Heat Stress Assessment in Aluminium Smelting: Making it work in a challenging and changing climate

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Abstract
Abstract presented at AIOH 2016, 3-7 December 2016, Gold Coast, Australia.

Keywords
changing, challenging, climate, work, assessment, making, smelting:, aluminium, heat, stress

Disciplines
Education | Social and Behavioral Sciences

Publication Details

This conference paper is available at Research Online: http://ro.uow.edu.au/sspapers/2762
Workers in occupational settings are often exposed to high levels of heat which can be compounded by process generated heat and the climatic region in which the industry is located.

This paper outlines the process that was undertaken to characterise the thermal environment within the Reduction Line of an aluminium smelter, determine the potential for heat strain and evaluate the status of a group of employees working in this environment using a modern approach to physiological measurement.

The data collected as a part of this study enabled us to identify gaps in our standards, determine the best methods for collecting data in our challenging work environment and identify those tasks and roles at risk.

Planned follow up work will entail a complete review of our heat stress monitoring policy and standards and the introduction of practical and sustainable controls on the work front to eliminate and or reduce the risk of heat strain for employees working in high risk areas.

The potential for processes within this industry to change further as the industry is challenged moving forward is without question. These changes must be managed whilst operating an aluminium smelter in the current economic climate.