

Abstract

This dissertation was elaborated in cooperation with the manufacturer of stainless-steel tanks and tankers, PRO-WAM Sp. z o.o. with its registered seat in Koszalin, 278 Zwycięstwa St. The motivation to undertake research work presented in this dissertation were problems concerning the technological quality of components included in one of the key products of the company: semitrailers-tankers for liquid foodstuffs transport.

Chapter I is an introduction to the issues discussed in this dissertation. Chapter II presents the analysis of literature sources related to the subject of this dissertation. It ends with conclusions, which made it possible to specify the hypothesis, objective, research problems and to determine the scope of the work, which are then presented in Chapter III. Chapter IV contains a brief description of the semitrailer-tanker for liquid foodstuffs with the indication of the most important problems in the process of its manufacture related to cutting operations. Chapter V describes the experimental research methodology and gives the characteristics of the technological equipment and measurement systems used in the research. Chapter VI contains an analysis of the results of exploratory research concluded with conclusions making it possible to plan and carry out specific research, described in Chapter VII. The last part of the dissertation (Chapter VIII) contains a summary and conclusions from the dissertation divided into cognitive, utilitarian, methodical and conclusions for further work. The content of the dissertation is supplemented by a list of symbols and acronyms used in the text, a list of bibliographical sources used, a list of figures and a list of tables.

Extensive experimental research has shown that the proposed author's relationship for the synthetic *JTC* index can be successfully applied in the metal industry to compare the technological quality of the cutting process. The relative (percentage) form of the *JTC* index makes it possible to use it for comparing the results of the cutting process carried out by different methods and under different conditions.