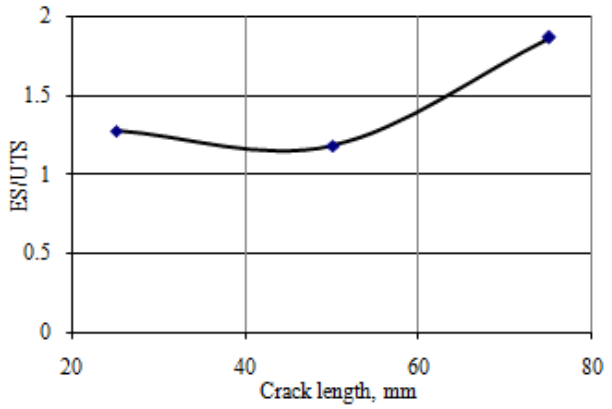

Figure 7: Effect of crack length on the failure criterion

The effect of crack length on the failure criteria is shown in figure 7. The failure of pipes was high at crack length of 75 mm. The failure of pipes having crack lengths of 25 mm and 50 mm was not much invariant. The failure was minimal for the pipes undergone the heat treatment T6 (figure 8). The optimum conditions of test coupon 5 would satisfy the failure criterion (ES/UTS = 0.997 <1.0) while all other conditions were failed to satisfy the failure criterion.

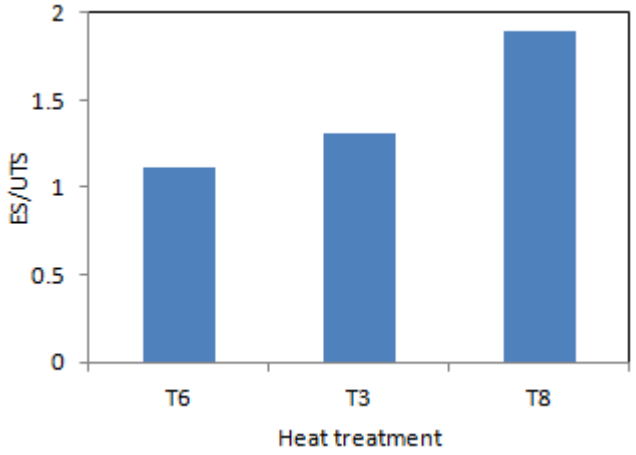

Figure 8: Effect of heat treatment on the failure criterion.

4. Conclusions

The failure of pipes increases with the increase of crack length. The failure of pipes under bursting pressure was low for the pipes heat treated with T6 conditions.

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