

Healthy and comfortable building with EPS



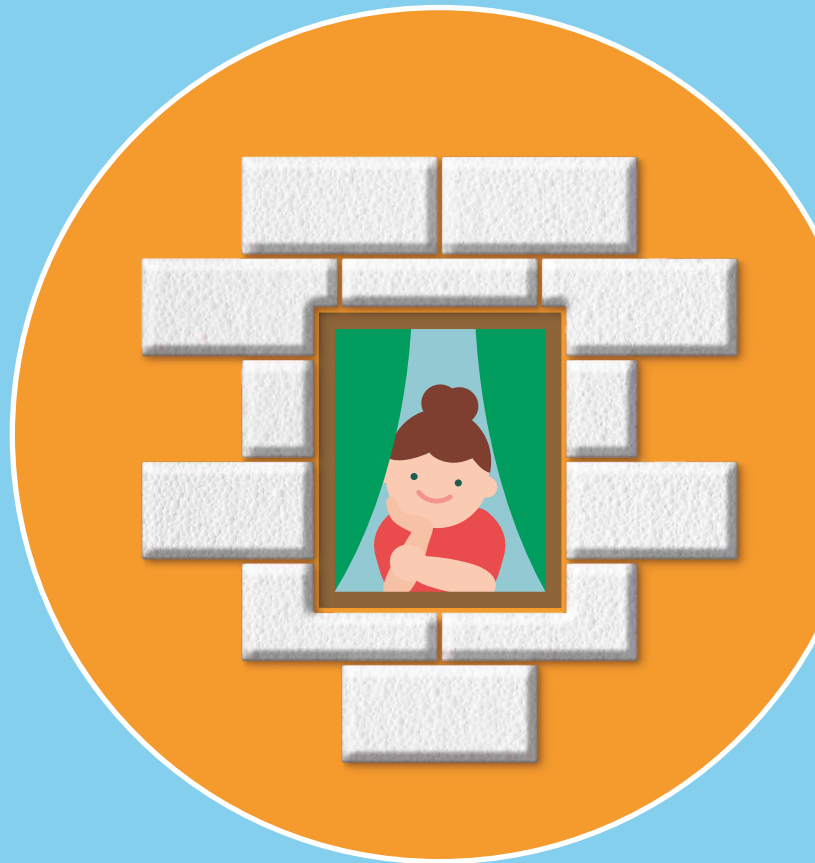
airpop[®]
engineered air

Healthy and comfortable building with EPS

Expanded Polystyrene (EPS) is the material of choice for many insulation applications in buildings and is a popular packaging solution. EPS offers many benefits, among which is its proven health and safety record during all stages of its life cycle - from production, during use, through to end-of-life.

In order to save energy, a sufficiently high level of insulation is self-evident in any modern building. But the choice of a material should also be driven by a high vigilance on characteristics related to health and safety. Issues of human exposure to e.g. fibres or radon should be carefully considered. In addition, any environmental or health claim should rely on verifiable data, not on beliefs or assumptions. One insulation material scores particularly high when it comes to health and safety: EPS. Its physical properties make it an ideal insulation material providing comfort in all life cycle stages.

With EPS, health is preserved during production, transportation, handling, installation, use phase and even during demolition, renovation and waste management.



The multiple benefits of EPS

1. Green

- Saves climate
- Saves resources
- Recyclable
- Environmental properties

2. Problem solver

- Light weight (98 % of air)
- Moisture resistant
- Walkability
- Compressive strength
- Insulation value
- Shape moulding

3. Protective

- Easy to install
- No need for personal protection
- Low emissions

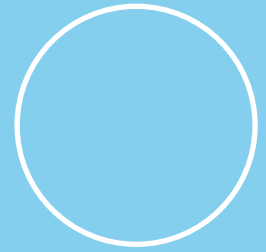
4. Assured comfort

- Healthy indoor air quality
- Certified material

5. Money saver

- Value for money
- Durable properties
- Saving energy





Production: EPS insulation is produced in a safe working environment

Good manufacturing guidelines ensure efficient risk management during EPS production. The production does not emit any dust or fibres. Low density and hence light weight of EPS facilitates handling of end-products, even when done manually.

