

Elastomeric Nitrile Foam V/s Expanded Polystyrene

A-flex Nitrile Foam

Expanded Polystyrene

FIRE RESISTANCE

Excellent Fire resistance. Conforms to BS-476 Part 6 & 7 Class 0. It has similar characteristics as non-combustible materials. Also conforms to new European Standards & classification system, Euro Class B.

Highly inflammable and becomes a hot liquid on burning, releasing toxic fumes and thick smoke.

WATER VAPOUR DIFFUSION

The closed cell structure has an inbuilt water vapour barrier so ingress and outgress of water vapour is negligible. The values of Water Vapour Diffusion Factor is ≥ 7000 .

Has a very low μ value ($\mu \leq 1000$). This low value increases moistening which in turn increases Thermal Conductivity (k) value thus necessitating usage of higher thickness for the same operating conditions. Needs separate vapour barrier.

COST

Soft and flexible material and can be bent to take contours. Insulation on cylindrical and round surfaces easy. Highly cost effective. Fast installations are possible in extreme site conditions as it does not need additional support systems.

Hard and brittle material and cannot be bent to take contours. Insulation on cylindrical and round Surfaces can be done only by using segments resulting in uneven surfaces. Insulated surface needs external protection after installation and is finished either with sand cement plastering or Al-sheet cladding. Piping insulation comes in the form of two halves and matching is not always correct resulting in gaps at the joints leading to valuable losses. Bitumen and Primer have to be used for fixing these materials making the whole place untidy and messy besides increase in cost.

SHELF LIFE

Has a much longer shelf life than any other insulation material. Can take expansion and contraction due to change in temperatures.

Has a much lower shelf life. It gets brittle and develops cracks due to expansion and contraction.

HEALTH HAZARDS

Because of its fiber free neutral nature, it is most opted material for application in areas like Pharma units, Operation Theaters, Hotels, etc.

Non-ecofriendly. Produces dust, susceptible to chemical attack and from rodents

TEMPERATURE RANGE

The service temperature ranges from -200°C to $+115^{\circ}\text{C}$.

The service temperature ranges from -40°C to $+110^{\circ}\text{C}$.

RADIATION EFFECT

Can be installed outdoors with a layer of UV protection paint or Glass Epoxy paint.

Can be installed outdoors but cladding required..