

Hand Related Injury Studies in Metal Fabrication Process Industry

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ABSTRACT

Objective: The purpose of this paper is to study and analyze hand injuries accident trend in a metal fabrication process company and recommend improvements. This is due to the alarming rate of hand injury accident recorded from 2012 until 2014, ranging from 33.3% to 37.5% from the total accident each year. **Method:** The methodology being used in this study is by conducting Risk Assessment, analyze Accident Data and Survey Questionnaire. Through Site Visit, Risk Assessment being conducted is to assess the metal fabrication process activities and identify the riskiest activities by calculating the risk rating, Accident Data is to define the hand injury rate and Survey Questionnaire being conducted is to measure the level of compliance and awareness of workers. **Results:** The result from Risk Assessment showed, the most critical activities expose to hand injury is Grinding, Welding and Metal Plate rolling. The results from the Accident Data, it showed the main contribution factors of hand injury accidents such as Human Factor, Workplace Environment and Machine. From the Survey Questionnaire result, it showed the worker's level of compliance towards safety rules in workplace is still reliable where the average compliance percentage for Human Factor is 72%, Machine Factor is 70%, Workplace Environment Factor is 78%, Management Factor is 73% and Personal Protective Equipment Factor is 76%. **Conclusion:** The main objective in reducing hand injury rate is strengthening through recommendation and proposal to develop Hand Safety Procedure and implement Risk Behavior Safety in fabrication process. Eventually, by mitigating safety risk of hand injuries in fabrication process systematically, it could give a significant impact to the organization in terms of their business opportunities, cost saving, shareholders' investment opportunities, workers perception, as well as to improve the productivity and quality of the product.

Keywords: Hand injury, Metal fabrication, Behavior safety, Risk assessment, Process industry
