

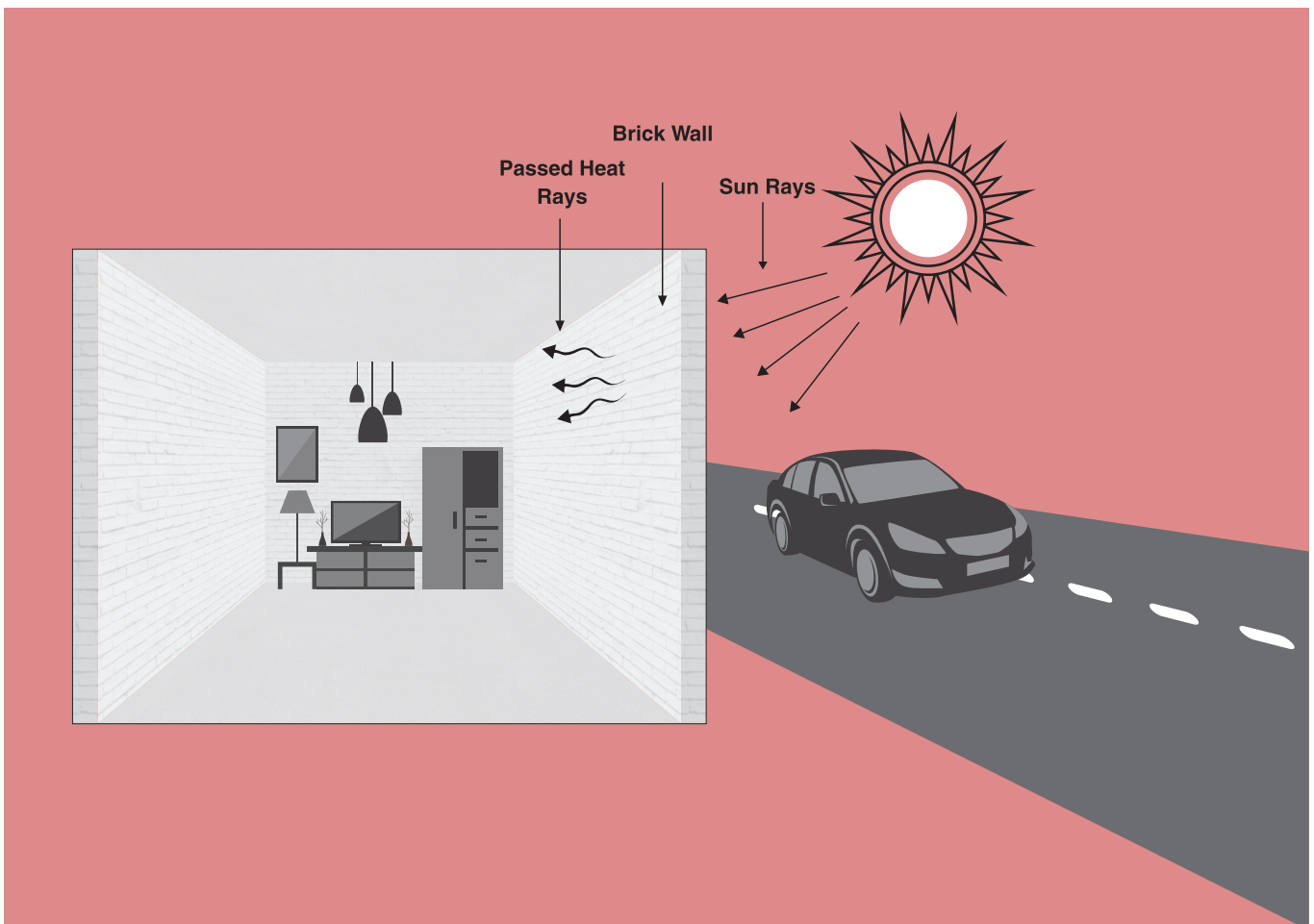
# COOLER FROM WITHIN

**INBRICK SYSTEMS**®

INSIDE WALL INSULATION

## BRICK OR RCC WALLS

Walls of a building play a crucial role in the heat loss or gain. These walls are generally made of either brick or RCC. Thermal conductivity of brick varies according to material composition and density of the raw material used. But it generally ranges from 0.6 to 0.9 W/mk while RCC's thermal conductivity is around 1.58 W/mK at a density of 2288 kg/m<sup>3</sup>. Although brick has a lower thermal conductivity compared to RCC, considerable amount of heat can be transferred through it. Also, specific heat capacity value of brick wall is lower, which means it gains heat faster in comparison to RCC.



## WALLS ACT AS HEAT STORAGE DEVICE

A brick wall acts as a heat storage device. It absorbs the heat during the day and releases it into the building slowly throughout the day. The inside of a building faces heat gain and loss due to the atmospheric temperature. A desired temperature needs to be maintained in order to get thermal comfort. Hence for RCC and brick wall, the energy required to maintain thermal comfort is more.