Transport: EPS is easy to transport

The low weight of EPS products (98 % air) reduces the load on the road, which results in less fuel consumption and less emission to public and construction workers. Transport, loading and unloading can be realised without a need for personal protective equipment (no dust, no fibres). Again, light weight of EPS facilitates handling, especially when done manually.

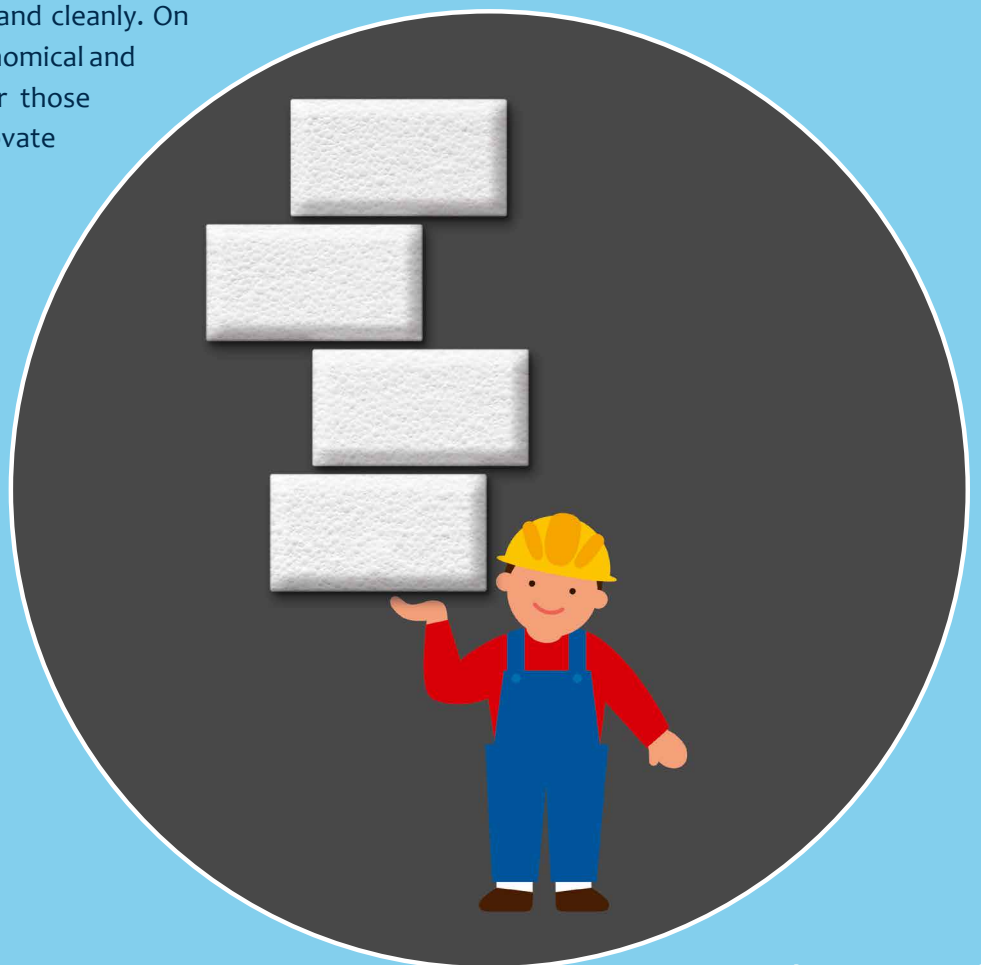


Installation: workers enjoy handling EPS

While light weight of EPS makes handling easy, low density of EPS facilitates easy but precise cutting and shaping, without health impact of dust and fibres from the insulation material for lung, skin or eyes. There is no need for wearing PPE (Personal Protective Equipment) during handling. EPS is free of harmful or irritating components.

First choice

Building professionals all agree: EPS is one of the best ways to insulate and it is very easy to handle. On the one hand, it is ultra-light and it can be cut to shape quickly and cleanly. On the other hand, it is very economical and makes the choice easier for those who want to insulate or renovate affordably and efficiently.



