increasing of surface hardness of the low carbon steel after the coating process in anode-cathode distance variations. The specimens was made of low carbon steel. The size of the specimen were 40 mm in length, 35 mm in width and 6.8 mm in thickness. The variables measured were: (1) Coating time (t), (2) The distance between the cathode and anode in the coating process (l). After the coating process completed, the specimen surface hardness was measured by Vickers Hardness Tester. The results showed that up to 532 HV, low carbon steel hardness increased linearly at increasing time plating. At 120 minutes plating, the hardness also increased linearly at current densities up to 1.05 amperes/dm². While at the current density of 1.1 amperes/dm², the hardness increased significantly higher.