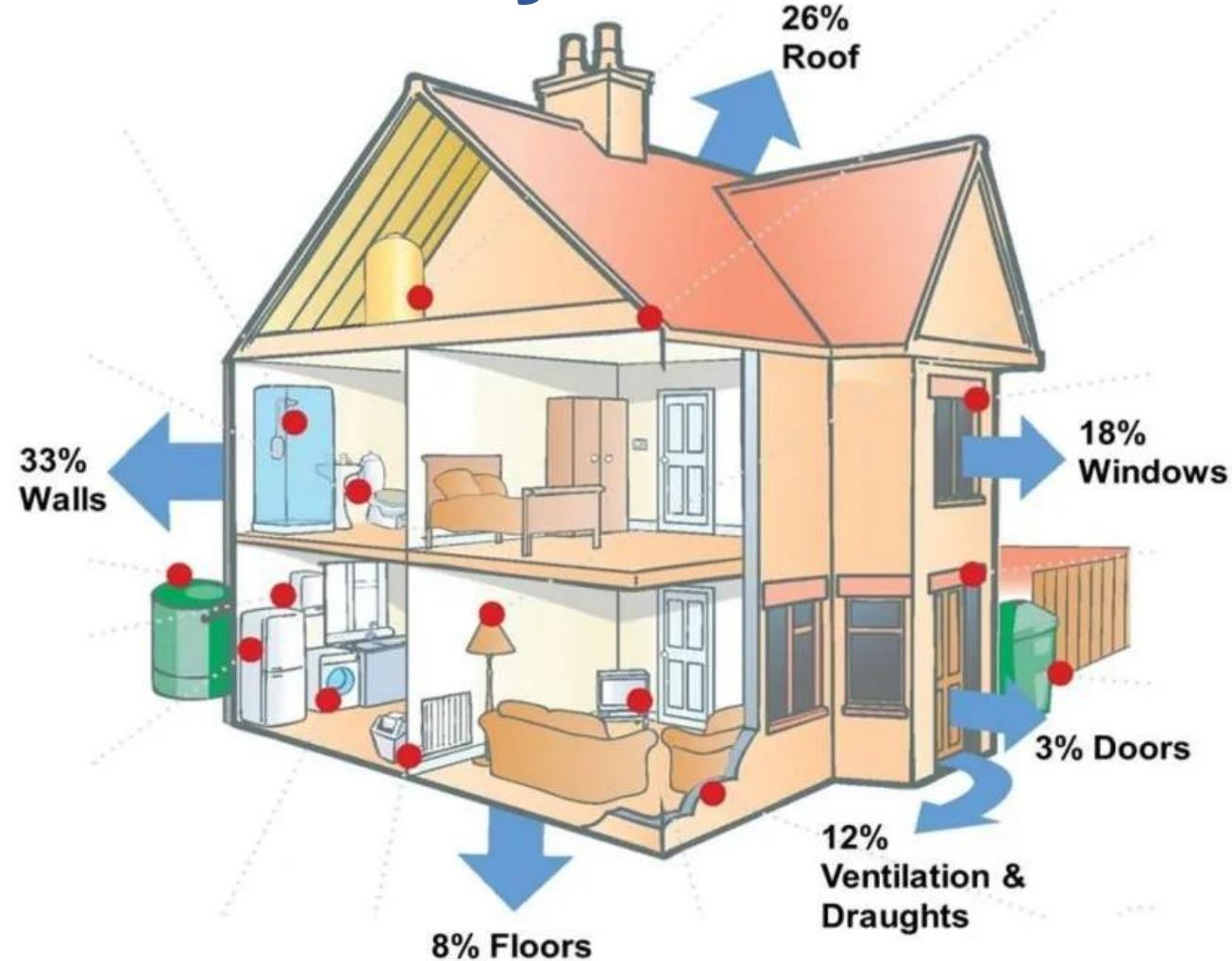




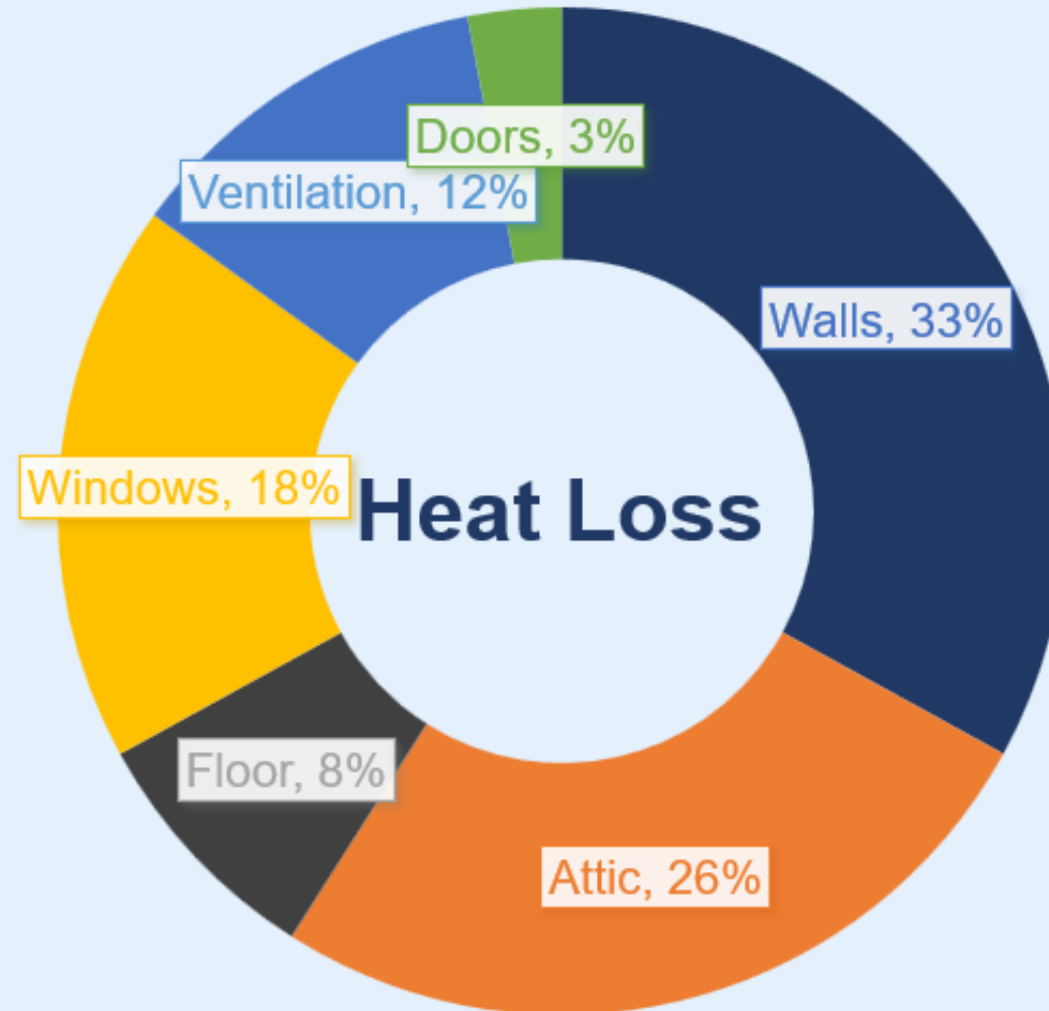
Efficient Home Insulation: Reduce Energy Bills and Carbon Footprint

