

DETERMINATION OF INDOOR AIR QUALITY AND THERMAL COMFORT ACCORDING TO DIN EN ISO 7730

TASK

If employees feel uncomfortable in their (usually office) workplace, this can have a huge impact on their physical and mental performance and satisfaction. One common problem is dissatisfaction with the prevailing climatic conditions. Personal feelings generally vary greatly depending on the person, age, gender, etc. Complaints about temperatures that are too cold or too warm, poor air quality or even draughts in the workplace therefore often lead to conflicts between colleagues or between employees and employers.

Another important factor for comfort in the workplace is indoor air quality, assessed on the basis of the key component carbon dioxide (CO₂). Too high a concentration of CO₂ can lead to tiredness, poor concentration and even headaches. However, emissions of harmful substances from furniture, buildings etc. (e.g. formaldehyde) can also lead to health effects. The challenge for an assessment of the workplace is to objectively evaluate and assess the subjective perception of the employees. It is assessed whether there is literally "thick air".

Industries

Chemical companies
Plastics processors
Automotive suppliers
Chemical fibers
Lacquers and paints

Analysis goals

Identification of disruptive factors
Comfort measurement

Materials

Indoor air

Analysis method

Temperature determination
Turbulence level measurement
Determination of the relative humidity
CO₂ concentration indoors

Related questions

Emission measurements
Volume flow measurements
Risk assessment

DETECT HEALTH RISKS IN THE WORKPLACE IN ADVANCE.

SOLUTION

Analytik Service Obernburg offers measurements that help to assess the prevailing climatic conditions in the workplace. The objective measurement of thermal comfort in accordance with DIN EN ISO 7730 offers the opportunity to resolve disputes about thermal discomfort in an objective manner. Parameters such as temperature, relative humidity, radiation temperature, air velocity and some other factors such as clothing and activity level are recorded.

Local discomfort such as draughts or the vertical difference in air temperature can also be determined at the workplace. The same applies to the CO₂ content. For example, a concentration of around 1000 ppm of CO₂ should not be exceeded at the workplace. If there is another problem with the perceived air quality (odor, irritation, etc.), specific pollutants (e.g. from new furniture, new flooring, etc.) can also be tested.

The evaluation of the measurement results shows whether there is actually a disturbance of comfort or whether the indoor climate is within the range recommended by the standard. If there is indeed discomfort, the cause can be investigated. In addition, the client has the opportunity to develop individual solutions based on the results.



ADVANTAGES

The subjective perception of uncomfortable environmental conditions is objectively assessed and documented.

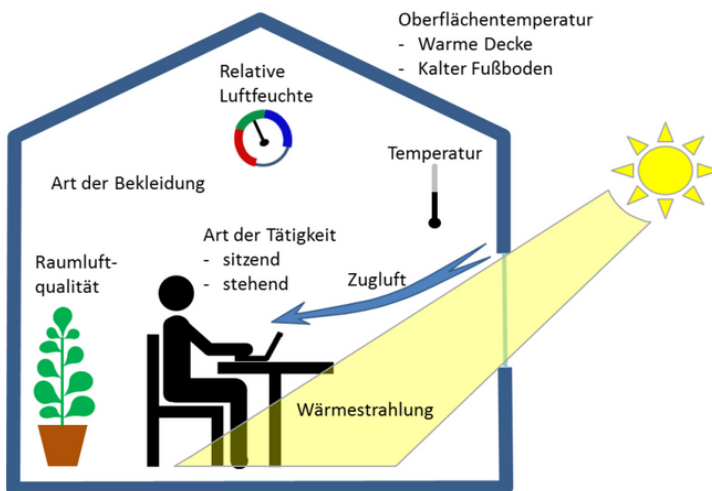


Fig. 1: Possible influences on comfort at the workplace



Fig. 2: Measurement setup for comfort measurement