

0337 EVALUATION OF HEAT STRESS AND ITS CONTROL

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Heat stress is the sum of environmental and metabolic heat load on an individual. It considers the environmental (air temperature, thermal radiation, air velocity, humidity) and the personnel (metabolic rate, clothing) parameters. Heat stress experienced for prolonged period is a major risk for the workers. In an engineering industry, heat stress is experienced during the processes such as hardening by sealed quench furnace (SQF), fluidized bed furnace (FBF) and gas nitriding furnace (GNF). In order to minimise and control the risk imposed the environmental working condition shall be assessed, from which risk factor could be calculated. Finally, the areas of potential hazard could be found out. In order to evaluate the actual working condition, temperature and relative humidity are measured. Heat stress index table is arrived showing the apparent temperature which is the same as heat stress index (HSI). By using this heat stress index the heat map is drawn to determine the zones/ areas of more heat stress. In such zones, root cause analysis is conducted thereby finding the probable root causes. By this root cause analysis, risk analysis is to be conducted thereby finding the basic risks and the 6W+2H action plan is conducted for identifying where the control measures are required. The engineering control measures are to be implemented for the identified areas. In such areas, Hazard Identification & Risk Assessment (HIRA) is conducted thereby finding the residual risks would be identified by checking the effectiveness of the corrective and the control measures applied for the risks identified. The final solution for the residual risks would either be an administrative control or issue of appropriate Personal Protective Equipment (PPE). This is done to enhance the continual improvement of the system employed.