BRAZING OF INCONEL 600 BY ACTIVE FILLER METAL

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Abstract: Inconel 600 alloy was brazed at three (3) different brazing temperatures, 830, 865 and 900°C for 30 minutes. An active filler metal, Ag-Cu-Ti, was utilized to study its effects on bonding strength by the diffusion of some elements with Inconel 600 during brazing. The experiment was carried out in a high vacuum chamber at $1x10^{-4}$ Pa. SEM-EDS and EPMA analysis was conducted for element identification and a shear test served to evaluate the bonding strength. The results show that good bonding was achieved and two continuous reaction layers were formed in the brazed area. The reaction layers were crossing in the middle in most areas at 865°C compared to 830°C and 900°C. It was revealed that a stronger Ti-Ni interaction than Ti-Cu influenced the formation behavior of reaction layers and the highest shear strength identified was at 865°C.