

## Cyclic Heating Effect on Hardness of Copper

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**Abstract :** Presented work discusses research results concerning the effect of the heat treatment process. Thermal fatigue which expresses repeated heating and cooling processes affect the ductility or the brittleness of the material. In this research, 70 specimens of copper (1.5 mm thickness, 85 mm length, 32 mm width) are subjected to thermal fatigue at different conditions. Heating temperatures  $T_h$  are 100, 300 and 500 °C. Number of repeated cycles N is from 1 to 100. Heating time  $t_h$  = 600 Sec, and Cooling time;  $t_C$  = 900 Sec. Results are evaluated and then compared to each other and to that of specimens without subjected to thermal fatigue.

**Keywords :** copper, thermal analysis, heat treatment, hardness, thermal fatigue

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