

# **PRODUCT DEFECTIVENESS ANALYSIS USING METHODS AND TOOLS OF QUALITY ENGINEERING**

**BIAŁY Witold**

Silesian University of Technology, Faculty of Organization and Management,  
Institute of Production Engineering, ul. Roosevelta 26-28, 41-800 Zabrze, PL  
e-mail: [wbialy@polsl.pl](mailto:wbialy@polsl.pl)

**MARUSZEWSKA Ewa W.**

University of Economics in Katowice, Faculty of Finance and Insurance  
Department of Business Informatics and International Accounting  
ul. 1 Maja 50, 40-287 Katowice, PL  
e-mail: [ewa.maruszewska@ue.katowice.pl](mailto:ewa.maruszewska@ue.katowice.pl)

**KOŁODZIEJ Sabina**

Kozminski University, Economic Psychology Chair  
ul. Jagiellońska 59, 03-301 Warszawa, PL  
e-mail: [skolodziej@kozminski.edu.pl](mailto:skolodziej@kozminski.edu.pl)

**Abstract:** All production companies, regardless of the industry, face the problem of defective products. Removing the causes of the final product's defectiveness is connected with incurring additional costs, which reduces the efficiency of the production processes. That is why companies take measures to identify those causes which bear the most significance to ensuring the required product quality. The present article aims to indicate the tools of quality engineering that can be used to determine product defects and their impact on the quality of the final product. The article is based on a case study analysis of the example rock wool manufacturing company.

**Key words:** defect, production, production process, FMEA, Ishikawa diagram, Pareto chart, quality costs