Mechanical Properties of Boronized Fe-0.94%Mn Binary Alloy

Adnan Calik[a], Osman Sahin[b], Ali Ercan Ekinci[c], and Nazim Ucar[b]

[a] Department of Mechanical Education, Technical Education Faculty, Suleyman Demirel University, Isparta, Turkey
[b] Physics Department, Art and Science Faculty, Suleyman Demirel University, Isparta, Turkey
[c] Physics Department, Art and Science Faculty, Erzincan University, Erzincan, Turkey

Reprint requests to N. U.; E-mail: nazmucar@yahoo.com

Z. Naturforsch. **62a,** 545 – 548 (2007); received April 20, 2007

Fe-0.94%Mn alloys were boronized at 1210 K during 4 h by the powder pack method. Three distinct regions of cross-sections were found in such alloys. The boride layers were characterized by means of microscopy in terms of coating morphology and thickness. The hardness and thickness of the boride layers were measured, and it was observed that they depend strongly on the thermal processes performed before boronizing the alloys.

Key words: Binary Alloys; Thermal Process; Boronizing; Boride Layer; Microhardness.