

ESTIMATED STRENGTH OF BURSTING STUD OF THE LANDING EXPLOSIVE DEVICE VPU-82

*A. G. Neskin, V. V. Dotsenko, O. Yu. Zhabunina, Yu. Yu. Lushina,
O. A. Bychkov, A. N. Maloyaroslavtsev*

FSUE «RFNC – VNIITF named after Academ. E. I. Zababakhin», Snezhinsk, Russia

In testing the mockup of the landing explosive device VPU-82 the bursting of the stud occurred beyond the predicted region, i. e. beyond a special groove.

The conducted analysis showed that the effort applied to the taper part of the stud exceeded the strength potential of the D16 material.

To ensure bursting of the stud in the region of the groove, calculations were performed with a modified stud design. The following parameters were considered: changing the diameter of the waist, changing the angle of the stud taper, expanding the area of contact between the stud taper and the holder, introduction of a ring into the contact area, replacing the stud material, and changing the effort applied to the bursting stud.

The finite-element study of the strength of the stud and the holder under the tensile loading allowed determining the effort to burst the stud in the region of the groove and giving recommendations to modify the stud design.