Use phase: EPS creates a healthy and comfortable indoor climate

Indoor air quality is of prime importance for the health of the occupants and for the good conservation of the building itself. EPS enables a healthy indoor environment whatever the conditions may be, even with moisture. However, on this issue it is recognised that insulation and airtight building are inseparable from appropriate ventilation. Good thermal insulation is known to contribute to a comfortable interior. EPS insulation is effective in any season: keeping warm in winter, staying cool in summer.



Use phase: EPS creates a healthy and comfortable indoor climate

In considering indoor air quality the following parameters come into play:

Moisture

Moisture in buildings is one of the biggest challenges faced by builders. It can lead to mould growth on the inside surface of the construction and even within constructions. In this way undermining the integrity of the structure, and creating a poor, unhealthy indoor environment. Remarkably, EPS is virtually insensitive to moisture, and will absorb almost no water even when immersed for long periods. This means that remaining water ingress e.g. due to rain during installation, leakage incidents or condensation has virtually no effect on EPS insulating products. The original insulation value of EPS is therefore guaranteed during the full service life of the building.

Emissions

EPS contributes to a good indoor air quality, because emissions of volatile organic compounds are below any level of interest (LCI-values¹) as indicated by existing and proposed national or EU regulation (e.g. French regulation, AGBB²-scheme). EPS does not emit any fibres or radon. EPS is chemically stable in contact with water and there is no leaching of any of its ingredients.

Overheating and undercooling

Properly insulated with EPS, buildings provide a comfortable indoor climate, warm during cold days and fresh enough during hot ones. A constant comfortable inside temperature can be maintained without excessive heating or air conditioning costs and related environmental burden.



¹ LCI: Lowest Concentration of Interest - harmonised health-based reference values for the assessment of product emissions
² AGBB: German Committee for Health-related evaluation of Building Products

Demolition: EPS insulated buildings can be deconstructed without health impact from the insulation

The use of insulation material in Europe has increased since the 1960's. Slowly but surely some of the building stock from that period is now reaching the demolition stage. In the future, selective demolition should ensure that insulation material is recovered in line with the EU's waste hierarchy and current legislation, aiming for a resource efficient, circular economy. Stricter regulations also affect building demolition and waste management. This will mean some changes for workers involved in demolition and renovation³.

During renovation or demolition of EPS, there are no issues to be concerned about related to health impact of dust and fibres from the insulation material for lung, skin or eyes and therefore there is no need for wearing PPE (Personal Protective Equipment).

EPS Insulation material is not susceptible to contamination with mould. In case of EPS insulated construction elements, there is no risk of spread of dangerous spores from the insulation material during the renovation and demolition work.



³ For instance, country specific rules are expected to be implemented to manage EPS waste containing HBCD

Waste management: EPS waste is 100 % recyclable

At the end of life EPS can be treated in many ways, without raising health concerns. The preferred options according to the EU waste hierarchy: reuse > recycling > incineration > landfill. The preferred option for EPS is to be recycled, thus contributing positively to the circular economy⁴. When waste containing EPS would be landfilled, it would be a waste of resources, however, there would be no leaching of any harmful substances.



EPS insulation: the healthy and comfortable choice throughout the building lifecycle

Who is EUMEPS?

EUMEPS is the Association of the European Manufacturers of Expanded Polystyrene (EPS). It reflects the interests of all of Europe's leading EPS manufacturers through national associations. Founded in 1989, EUMEPS now has the support of 95 percent of the European EPS industry.

There are two interest groups within the organisation: EUMEPS Power Parts and EUMEPS Construction.

EPS comprises 35 percent of the total building and construction insulation market with 10,000 people directly employed in the EPS industry.

EUMEPS acts as an intra-industry task force, monitoring and co-ordinating a continuous process of improvement in European EPS manufacture with 'cradle to grave' responsibility for the products. This is achieved via working groups focused on:

- Health, Safety and the Environment
- Standardisation
- Fire safety
- Communications.

EUMEPS is a partner on a European level for economic, political and technical issues to relevant parties including the building and construction industry, legislative authorities, architects, engineers, developers and consumers.

EUMEPS-EUROPEAN ASSOCIATION OF EPS

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