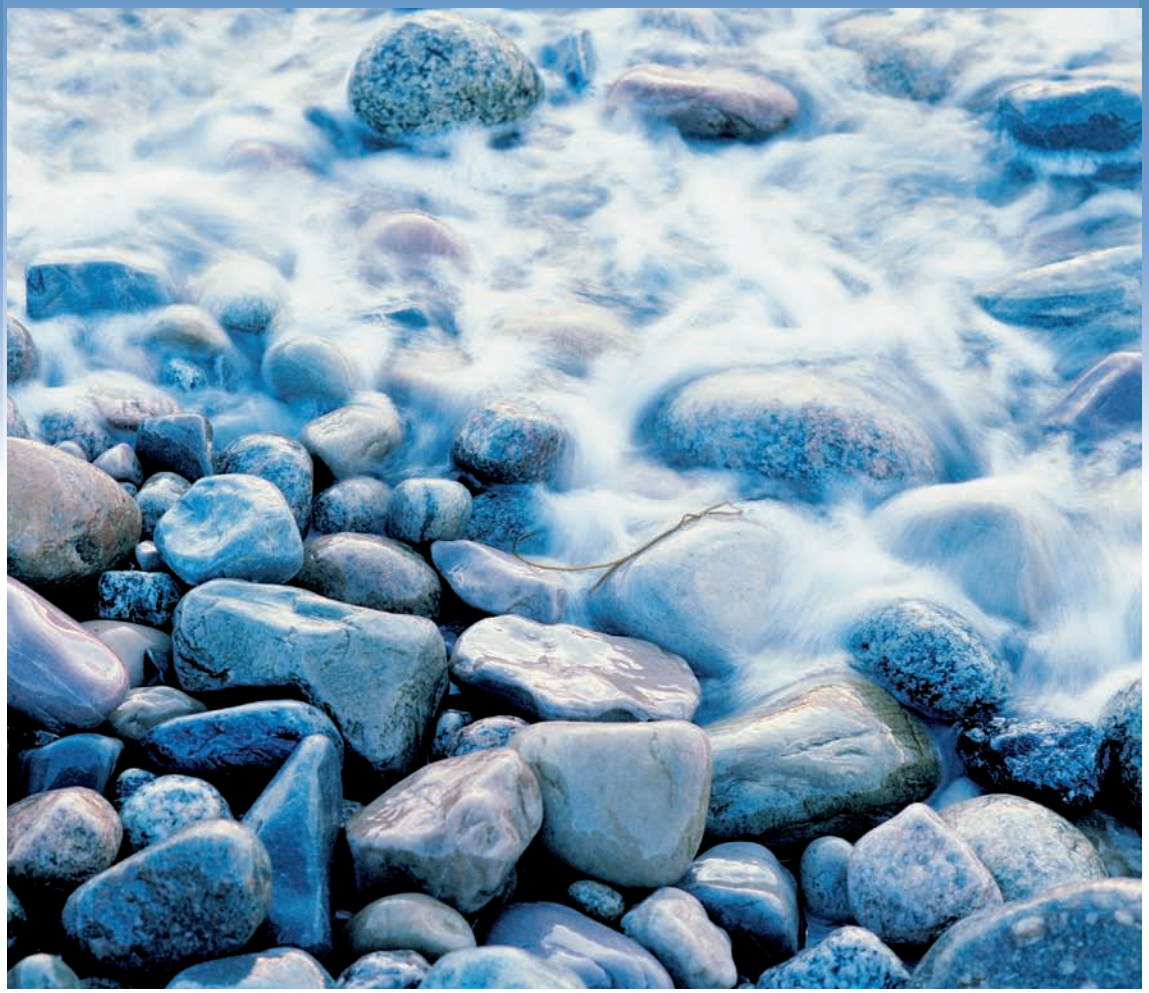
MALAYSIAN INSULATION MANUFACTURERS GROUP

