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# The analysis of sensitivity in the design of composite dimensionally stable space structures

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*The analysis of sensitivity is the integral part of developing the constructions with high structural perfection. In the case of dimensionally stable composite space constructions it is important to select the structures with low sensitivity to the deviations in the properties of layer materials and the deviations in structural-technological parameters. Based on perform analysis of sensibility one can reasonably assign the requirements for on-receipt inspection of the material and the system of tolerances and limit deviations. The author of the paper derives the formulas for the conditions of non-sensibility to the deviations in material properties for common composite structures. The results of the study are presented on the potentials to combine the requirements of dimensional stability and non-sensitivity. The estimation is given on the appearance of dangerous shear deformations under heating-cooling of laminated composites due to inaccuracy of laying-out of individual layers. The recommendations are given for selecting composite structures for high precision space engineering constructions in which low values of the coefficients of linear thermal expansions are combined with low sensitivity to various deviations.*

**Keywords:** *composite, dimensional stability, space constructions, sensitivity*

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