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# RELIABILITY ANALYSIS AND SPECIFIC CHARACTER OF CALCULATING FLANGE CONNECTIONS OF THE SECTIONS OF SUBMERSIBLE PUMPS

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## Abstract

*The study tested flange connections of the sections of electrical submersible pumps and investigated the features of electrical submersible pumps for oil production. We determined the indicators of their reliability and analyzed the nature and failure causes of the equipment. We found that the reason for such failures as breaking up of the equipment sections in more than 30 % of cases is the break in flange connections of the sections. Moreover, we studied the problems of application and design of flange connections used for connecting the sections of an electric submersible pump. We revealed the possibility of additional loads that are not taken into account in the standard calculation and found that in the case of strength calculation of flange connections, it is necessary to additionally take into consideration the variable bending moment, which is caused by the arbitrary bending of the pump in the zone limited by the casing column.*

## Keywords

*Flange connections of sections, electrical submersible pump, reliability indicators, variable bending moment, strength calculation*

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