SAVE ENERGY – FIGHT GLOBAL WARMING

INSULATION APPLICATION

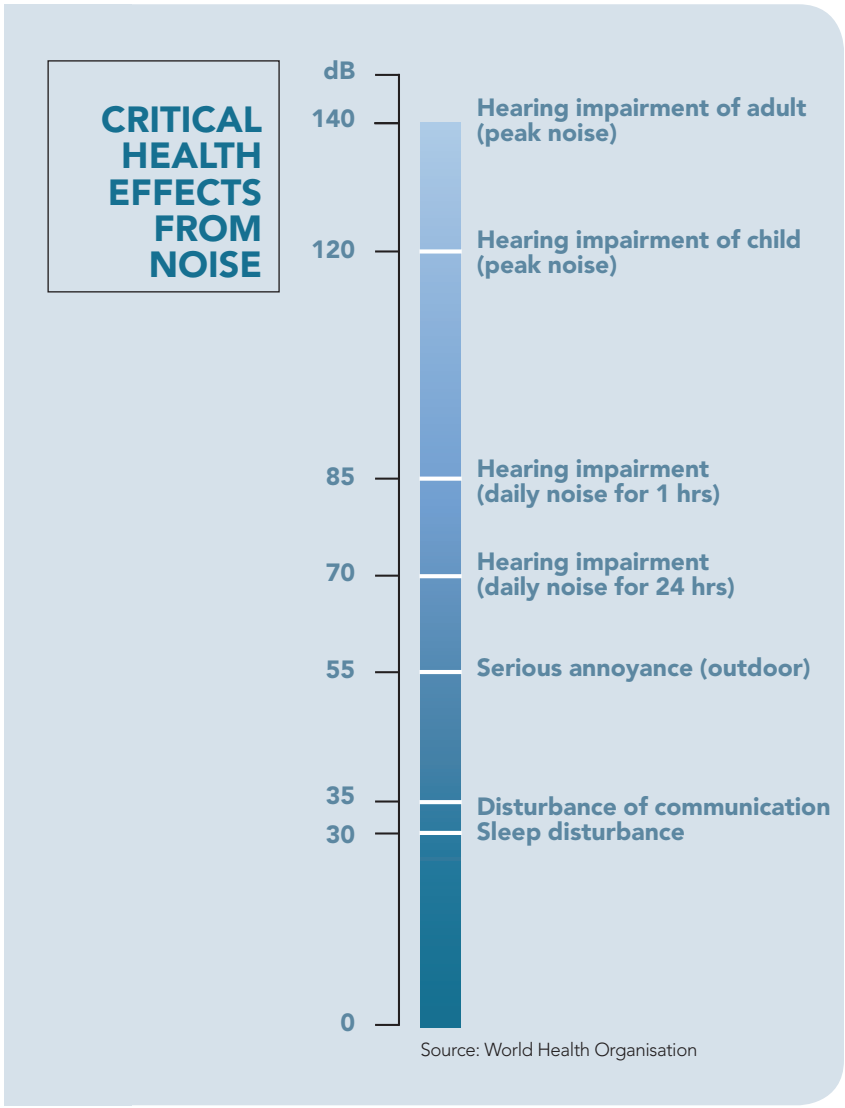


THERMAL INSULATION AGAINST HEAT PENETRATION

A non-insulated or badly insulated building can consume considerable energy to cool. This is because energy used for cooling accounts for about 35% to 40% of the total energy consumption in a building. Insulating the building envelope such as the roofs and walls, will help tremendously in reducing heat transfer into the building.

Heat is transferred from an area of higher temperature to an area of lower temperature in 3 ways.

– Convection: takes place in the process of hot air rising and cold air settling. As such, when there are two panels having different temperatures on the outer surface, sandwiched with air in between, the colder panel will eventually be heated up.
– Radiation: takes place through the emission of heat waves across space to warm up an object. Sunlight is a form of radiation that is radiated through space to our planet without the aid of fluids or solids.
– Conduction: is the transfer and distribution of heat energy from atom to atom within a substance. For example, a spoon in a cup of hot soup becomes warmer because the heat from the soup is conducted along the spoon.



Source: World Health Organisation

INSULATION PROVIDES A COMFORTABLE & HEALTHY INDOOR ENVIRONMENT

Mineral wool thermal insulation prevents convection by holding air still in the matrix of the wool. Heat transfer by radiation and conduction are also limited due to the characteristics of the mineral wool. Therefore, thermal insulation keeps the indoor temperature cooler and improves the comfort of our homes.

Thermal insulation also reduces energy consumption which in turns reduces the use of fossil fuel that contributes to carbon dioxide emissions and global warming.

ACOUSTIC INSULATION FOR SOUND POLLUTION

Sound or acoustic insulation is about controlling unwanted sound or 'noise' and providing privacy and a conducive environment for working and living space. The fibre-like structure of mineral wool makes it an excellent material to absorb sound energy by turning them into heat, thus greatly reducing the reflection of sound waves.

There are three factors that affect people's experience and perception of sound.
- Levels: expressed in decibels
- Duration: the length of time of the exposure
- Frequency: expressed in Hertz (Hz).

Specific products aimed at acoustic treatment using mineral wool includes acoustic slab, partition cavity filings, wall linings and floor or roof level sound insulation and absorption. For example, most of the gypsum partition walls in offices are installed with mineral wool in between. This is to provide better treatment on sounds transmission between the rooms.

FIRE PROTECTION

In fighting fires, time is essential, particularly in the first few minutes of a fire. A room fire temperature can reach up to 700°C in the first fifteen minutes and then can rise even further up to 1100°C. Fire-resistant materials such as mineral wool provides the extra vital minutes to delay the spread of fire and help to save lives, money, properties and environmental pollution.

Mineral wool is the ideal fire protection material since it is both non-combustible and does not conduct heat. It is suitable for fire-retardant uses, as sheathing of building supports and girders, as covering for ceilings, covering for services and for incorporation in fire-resistant doors and partition walls.

While no buildings can be designed to guarantee against fire, mineral wool insulation and fire protection products can help to preserve structural stability, provide fire inhibition, means of escape and adequate access for fire-fighters to saves lives should the worst happen.

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