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Induction Hardening and Fatigue Strength

Masao SHIMIZU*

An experimental investigation was undertaken to study the fatigue crack propagation in an induction hardened V notched steel specimens (0.16%C).

The results obtained may be summarized as follows;

- (1) The state of crack propagation can be interpreted by using the concept of the stress σ at the cracktip under the presence of the residual compressive stress.
- (2) The effect of the presence of the residual compressive stress on the crack initiation is smaller than that on its propagation.
- (3) Furthermore, the crack propagation rate of the specimens subjected to the varying stress amplitude in two or three stages was studied. It appears that the crack propagation rate depends upon its stress history and is accelerated by varying the stress amplitude.

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