

A Study on the Assessment of Heat Stress Among Filipino Workers

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Abstract

Maximum permissible limits must be set for the thermal severity of workplaces if men performing hard physical work are to maintain their thermal balance either throughout a working day or over the duration required for completion of a specified task. If the combination of workload and environmental heat is so great that thermal balance cannot be maintained, workers will become susceptible to heat collapse. Variation between men, workloads, and environmental thermal characteristics must be taken into consideration when recommendations are made of durations of exposure over which men will be protected from heat collapse. In workplaces with extremely high environmental temperatures, the skin surfaces and respiratory organs of workers may be subjected to extreme discomfort, pain or tissue damage. Adverse health effects on workers causing some disorders such as heat stroke, water deficiency, salt deficiency or heat cramps and heat rash. Limits must be placed on the duration of exposure or on the environments to be entered by unprotected men.

The study aims to determine the level of exposure of Filipino workers to heat stress in different manufacturing industries and to provide measures to reduce or prevent exposure.

Participating establishments from the study were chosen from companies who have availed of the Work Environment Measurement (WEM) services and studies done in the iron and steel industry conducted by the

Environment Control Division (ECD). The data for the heat stress evaluation were gathered from 1990 to 1998 heat monitoring of the industries. Chosen companies were located in Metro Manila and nearby region. Included in the survey were 110 companies undertaking different manufacturing process. Cooperating establishments include 76 foundries/metal industries, 3 glass, 2 batteries, 9 cement, 2 plastic products, 2 rubber, 1 appliance, 2 food, 1 automotive, 3 semiconductor, 3 consumer products, 2 chemical products, and 3 textile/garments industries.

Data gathering was conducted through interviews with employees and workers through administered questionnaire and the actual assessment of workers' heat load . Assessment of heat load was made by determining the wet bulb globe temperature (WBGT) index around furnaces, casting areas, foundry, molding areas, roll mills, oven and kettles. Prevailing work conditions, length of exposure time, heat control and type of workload were noted.

Based on the results of the study, heat levels in most areas measured showed that workers are exposed to very high environmental temperature, and thus, may possibly be suffering from different levels of heat stresses. Recommendations and control measures were presented to protect workers from such risks.