

Mgr inż. Krzysztof Zając

Methodology for assessing the quality of evacuation chairs ensuring their safe use

Summary

The theoretical and empirical doctoral dissertation focuses on the development of a research methodology for assessing the quality of evacuation chairs to ensure their safe use. The architectural accessibility of buildings and the removal of barriers is a challenge that we face as a society today and will continue to face for many years to come. Effective management of assisted evacuation is crucial to the lives and health of people with special needs. The research methodology for assessing the quality of evacuation chairs aims to facilitate the selection of devices that will increase the speed of evacuation, enhance the evacuated person's sense of safety, and optimize the costs of implementing assisted evacuation for the facility manager. The goal was accomplished through the following steps:

- analysis of literature on assisted evacuation using various types of evacuation equipment and technical standards for similar products,
- expert survey aimed at gathering the opinions of people directly involved with evacuation chairs on a daily basis on new quality factors, with the calculation of the Kendall and Smith concordance coefficient,
- research, experiments, and tests conducted in real conditions and using software to simulate the movement of people during evacuation,
- analysis of aspects related to the costs of implementing assisted evacuation in a facility,
- development of a research methodology diagram.

The data collected during the research process enabled the development of a research methodology, new quality factors, and guidelines for the successful implementation of evacuation chairs in public buildings.

The implementation of the proposed methodology may contribute to better management of the evacuation process, thereby making it more efficient and effective. Furthermore, this methodology provides the product's manufacturer with the necessary guidelines to improve the quality of evacuation chairs and their individual components. The methodology also enables the facility manager to implement assisted evacuation from the building, considering the required costs and time.