

3rd Euro Congress on

STEEL AND STRUCTURAL ENGINEERING

November 16-17, 2017 | London, UK

Effect on the formation of boride layer of increasing amount of niobium in pack boronizing of iron niobium binary alloys

Eyyüp Murat Karakurt and Tanju Teker
Adiyaman University, Turkey

In this study, Fe-1Nb, Fe-5Nb Fe-10Nb (% wt.) binary alloys were boronized at 1050 °C for 3 hours. Effect on the formation of boride layer of increasing amount of niobium in pure iron was experimentally investigated. After the boronizing process, microstructural changes occurring on the surfaces of the samples were examined by optical microscope (OM), and microhardness and thickness of the boron layers were determined separately for each sample. Typical sawtooth morphology was observed on the all boron layer. As a result, all boron layer hardens were much higher than base material. In addition, it was found that boron layer thickness decreased with increasing niobium content in pure iron.

tteker@adiyaman.edu.tr
ekarakurt@adiyaman.edu.tr