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(出版者 / Publisher)

Japan Climatology Seminar

(雑誌名 / Journal or Publication Title)

Japanese progress in climatology / Japanese progress in climatology

(巻 / Volume)

2015

(開始ページ / Start Page)

44

(終了ページ / End Page)

44

(発行年 / Year)

2015-12

Indoor Temperature and Humidity in Temporary Housing built at Miyako City in Iwate Prefecture following the Great East Japan Earthquake

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Indoor temperature and humidity were observed for almost two years, from March 2012, in temporary housing built at Miyako City in Iwate Prefecture following the Great East Japan Earthquake. Average diurnal variations in temperature and humidity were compared between different types of vacant temporary housing and were examined in temporary housing an elderly person lives. Indoor daytime temperatures in temporary housing of light-gauge steel structure with exposed and non-insulated iron beams were 1.7—3.4 Celsius colder in winter and approximately 1 Celsius warmer in summer than in wooden temporary housing, resulting in large diurnal temperature range. Furthermore, in this type of temporary housing, the temperature of the iron beams in daytime was higher and the temperatures of the floor face in daytime and the iron beams at night were colder than indoor temperature in winter and summer. Compared with other types of temporary housing, relative humidity was higher throughout the day, and there was a 50% increase in hazardous situations causing heatstroke exceeding the “strict alert” level. The diurnal range and the spatial and vertical differences in indoor winter temperature tended to increase as external daily minimum air temperature became colder, exceeding 7 Celsius on average as a result of heating effect.

Key words : temporary housing, indoor climate, temperature and humidity, diurnal variation, Great East Japan Earthquake, Miyako city in Iwate prefecture

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