

Measurement And Analysis of Lighting in A Selected Manufacturing Company*

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Abstract

Work environment factors indirectly, or more often even directly, affect the quality and efficiency of work processes. These include physical, chemical, psychophysical factors, and often hazardous factors are also distinguished. This paper presents the results of research into the measurement and analysis of lighting, which is a physical hazard in the work environment. The work is a continuation of research on physical factors in a selected production plant. Previously, research was conducted on noise measurement, as well as risk assessment of other workplace hazards. The motive of the study was to analyse the correctness of the lighting used in the workplace at the selected workstation and measures to improve the employee's working conditions in this respect. The subject literature, especially standards (primarily Polish) concerning lighting used in the workplace, clearly indicate how it should be applied and fully exhaust the theoretical scope of the work. However, it is important to determine whether the designed workstation meets these standards and whether, in reality—as theory dictates—they are sufficient to carry out work processes. In this paper, the scope of research included the measurement and analysis of lighting at the injection moulding machine operator's workstation using specialized research equipment - a luxmeter. The control results enabled better organisation of the workstation in terms of ergonomics and occupational safety, including the reduction of accidents, and consequently better work efficiency of the employee, and in a broader sense, the improvement of processes in the company. Additionally, the research results could be used to develop solutions for other companies in the sector with a similar profile of activity and similar workstations.

Keywords: lighting, light intensity, luminance, risk, working environment, hazards, occupational health and safety, workstation