

## The Accounting of Surface Roughness in Contact of Arbitrary Shaped Bodies Using FEM

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A universal method of accounting the surface roughness in contact of arbitrary shaped bodies using finite element method is developed. "Load – approach of bodies" and "load – real contact area" diagrams for several pairs of rough surfaces are obtained. The accounting elastic-plastic character of deforming is based on theory of yield. Results of contact problem solution for real bodies with rough surfaces are given. Finite element models of rough surfaces are based on real profilometric data. A contact of two small parts of bodies with nominally flat rough surfaces is considered in order to obtain dependence of bodies approach due to rough layer presence on a load value. The "load value – approach of bodies" diagram is approximated with simple analytic functions and then applied to compute contact parameters of the arbitrary shaped bodies taking into account the compliance of their rough surfaces.

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