One of the widely used powder metal materials in automotive industry, which is copper steel FC 0205 (Fe + 2% Cu + 0.5% C), was used in this study. The pressed samples have been prepared at the compression pressure of 680 MPa and sintered in conventional furnace at 1120°C for 30 minutes. The samples with 7 Mg/m³ densities were used for fatigue and shot peening processes. Shot peening was applied with 20A and 32A, and the others were not peened. Plasma nitrocarburizing process was performed at 555°C for 2 hours under 600-900 Pa pressure. Fatigue tests were conducted at room temperature on a rotating bending type fatigue test device. It was determined that shot peening should be used where increased fatigue strength is needed, and plasma nitrocarburizing should be preferred where surface hardness is required, and plasma nitrocarburizing after shot peening process is much more useful.