DIPLOMA THESIS EVALUATION

Student´s name and surname: Dereje Yihun Amare

Name of the diploma thesis: Heat transfer in horizontally oriented enclosure

Supervisor of the thesis: *Doc. Ing. Jaroslav Šulc, CSc.*

1. Diploma thesis evaluation

Evaluation	excellent	excellent minus	very good	very good minus	good	failed
Meeting the goal and fulfilling task of the thesis	X					
Quality of conducted survey		X				
Methodology of solutions	X					
Expert level of the thesis	X					
Merit of the thesis and its potential applicability of results		X				
Formal and graphic level of the thesis		X				
Student´s personal approach	X					

*Mark **x** in the corresponding box.*
Supervisor´s final evaluation is based on his/her overall subjective evaluation.
Grading is stated literally in the article no. 5, neither by a number, nor by a letter.

2. Comments and remarks on diploma thesis:

The presented diploma thesis deals with the heat transfer in rectangular, horizontally oriented air enclosures. The declared goal of the work, which was to determine the effective emissivity of horizontal surfaces delimiting the air cavity with vertical walls marked as re-emitting, was achieved. The calculated effective emissivities for three different materials of the horizontal surfaces were derived from experimentally determined thermal conductivities of air enclosures for uniform distribution of emission angles for different thicknesses of air enclosures. This solution introduced an error into the value of effective emissivity caused by the fact that the angular dependence of emissivity of real horizontal surfaces was not taken into account when determining view factors in calculating the actual space resistances for individual thicknesses of the air layers of the enclosure.

 In order to achieve the above-mentioned goal of his diploma thesis, Mr. Amare had to get acquainted in detail with the mechanisms of heat transfer by radiation in enclosures to an extent significantly exceeding the scope of lectures.

I have some t formal comments on the submitted work: - Equation 9, page 22, expressing the radiant flux from the surface A1, contains the quantity J - radiosity - which, however, is defined on page 24, - it would be more appropriate to change the order of Fig. 17 and Fig. 18, -page 40 instead of x=0.0673 and

$y=2.48702 \cdot 10^{-4}$ should be $a=0.0673$ and $b=2.48702 \cdot 10^{-4}$, - additional explanatory texts under Figs. 17 and 18 are interchanged.

3. Questions about diploma thesis: 1. Explain meaning of "space resistance".
2. How the maximum emission angle ANM (I) for individual heights of the air enclosure was determined?_

4. Supervisor´s statement on results of the inspection carried out by the anti-plagiarism program in the STAG system: similaryties with < 1%

5. Supervisor ´s grading of the diploma thesis: excellent minus

Date:16. 06. 2021, in Liberec

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Supervisor´s signature