

# Healthy and comfortable building with EPS



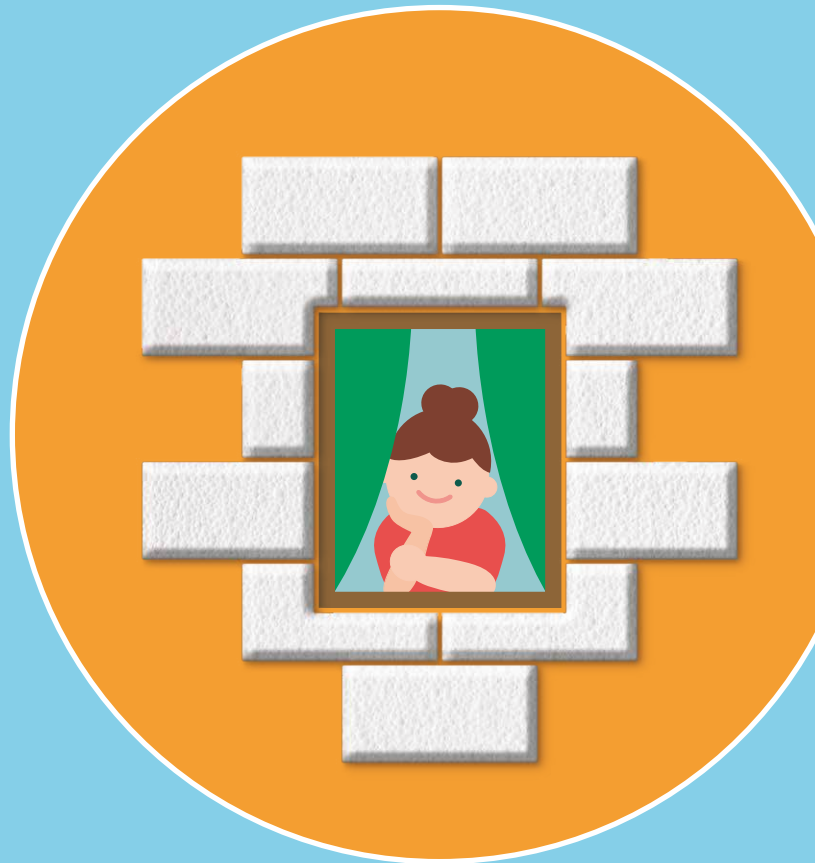
**airpop**<sup>®</sup>  
engineered air

# Healthy and comfortable buildings with EPS

Expanded Polystyrene (EPS) is the material of choice for many insulation applications in buildings and is also 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 careful vigilance on characteristics related to health and safety. Issues of human exposure, for instance to fibres or radon, should be carefully considered. In addition, any environmental or health claim should rely on verifiable data, not on prejudices 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 and security in all life cycle stages.

With EPS, health is not jeopardised during production, transportation, handling, installation, use phase and even during demolition, renovation and waste management.



# The multiple benefits of EPS

## 1. Green

- Mitigates climate change
- Saves resources
- Recyclable
- Good environmental properties

## 2. Problem solver

- Light weight (is 98% air)
- Moisture resistant
- Good walkability properties
- High compressive strength
- Excellent insulation value
- Easy to shape mould

## 3. Protective

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

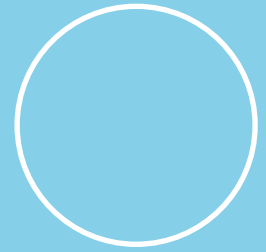
## 4. Assured comfort

- Contributes to a healthy indoor air
- Certified material

## 5. Money saver

- Value for money
- Durable properties
- Saves energy





## **Production: EPS insulation is produced in a safe working environment**

Good manufacturing practices 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 carried out manually.

## **Transport: EPS is easy to transport**

The low density and hence 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). In addition, the light weight of EPS facilitates handling, especially when handled manually.