- **Walls of a building play a crucial role in heat loss or gain**
- **Walls act as heat storage devices dependent on atmospheric temperature**
- **Non-Insulated wall requires higher energy to maintain thermal comfort**

## LOWER THERMAL CONDUCTIVITY

Insulating the inside of the walls with lower thermal conductivity material helps in preventing heat loss or gain for thermal comfort. Due to higher thermal resistance, insulation material limits passage of heat through it. This directly reduces the energy required to maintain the thermal comfort inside the building.

## Water Resistance Layer

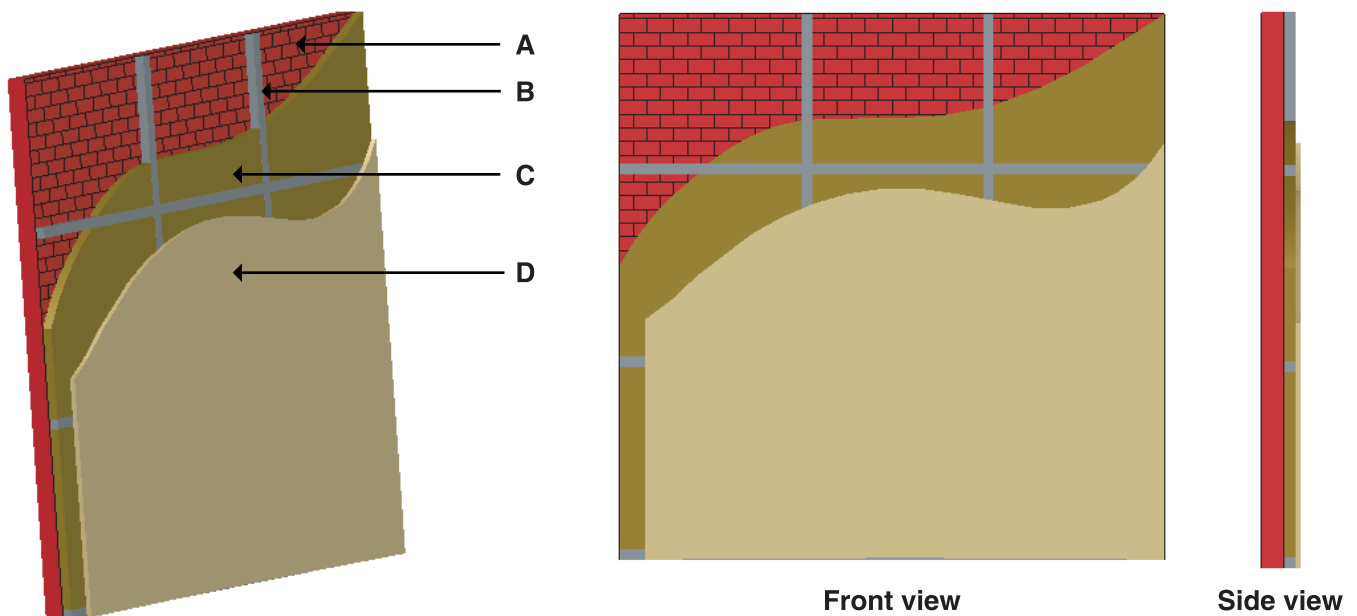
In RCC and brick wall there are chances of water leakage due to moisture absorption. If the insulation material inside the wall absorbs this water, its performance deteriorates. To avoid this, water resistance layer can be inserted before the insulation material is applied. This helps in maintaining the thermal properties of the material for a longer period of time.

