Human biological cycles are highly interfered by climate and weather. The way one works, gets exhausted, and recovers is affected by meteorological variables, such as air temperature, relative humidity, solar radiation and wind speed. Sometimes those activity cycles are affected by harsh climatic conditions, producing body and mind discomfort, affecting the sleeping cycle, and in extreme cases, may even cause detrimental health effects. During the last decade, interest in the assessment of thermal comfort has increased because of climate changes and increased heat stress in cities. Thermal comfort is the condition of mind that expresses satisfaction with the thermal environment and is assessed by subjective evaluation. Maintaining the standard thermal comfort for occupants of buildings or other enclosures is one of the important goals of design engineers (ANSI, 2010). This article is an attempt to quantifying the thermal comfort of a city located in a transition area in Salvador city (BA), Northeastern of Brazil, showing that the thermal sensation for the inhabitants of this region during this period. Nastos (2006) says that the knowledge of human discomfort conditions is necessary because many people particularly those who live in large cities have greater risk to morbidity and mortality due to higher air temperature than the surrounding countryside. For this the Temperature Effective Index (TE) by modified Thom's Discomfort Index [DI] (THOM, 1959; GILES et al., 1990) which uses temperature in degrees Celsius. Monthly means of temperature and relative humidity, obtained from the National Institute of meteorology (INMET) during the period 1961-2010 were used for calculating the index. Thom's discomfort index was the first index created to asses levels of human discomfort related to meteorological variables. Results indicated during summer (November to February) several months that are uncomfortable regarding heat because there was ID values above 24 º C. Already during winter (May-August) on most days less than 50% of the population has a slight discomfort (ID between 21 and 24 ° C) values of this index are smaller, indicating a lower heat stress during this period. When you combine high temperatures with low humidity it produces high values of ID. It was noted also that the ID has become uncomfortable with greater frequency in the last 10 years, and in some summer months the ID reached 28 º C indicating that the majority of the population has a relative discomfort and significant deterioration of the psychophysical condition. In any month was observed a situation of welfare (comfortable) according to the methodology of Thom (1959), because the ID was never less than 21°, in our study. There is a true and close relationship between urban thermal environments and city size, presence of industrial areas and motor– vehicle traffic, urban density, like in Salvador, because changes of environmental conditions in big cities are due to the greenhouse effect, high rate of pollution in addition to urban heat island effect, increasing the thermal discomfort. With this study expected to contribute to the planning of public policies for regions with similar weather conditions.

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