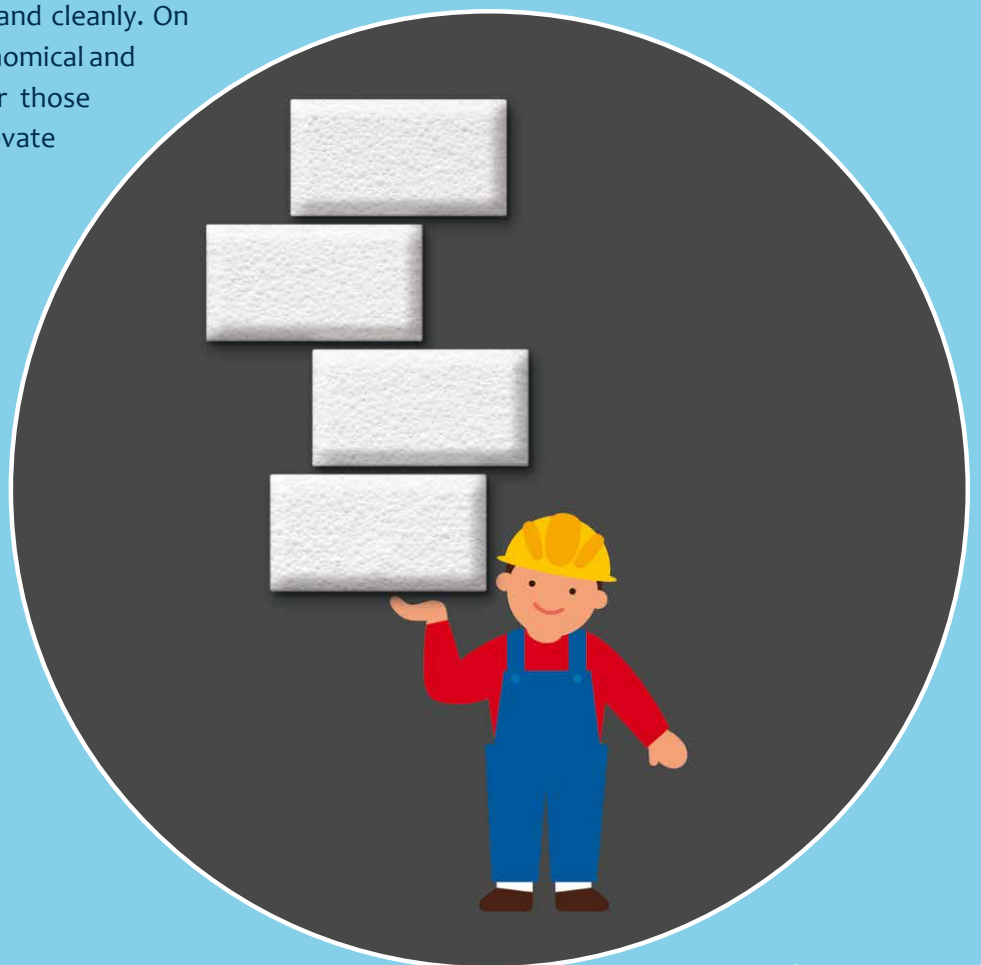


# Installation: workers enjoy handling EPS

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. EPS is free of harmful or irritating components. There is no need to wear PPE (Personal Protective Equipment) during handling of EPS.

## 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 does not jeopardise 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 the need for 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 buildings. This can undermine the integrity of the structure, and create a poor, unhealthy indoor environment. Unlike some other insulation products, EPS actively discourages mould growth. 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 due, for instance, 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 does not impact a good indoor air quality, because emissions of volatile organic compounds are below any level of interest (LCI-values<sup>1</sup>) as indicated by existing and proposed national or EU regulation (e.g. French regulation, AGBB<sup>2</sup>-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 cool during hot ones. A constant comfortable inside temperature can be maintained without excessive heating or air conditioning costs and related environmental burden.





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

The use of insulation material in Europe has increased since the 1960s. 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 renovation<sup>3</sup>.

During renovation or demolition of EPS, there are no issues to be concerned about the 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.



<sup>3</sup> 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 their service life EPS products can be treated in many ways without raising health concerns. The preferred options according to the EU waste hierarchy are: reuse > recycling > incineration > landfill. The preferred option for EPS is to be recycled, thus contributing positively to the circular economy. If waste containing EPS is landfilled, this is a total waste of resources. However, in this case, there is no danger from 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 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 collates and focuses the EPS industry interest in ensuring that its benefits are promoted and its needs are heard with a special focus on:

- Health, Safety and the Environment
- Standardisation and Regulation
- Fire performance and safety
- Advocacy and Strategic Alliances
- Quality and Compliance
- Innovation
- Competitive Positioning

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