

## ABSTRACT

The work contains 91 pages, 31 figures, 26 tables, 29 references to the literature data.

The aim is to study high-energy impact on the plate termotsyklovanoho composite titanium.

Research methods:

- a) study the microstructure;
- b) the research phase composition.

Object of study - composite Ti-Si-Al-Zr.

The work conducted experimental studies of high exposure to the plate termotsyklovanoho composite titanium.

It was established that after high-impact on plate alloy in the latter formed crack.

Thus according to a local X-ray analysis in the cracks observed occurrence of the following phases:  $\beta$ -Those crystal lattice is dissolved Sn, Si, Al; SiC (Ti, Sn, Al); Fe as iron oxide. TiSi<sub>2</sub> is phase component alloy, SiC has got a crack in the preparation grindin as abrasive particles, and Fe and Pb - as components of high impact.

Keywords: **SILICON TITANIUM, THERMALCYCLING, COMPOSITES, PHASE, OXIDE, HIGH-IMPACT.**