

Assessment of Ergonomic Aspects of Respiratory Protective Devices

Krzysztof Makowski & Katarzyna Majchrzycka

Central Institute for Labour Protection
National Research Institute, Lodz, 90-133, Poland
Tel: +48 42 678 19 63 int. 32 Fax: +48 42 678 19 15
e-mail: krmak@ciop.lodz.pl

ABSTRACT

Efficiency of energetic processes of human being organism is only 20 %. That means that 80 % of energy turns into the heat and cause extra load to organism. This fact is especially important in environment with increased humidity and temperature, where cooling of organism is very difficult.

Carried out studies on ergonomic aspects of chosen respiratory protective devices proved that usage of RPD is always connected with the extra load of human being organism, especially when work is performed at the workplace where high temperature and humidity appear.

Existing standard test procedures of practical performance test in accordance with European Standards, do not contain any objective ways of measure of RPD usage comfort.

During the studies a new practical performance test method was worked out. The standard method was widen and the measurements of energetic expenditure and temperature under a facepiece were added. Tests were performed in different ambient temperature and humidity to assess effect of extreme climatic conditions on comfort of usage of RPD and their efficiency as well.

On the bases of obtained results hints and guidelines for users of RPD and for health and safety engineers have been also prepared.