

Abstract

The growing oil demand requires the construction of new pipes of large diameters, to carry large quantities of oil and natural gas to consumers. This has led industrialists to manufacture high resistance steel tubes. On the other hand to increase the capacity of pipelines, it is necessary to increase the operating pressure. Ensuring high reliability of pressure pipes requires a significant increase in pipe wall thickness, and the development of high-quality rolled steels. In this context the choice of pipes for the construction of the oil transporting pipelines require a reliability approach, showing explicitly the dependency between increase in the pipe wall thickness and the pipelines reliability improvement. This issue is the subject of the current study, which is dedicated to the formulation and analysis of the problem, where by the methods of structures reliability and mathematical statistics, one determines quantitative indices of reliability of pipes which are used in comparing different variants in order to select the best solution. Such an approach allows specifying, at the projection and construction stages, the requirements of proper working of hydrocarbons transport pipelines