OCCUPATIONAL HEALTH MANAGEMENT PLAN

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# Executive Summary

This report is about developing an occupational health management plan for an occupational hazard. For this report, the organization chosen is G. James Glass and Aluminium, which is an Australian industrial organization that manufactures glass and aluminium products. The aim of the report was to develop an occupational health management plan for the identified occupational health hazard in the chosen workplace. The objectives included assessing and evaluating the type of work which might be subject to an occupational health hazard and developing an occupational health plan for preventing occupational health hazard in the workplace. It was found that an effective health management plan would help the workers to pass out from heat stress and maintain a healthy condition in the workplace. The management plan also includes preventive measures and immediate medical treatment for workers who suffer from heat stroke due to excessive heat stress. The plan for severe emergency situations has also been provided with detailed steps of the management plan.As the glass and aluminium manufacturing industry is such a vulnerable job for workers, implementation of such a health management plan is necessary to ensure the safety and security of the workers.

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# Industry or Organisation Name

The organization chosen for the project report is G. James Glass and Aluminium, which is an Australian industrial organization that manufactures glass and aluminium products. This type of manufacturing industry is chosen for the report, as continuous exposure of workers near the furnace can lead to heat stress which is a severe occupational hazard and needs to be dealt with further studies and health management plan for preventing future hazard situations.

# An Introduction

As mentioned earlier, the chosen industry for the research topic was done to evaluate the effect of heat stress on workers working near blast furnaces for a considerable period. Such extreme exposure to heat from the furnace can have a significant physical and physiological effect on the workers, and they can pass out from the heat stress (Zander et al. 2015). Cardiac arrest and breathing problems can accompany the passing out and require immediate medical treatment due to its fatal consequence.

## Aim

The aim of the project review is to develop a coherent occupational management plan for the identified occupational health hazard in the chosen workplace.

## Objectives

* To assess and evaluate the type of work which might be subject to an occupational health hazard.
* To create an occupational health plan for reducing occupational health hazard in the workplace.

In this report also a comprehensive risk management plan has been provided which helps to prevent any future health risks and identify other significant risks to occupational health hazards.

# Definitions

***Heat Stress:*** Heat stress can be defined as the body’s inability to cool itself for maintaining a healthy internal temperature through sweating and can result in medical condition like rash, cramps and even fatal conditions like heat stroke.

***Occupational Health Hazard:*** Occupational health hazard can be defined as any type of medical conditions of the health that occurs in the workplace due to workplace environmental or due to the work type or pressure performed by the individual (Chan & Yi, 2016).

***Health Management Plan:*** The health management plan is a plan implemented by the organization management to prevent any occupational health hazard or procedures to take the right actions in case of any health hazard in the workplace.

# Workplace Demography

The glass and aluminium factories of G. James Glass and Aluminium Company are like conventional glass factories that have multiple blast furnaces and other expansion tools to shape the molten glass to the desired design. The glass workers work for 6-8 hours every day in the exposure of the heat from the furnace, which can cause fatigue due to the extreme heat. Currently, the company has around 2500 workers in their factories and might be subject to occupational health hazards. Almost all the workers are male, aged between 30-55 and is from a lower-middle-class background. All the workers are experienced in their job with most of them working for more than 7 years in the company. Due to their 8 hrs of duty every day, they are exposed to the furnace heat for at least 5 hours which is a significant amount of time that they are exposed to health hazards related to heat stress.

# Assessment of Risk

In order to prevent any future occupational health hazard, the assessment of risk is necessary to understand the cause of the hazard and why a health management plan is necessary to prevent any future hazardous incidents. The main reason for heat stress in the glass manufacturing industry is the prolonged exposure to extreme heat from the furnace for 5 days a week with 5-6 hours every day. The work practices are performed as per the industrial guidelines and protocols, and the materials used are not of much concern. However, it is the type of work and the environment that makes the occupation subject to health hazards. As the factories contain multiple blast furnaces, the external environment of the workplace is always above 40-45° C, which makes it unideal for work (Chan et al. 2012). Moreover, the glass needs to be shaped directly after bringing out of the furnace in its molten form; workers must remain exposed to the extreme heat during their duty hours. This causes them to get heat stressed, which can have minor medical conditions like rashes and muscle cramps to severe conditions like heat strokes, which can be fatal if not taken into immediate medical treatment. Such disastrous consequences make it such a significant issue in the glass and aluminium manufacturing industry and the organization requires a health management plan to deal with any future health hazards (Xiang et al. 2015).

The risks arising from the hazard may include a reduction in work productivity, increasing employee turnover, inability to work in the manufacturing industry, minor medical conditions and even death. These risks are assessed with the help of the risk management plan that monitors the workers suffering from occupational health hazards in the workplace and determines what preventive measures can be taken to mitigate the risks.

The organizations dealing with manufacturing glass and aluminium products have a legal obligation to protect its employees from any type of occupational hazard and provide them with medical insurance in case any worker suffer from occupational hazard. Legal policies and regulations are stated clearly to employees who join work and contractual agreement about health insurance, and medical treatment expenses are signed between them before recruiting workers (Hajizadeh et al. 2016). Moreover, as workers are the asset of manufacturing organizations, it is ethical to take care of their health and safety in the workplace and provide any expense or compensation in case they suffer any physical or psychological damage in the workplace.

The management of the organization requires an effective health management plan that would help the workers to pass out from heat stress and maintain a healthy condition in the workplace. The management plan also includes preventive measures and immediate medical treatment for workers who suffer from heat stroke due to excessive heat stress.

