

ABSTRACT

Wear on the piston due to the working conditions of the piston working friction. One way to strengthen the piston is by coating. Coating technique with thermal barrier coating method is widely used in the world of aviation, especially for the manufacture of turbines. In this study, hydroxyapatite has been successfully coated on the surface of the piston substrate using thermal barrier coating method with flame spray tool. To examine the characteristics and mechanical properties, the Scanning Elctron Microscope (SEM) scanning was performed to see the surface layers of the layers, the macro microscope to see the side cross section, the adhesion test to determine the adherence level of the coating and the thermal conductivity test to determine the extent to which the coating is able to withstand the temperature. The test results show that the coating with temperature preheating 300°C has a thickness of 0,29 mm, good micro structure, diffusion evenly, good adhesion level (Category 4B) and low thermal conductivity and able to withstand heat well enough. The resulting thermal resistance value of 8,10 K / w.

Keyword : Piston, *hydroxyapatite*, *Flame Spray*, *coating*

