

## **Thermal Comfort Study of School Buildings in South Minahasa Regency Case Study: SMA Negeri 1 Amurang, Indonesia**

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**Abstract :** Thermal comfort inside a building can affect students in their learning process. The learning process of students can be improved if the condition of the classrooms is comfortable. This study will be conducted in SMA Negeri 1 Amurang which is a senior high school building located in South Minahasa Regency. Based on preliminary survey, generally, students were not satisfied with the existing level of comfort, which subsequently affected the teaching and learning process in the classroom. The purpose of this study is to analyze the comfort level of classrooms occupants and recommend building design solutions that can improve the thermal comfort of classrooms. In this study, three classrooms will be selected for thermal comfort measurements. The thermal comfort measurements will be taken in naturally ventilated classrooms. The measured data comprise of personal data (clothing and students activity), air humidity, air temperature, mean radiant temperature and air flow velocity. Simultaneously, the students will be asked to fill out a questionnaire that asked about the level of comfort that was felt at the time. The results of field measurements and questionnaires will be analyzed based on the PMV and PPD indices. The results of the analysis will decide whether the classrooms are comfortable or not. This study can be continued to obtain a more optimal design solution to improve the thermal comfort of the classrooms. The expected results from this study can improve the quality of teaching and learning process between teachers and students which can further assist the government efforts to improve the quality of national education.

**Keywords :** classrooms, PMV, PPD, thermal comfort

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