

PER 50%

Prova teorico/pratica 1

Descrivere il processo di valutazione post abitativa (Post Occupancy Evaluation) per la valutazione termica degli ambienti.

Prova teorico/pratica 2

Descrivere i metodi principali per determinare la temperatura media radiante. Spiegare la relazione tra temperatura media radiante e temperatura operativa.

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Prova teorico/pratica 3

Descrivere le principali grandezze fisiche determinanti il comfort termo-igrometrico secondo modello PMV, indicandone gli strumenti di misura appropriati. Considerando standard di riferimento ed esperienze pratiche, specificare il corretto posizionamento degli strumenti di misura negli ambienti.

PROVA ORALE 1

Prova orale 1

- a) Si richiede che il candidato discuta i passaggi fondamentali previsti dai protocolli di misura e verifica esistenti per il monitoraggio delle prestazioni energetiche e di comfort termico di un edificio.
- b) Office Excel: Utilizzo della funzione E (AND) in combinazione con la funzione SE (IF).
- c) The black-globe thermometer consists of a black globe in the centre of which is placed a temperature sensor such as the bulb of a mercury thermometer, a thermocouple or a resistance probe. The globe can in theory have any diameter but as the formulae used in the calculation of the mean radiant temperature depend on the diameter of the globe, a diameter of 0,15 m, specified for use with these formulae, is generally recommended. It should be noted that the smaller the diameter of the globe, the greater the effect of the air temperature and air velocity, thus causing a reduction in the accuracy of the measurement of the mean radiant temperature. So that the external surface of the globe absorbs the radiation from the walls of the enclosure, the surface of the globe shall be darkened, either by means of an electro-chemical coating or, more generally, by means of a layer of matt black paint. (Ref. EN ISO 7726:2001).

PROVA ORALE 2

Prova orale 2

a) Si richiede che il candidato discuta come progettare una campagna di valutazione del comfort termico indoor basata sia sulla misurazione delle principali grandezze fisiche coinvolte che sull'utilizzo di questionari standardizzati.

b) Office Excel: Calcolo dello scarto quadratico medio sulla base di un campione.

c) People are exposed to a range of physical environments which can affect their health and safety, comfort and performance. An important method for assessing physical environments, particularly when considering psychological constructs such as comfort or satisfaction, is to use subjective scales. This document provides a description of principles of scale construction and procedures for use. It is needed to provide consistency in the production of valid and reliable scales. It is particularly useful to people who wish to conduct an environmental survey, for example to assess post occupant satisfaction of new or existing buildings or other spaces, environments where dissatisfaction occurs and a diagnosis of the problems is required and for people who are investigating the relationship between conditions in the physical environment and human perception. A consistent approach to subjective scale construction and use also allows a meaningful comparison of data obtained from investigations internationally. (Ref. EN ISO 10551:2019).