

Figure 13: Penetration and sliding values under different trials.

A typical example of friction welded AA70720-T6 and Ti 6Al-4V alloy is shown in figure 14. The aircraft rivets were made of Ti 6Al-4V alloy and AA7020-T6. The friction welding was carried out using the experimental conditions of trial 9.

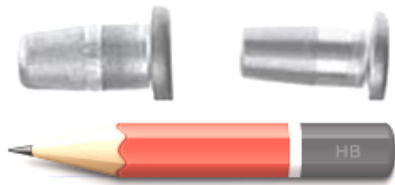


Figure 14: Friction welded aircraft rivets

4. Conclusions

This study shows that the AA7020-T6 and Ti 6Al-4V alloy is good if the operating conditions: frictional pressure of 35 MPa, frictional time of 4 sec, rotational speed of 1500 rpm and forging pressure of 31.25 MPa. For friction welding of AA7020-T6 and Ti 6Al-4V alloy, the forging pressure should be less than the frictional pressure or equal. For this condition of welding there was good penetration and sliding

of materials at the welding interface resulting a good mechanical bonding. It is also recommended that the welded parts must be stress relieved using appropriate heat treatment process.

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