

Spot Light

Insulate With Supreme

The Thermal Insulation Division of Supreme provides top-of-the-line insulation solutions with its 'INSU' range of products.

The radiant heat is invisible and has no temperature, just energy. When this energy strikes another surface, it is absorbed and increases the temperature of that surface. In summer, radiation from the sun strikes the outer surfaces of walls and ceilings and is absorbed causing the surface to heat up. This heat flows from the outer wall to the inner wall through conduction which is then radiated again, through the air spaces in the building, to other surfaces within the building. Radiation between surfaces is through invisible, infra-red heat rays.

Different types of insulation products reduce the heat transferred by conduction, convection and radiation to varying degrees. As a result, each provides different thermal performance and corresponding "R" values. The primary function of reflective insulation is to reduce radiant heat transfer across open spaces, which is a significant contributor to heat gain in summer and heat loss in winter.

Supreme's Thermal Insulation Division offers solutions for ducting insulation in hospitals, shopping malls, airports, PEBS, IT/BPO, etc, pipe insulation for split AC tubings, chiller piping, drain pipes, chilled water lines etc, floor insulation in server rooms, data centres, medical and diagnostic centres, and control rooms for petrochemicals, underdeck insulation in PEBS, textile units, malls, airports etc and overdeck and wall insulation in commercial buildings, residential buildings, cold storages, etc.

There are many types of materials that reduce heat gain and heat loss. Some materials provide greater resistance than others, depending on the mode of heat transfer: convection, conduction or radiation. Most insulation materials work on the principle of trapped air gas being a good insulator. Mass insulation like, 'INSUshield'- closed cell, FR crosslinked polyethylene foam, use cellular walls of plastics, fibreglass wool uses glass fibres to reduce convection thereby decreasing the transfer of heat. These materials also reduce heat transfer by conduction due to the presence of trapped air. (However, these products, like most building materials, have very high radiant transfer rates. Most building materials, including fibreglass, foam and cellulose have "E" values in excess of 0.70.)

'INSUshield' is a non-fibrous, fire retardant, closed cell, tri dimensional chemically crosslinked polyethylene foam XLPE. An ideal environment friendly insulation material, with a perfect solution for all your insulation needs for ducts, roofs, pipes, vessels, etc. The divergent advantages of 'INSUshield' are ease of installation, low thermal conductivity and good moisture and vapour resistance preventing



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microbial growth and optimum condensation protection.

Reflective insulation typically have "E" values of 0.03 (again, the lower the better). Therefore, reflective insulation is superior to other types of insulating materials in reducing heat flow by radiation.

When reflective insulation is installed in building cavities, it traps air (like other insulation materials) and therefore reduces heat flow by convection thus addressing all three modes of heat transfer.

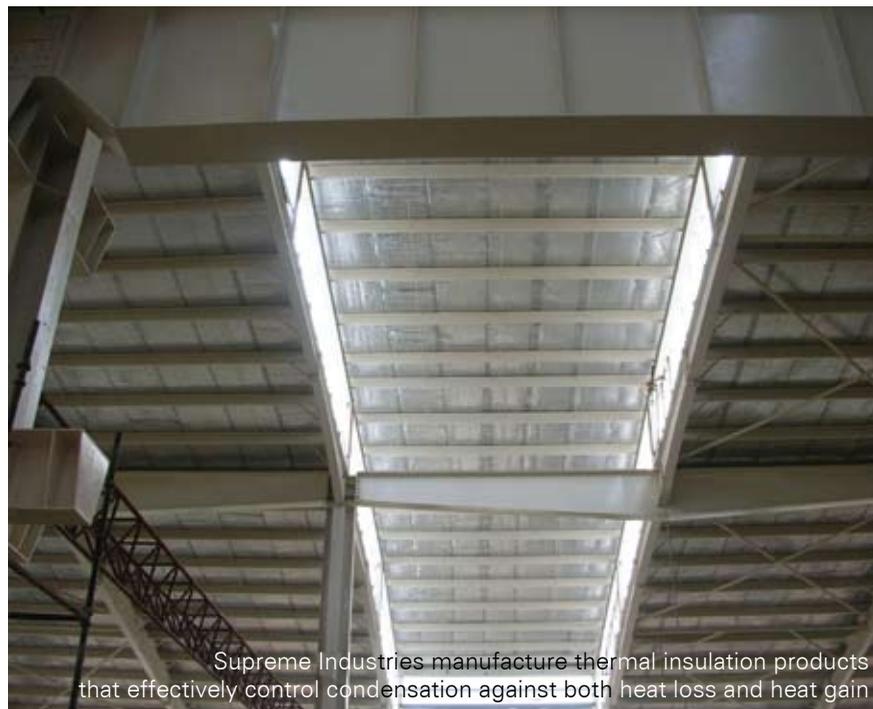
The performance of the system is determined by the emittance of the material(s), the lower the better, and the size of the enclosed air spaces. The smaller the air

space, the less heat will transfer by convection. Therefore, to lessen heat flow by convection, a reflective insulation, with its multiple layers of aluminum and enclosed air space (INSUreflector), is positioned in a building cavity (stud wall, furred-out masonry wall, floor joist, ceiling joist, etc.) to divide the larger cavity (3/4" furring, 2" x 4", 2" x 6", etc.) into smaller air spaces. These smaller trapped air spaces reduce convective heat flow.

'INSUreflector' offered by Supreme is made of polyethylene Air bubble film (ABF) laminated with aluminum foil on one or both sides. The bright surface of the aluminum foil reflects 96 to 99 percent infra-red radiation received by the surface of a heated slate roof. It protects the building from undesirable heat gain. The thin reflective foil having low emissivity and high reflectivity when installed with an air space restricts the transfer of far-infrared radiation making it an ideal material to be used for underdeck application.

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Supreme Industries manufacture thermal insulation products that effectively control condensation against both heat loss and heat gain