

Sanansil Seetammee 2007: A Study for Furnace Heat Reduction in Leaf Spring Plant.
Master of Engineering (Safety Engineering), Major Field: Safety Engineering,
Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor
Chawalit Kittichaikarn, Ph.D. 86 pages.

The purpose of this thesis is to study the heat transfer from the steel furnace to the surrounding workplace in Leaf Spring manufacturing factory using computation fluid dynamics program. Results obtained leads to an improvement of the heat source by using suitable insulation

It has been shown from the result that the furnaces, heat ventilation ducts and work pieces on the table next to the furnaces are the main heat source. The improvement has been achieved by installing fiberglass sheet on the wall of the furnace and on heat ventilation ducts. Moreover for the third furnace, the 100 mm. thick fiberglass sheet was installed at the inner surface of the furnace. This improvement gave a reduction in air temperature around the workplace from $50^{\circ}C$ down to $39^{\circ}C$. This value is lower than $45^{\circ}C$ which are critical and unsafe temperatures for the workers. Therefore with the low temperature of air around the workplace gives an increase in work efficiency and comfort to the workers.

Student's signature

Thesis Advisor's signature

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