# Critical Review of Relevant Literature

Previous studies have shown that chances of risks have been increased for those workers who worked in front of furnaces and consume heat for long time. The consequences of such prolonged exposure to heat can be occupational illnesses and injuries. Steffen et al. (2012) state that, several dangerous of life threatening accidents can occur such as heat stroke, heat rashes, heat exhaustion, heat cramps due to heat stress, Other additional risks of injuries are also increased as high temperature in the workplace can cause sweaty palms, dizziness and fogging of the safety glasses, which can result in slipping of tools and misplacement of products. Moreover, it can also cause burns if the worker accidentally touches any hot surface or steam. The risk of heat stress is common for both indoor and outdoor workers who work in a hot environment like factory workers firefighters, miners, bakery workers, etc. (Singh, Hanna & Kjellstrom, 2013). As prevention of heat stress is essential for workers, organizations and employers worldwide provide training sessions for workers about the concept of heat stress, how it affects the safety issue of the workers in the workplace and what preventive measures can be used to mitigate them.

The policies, procedures and interventions used by G. James Glass and Aluminium company to prevent occupational health hazards related to heat stress are mentioned below.

* Use of Air-Conditioning in break rooms for workers to reduce their body temperature between work.
* The increased amount of ventilation in the factories.
* Installing a maximum number of cooling fans and the local exhaust ventilation system near the blast furnace to keep the temperature of the workplace as low as possible.
* Use of reflective shield on sides of the furnaces to redirect radiant heat.
* Insulating the furnace walls to prevent burns if workers touch by mistake.
* Checking and preventing any steam leaks within the factory workplace.

# Management Plan

The organization requires a new proposal of a management plan to prevent any potential risks from the occupation health hazard and take appropriate actions during any hazardous scenario. The preventive measures of avoiding heat stress are listed below.

***Pre-hydrating Workers:*** The organization can develop a protocol for workers that would make it compulsory for them to intake 16 ounces of fluid before starting their work and then continue to drink 8 ounces of fluid every 20 minutes of their work.

***Providing Flavoured Water:*** As plain water can quench thirst very quickly, and workers might not drink adequate water to prevent heat stress. Providing flavoured water in the break rooms would make workers drink more amount of fluid.

***Prevention of hat:*** As wearing hat can restrict the loss of heat through the head, preventing any head guard or hat in the workplace would help to cool off the body temperature of the workers quickly due to increased radiation.

***Synthetic Fabric for Uniform:*** Making a policy to wear loose and thin synthetic fabric in the workplace or providing such uniforms would allow workers to release excessive body temperature quickly.

However, apart from these preventive measures, the organization also needs to arrange for immediate medical treatment if any worker passes out from severe heat stress or suffer heat stroke. As delaying too much might cause the death of the worker, arranging for first aid treatments, ambulance service and availability of nearby hospitals is also essential for preventing such severe scenarios. However, these plans are only for emergency situations when prevention of health hazard is not possible. The organization will also arrange for a training session for employees on how to react in case one of their employees suffer from a heat stroke (Sana, Bhat & Balkhi, 2013). The detailed procedures for such cases are mentioned below. The training sessions can be held twice every week.

# Emergency Response

In case of an emergency, the other workers would immediately stop their work and inform the factory in-charge who would then arrange for the ambulance to take the affected worker to the nearest hospital as soon as possible. The other workers in the meantime can arrange for some first-aid treatment to improve the health of the affected worker.

| **Organisation Name** | **Contact** | **Title** | **Phone number** |
| --- | --- | --- | --- |
| **ALL** | Factory In-Charge | To report the emergency of the situation | **000** |
| **State Emergency Services (SES)** | Operator for state emergency service | Ask for any emergency help | +61 132500 |
| **Police** | Operator for the nearest police station | Ask for police intervention | *(02) 6131 3000* |
| **Fire** | Operator for nearest fire department | Ask for fire department intervention | *+61 8 8204 3600* |
| **Ambulance** | Operator for nearest ambulance service | Ask for an ambulance | *+61 2 8396 5141* |

| **Procedures** | **Brief Outline of Procedures** | **Evacuation Point/ Address** | **Reference to Full Procedure Document** | **Supporting Documentation** |
| --- | --- | --- | --- | --- |
| *Taking a worker suffering from heat stroke to the nearest hospital* | *1. Stop all work and contact factory in-charge.**2. Provide first aid treatment to the affected worker.**3. Wait for the ambulance to arrive.**4. Stay calm and put the affected worker in the ambulance.**5. Reach the nearest hospital.**6. Admit the affected worker in the emergency ward.* | *Any nearby hospital with the emergency ward.* | *Taking worker suffering from heat stroke to the nearest hospital.* | *Emergency procedure chart for heat stroke.* |

# Office Building Evacuation Plan

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# Evaluation

With such a robust emergency procedure, the organization would be able to deal with any sort of occupational health hazard scenario caused due to heat stress in the glass factories. Such methods would ensure the safety of workers and increase their loyalty towards the organization and increase their overall productivity.

Documenting any hazardous situation in the workplace from time to time and monitoring the duty hours through CCTV would help to carry out the plan successfully.

The evaluation of preventive measures of workplace hazards can be determined with the help of a survey of the workers, keep track of the number of injuries in the workplace and using work data of the organization.

# Conclusion

The project report provides a conclusive view of the occupational health hazards that might occur in the glass manufacturing industry and preventive measures to mitigate them. The plan for severe emergency situations has also been provided with detailed steps of the management plan. If pursued properly, this management plan can prevent any future risk related to heat stress in the organization. As the glass and aluminium manufacturing industry is such a vulnerable job for workers, implementation of such a health management plan is necessary to ensure the security and safety of the workers.