

**THE CALCULATION OF SHELL TYPE  
THIN-WALLED COMPOSITE CONSTRUCTIONS**

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The purpose of this work is to investigate the estimation of composite plastic shell's carrying ability, for which are adapted such construction of shells, which are subjected to the ideally plastic-rigid model of diagram "stress-deformation". For a period of a last half century the efforts of engineers and scientists were directed toward overcoming shortcomings in the constructions of those concluded from the basic building materials, the large dead weight and the significant labor expense of their assembly. The cardinal solution of the problem concerning reduction in the labor expense of assembly is to come over to the composite constructions, as far as the decrease of dead weight is concerned, it is achieved by the use of three-dimensional constructions of the type of shells.

The wide use of composite shells places to the urgent the research of the methods of their scientifically substantiated correct calculation both in the elastic stage and beyond elastic limits.

During the investigation of the bearing capacity of composite shells it is assumed that the separate elements are linked by the longitudinal and cross connections (hinges), the lines of arrangement of which coincide with the lines of principal curvatures. At the points of the arrangement of hinges the first-order derivative of sagging undergoes first-kind discontinuity and the bending moments are equal to zero.

The design diagram indicated can occur to the complete casting of the welds between the composite elements in the process of installation.