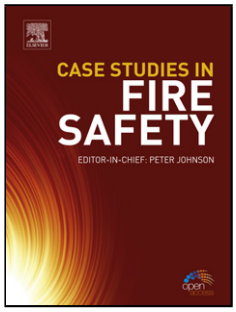


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# Thermal growth of exclusive alumina scale on a TiAl based alloy: Shot peening effect

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## Highlights

1. Shot peening produced a deformation zone on the top of a TiAl based alloy.
2. $\gamma/\alpha_2$ lamellar structure was collapsed and grains refined in the deformation zone
3. Shot peening catalyzed formation of a submicron-thick $\alpha$-$Al_2O_3$ film.
4. The prior $Al_2O_3$ formation prohibited Ti of the alloy from oxidation at 900 $^oC$.

## Abstract

Shot peening, although generally accepted as a useful surface treatment method to improve oxidation resistance of Ni-, Co- and Fe-based alloys, has been less applied to