## The Process

A grid needs to be fabricated on the inner side of the wall. Later, the material is directly fixed in the grid. The final finishing of this grid can be done with gypsum board, plywood, cement sheet or similar materials. The thickness for this system can vary from 8 mm to 40 mm depending on the end-user requirement. This system can be designed with a combination of materials to give optimal thermal comfort inside the building. Since the space inside a building is of prime importance, the thickness of the material is kept minimal. The system design includes a layer of moisture barrier for safeguarding the insulation material.

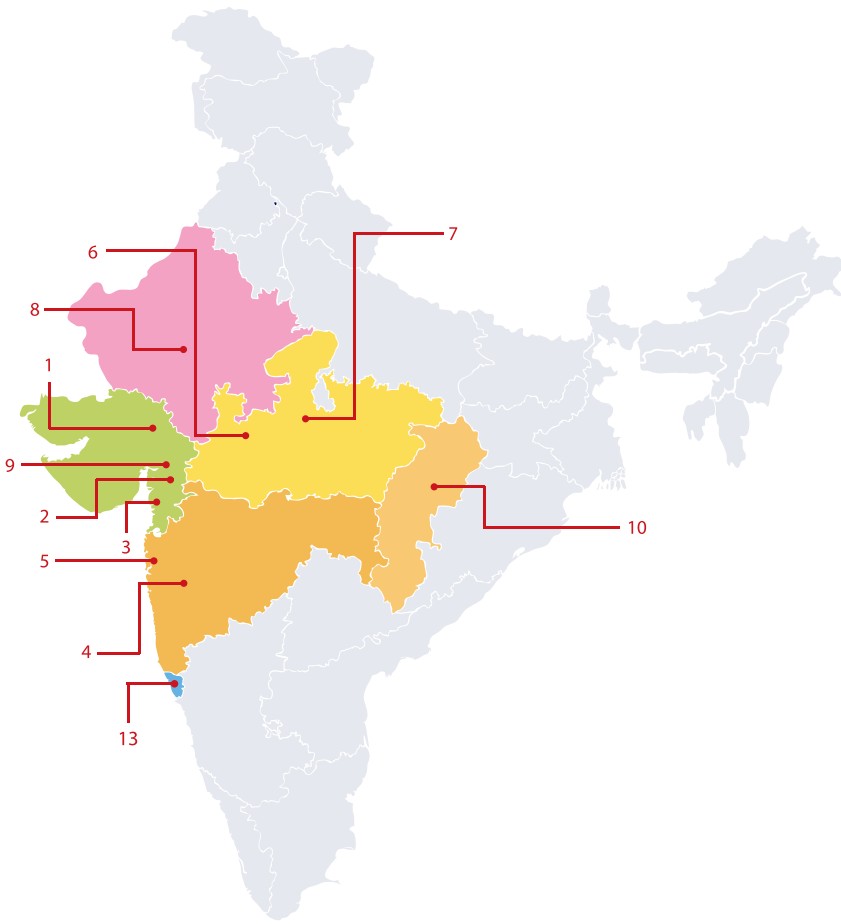
## Ideal For

Individual rooms or individual apartments where insulation from outside is not possible. Individual rooms in research labs, hospitals, etc.



A) Brick wall    B) Wooden / Aluminium grid    C) Insulation material    D) Ply / Gypsum board

- InBrick systems help lower the energy required to maintain thermal comfort
  - Water Resistant Layer may be required to protect the InBrick insulation layer from water seepages
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