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The work purpose is to analyze high-speed straining the sandwich members at the elastoplastic stage under contact impacts. The member consisting of two thin layers from the titanium alloy and the inner ceramic layer is examined. The impactor is modeled as an elastoplastic body. The local impact results in variable straining by the time and spatial coordinates in a limited region. Thus, each layer of the member is examined in the 3D statement. The simulation uses a dynamic version of the straining theory of plasticity, which takes into account the dependences of the stress intensities on the strain intensities and their rates. In so doing the dynamic properties of different materials for each layer are considered. The problem is a geometrically and physically nonlinear. The special features of the dynamic stress-strain state of all layers of the member are revealed using the finite element method. The results are used to improve the dynamic strength of the protective members.

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