

Developing a Construction Occupational Safety and Health Risk Assessment Matrix (COSHRAM) with Modifying Risk Factors

ABSTRACT

Common Risk Assessment Matrix (RAM) is universal and can be apply in any industries. The aims of this paper is to develop a Construction Occupational Safety and Health Risk Assessment Matrix (COSHRAM) which can ideally improve the risk action plan. A new element of modifying factors has been incorporated to systematically justify the residual risks. The COSHRAM was developed on the basis of historical accident data and data collected from the field survey. Six (6) Safety and Health Officer (SHO) divided into three (3) groups were selected to conduct field trials. Each group has conducted risk assessment using both common RAM and COSHRAM. Overall, three (3) types of activities, including twenty-one (21) sub-activities and fifty-nine (59) hazards have been evaluated. Paired t-test showed that result of the assessment between the common RAM and COSHRAM was significantly different ($t=17.083$, $p < 0.05$). Therefore, the COSHRAM is statistically acceptable and it resulted in better in terms of estimating the risks than the common RAM.

Keyword: Assessment matrix, Construction, Modifying factor, Residual risk