Effects of the Air Supply Outlets Geometry on Human Comfort Inside living Rooms

By

Eng. Taher Mohamed Abou-deif Ismail

A Thesis Submitted to the Faculty of Engineering at Cairo University in Partial Fulfillment of the Requirements for the Degree of DOCTOR OF PHILOSOPHY

In

MECHANICAL POWER ENGINEERING

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Under Supervision of

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Approved by the Examining Committee

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Title of Thesis: Effects of the Air Supply Outlets Geometry on Human Comfort Inside living Rooms.

Key Words: (living rooms -thermal comfort -ADPI – Shapes of supply and extracts openings)

Summary:

The ratio (Tv/L) can be used to predict the Air Diffusion Performance Index (ADPI) and expected occupant comfort for a number of different types of air supply outlets.

In the current ASHRAE Handbook Chapters on room air distribution, ADPI, using the ratio of Tv/L, is the recommended method to predict the percentage of points within a space that meet the effective draft temperature criteria for comfort.

The Objective of the current study is to validate the current Tv/L and corresponding ADPI values currently presented in the ASHRAE Handbook,and
Develop Tv/L and obtainable ADPI values for other types of air supply outlets.

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