



PASSIVE COOLING FURNITURES

CONCEPT ; PlusICE Mixtures of non-toxic Eutectic solutions have freezing and melting points higher than those of water and offer TES capability between **+4 °C** and **+117 °C**.

In collaboration with Climator, Sweden custom-made Non-Toxic, Phase Change Material (PCM) is permanently sealed within the furniture body which enables heat transfer to take place via natural conduction.

Tests carried out so far indicates a room furnished with PlusICE range furniture could easily provide a comfort cooling without any mechanical cooling for most of the moderate climate conditions.

HOW DOES IT WORK ?

When the surrounding air temperature is less than the PCM solution the cell freezes and later stored Latent Heat can be released back to the surrounding space as required.



Passive cooling relies on a temperature swing between night and day. Cooler night-time air charges the PCM's within the furniture storing energy which is later released as required during warmer day time back to the space.

The heat transfer between the furniture and the room provides a Passive Cooling facility and this charging / discharging process is repeated on a daily basis to provide cooling without any mechanical cooling system.

PlusICE range furnitures occupy the same space with conventional furnitures but the cooling effect stored over-night stabilize the room temperature during occupied day periods. The natural room temperature swing between night and day time can reduce or even eliminate the need for a mechanical cooling system due to stored energy energy in these units.

An optional small fan can be initiated with an ambient sensor to enhance the charging process during night-time, and the same fan can also be used to provide air movement during day time for passive comfort cooling applications.

BENEFITS:

COST EFFECTIVE SOLUTION

It offers the possibility of improving space comfort with no additional cost during refurbishment process for existing or new buildings.

MINIMAL RUNNING COST

Reduced or even eliminated mechanical cooling system provides reliable operation and lower running costs.

NO MAINTENANCE COST

Static nature of this cooling concept requires no maintenance for a long and reliability life.

STEADY RESPONSE

The mass energy stored within the furniture body releases cooling back where exactly the energy is required namely occupied areas.

FLEXIBLE SYSTEM

Various type of furnitures to suit any home and office layout in order to provide comfort cooling.

GREEN SOLUTION

Reduced energy consumption, hence, less indirect CO₂ emission.

TECHNICAL SUPPORT

EPS offers full system design support to assist in proper selection and integration into existing or new installations as part of our customer commitment. Please consult our technical sales team at sales@epsLtd.co.uk for your specific application or visit our web site www.epsLtd.co.uk.



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