ABSTRACT

Falling from a height is one of the most significant risks in the mining industry. The use of full body harnesses is essential to protect workers working at heights of more than 1.8 meters. However, the use of existing full body harnesses, such as the V-Line Harness with 4 D-Rings, often faces obstacles in terms of installation efficiency and convenience. Users need 3-5 minutes to install the harness and often have difficulty in manually adjusting the number of straps or ropes, which can result in an imbalance between the right and left sides of the harness. This complexity is further felt by novice users, who take longer to ensure that all straps are installed correctly and symmetrically. In addition, the absence of size markers on the straps adds to the installation challenge, potentially reducing flexibility of movement and increasing the risk of installation errors. To overcome this problem, this study proposes an innovation in redesigning a more efficient and ergonomic body harness by adding size markers on the straps. This innovation is expected to improve installation time efficiency and convenience, with a focus on the application of ergonomic principles that allow harness installation to be simpler, faster, and more symmetrical.
Keywords: efficiency, ergonomics, flexibility