By Team 11

Looking to insulating your home? Here is what you should know



STATISTICS



AGENDA

Introduction

Problem Description

Problem Solution

Thermal Resistance

Proposed Materials and Improvements

SDGs

Conclusion



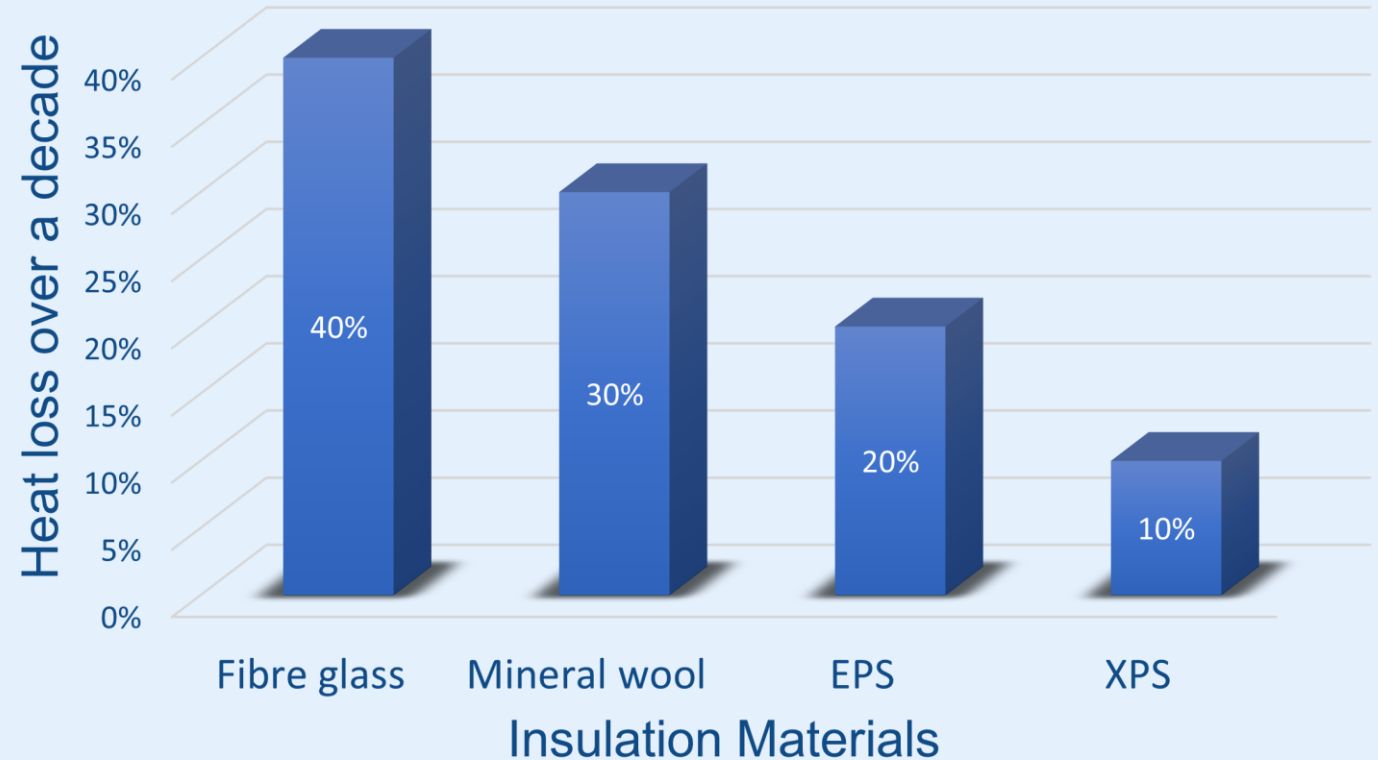
INTRODUCTION

Inefficient home insulation system:

- Outdated or poorly installed insulation material
- Leads to energy waste
- Impact climate change

- Fiber glass insulation loses 40% heat when exposed to moisture
- Mineral wool loses 30% heat due to inadequate installation

Heat loss of insulation materials over a decade

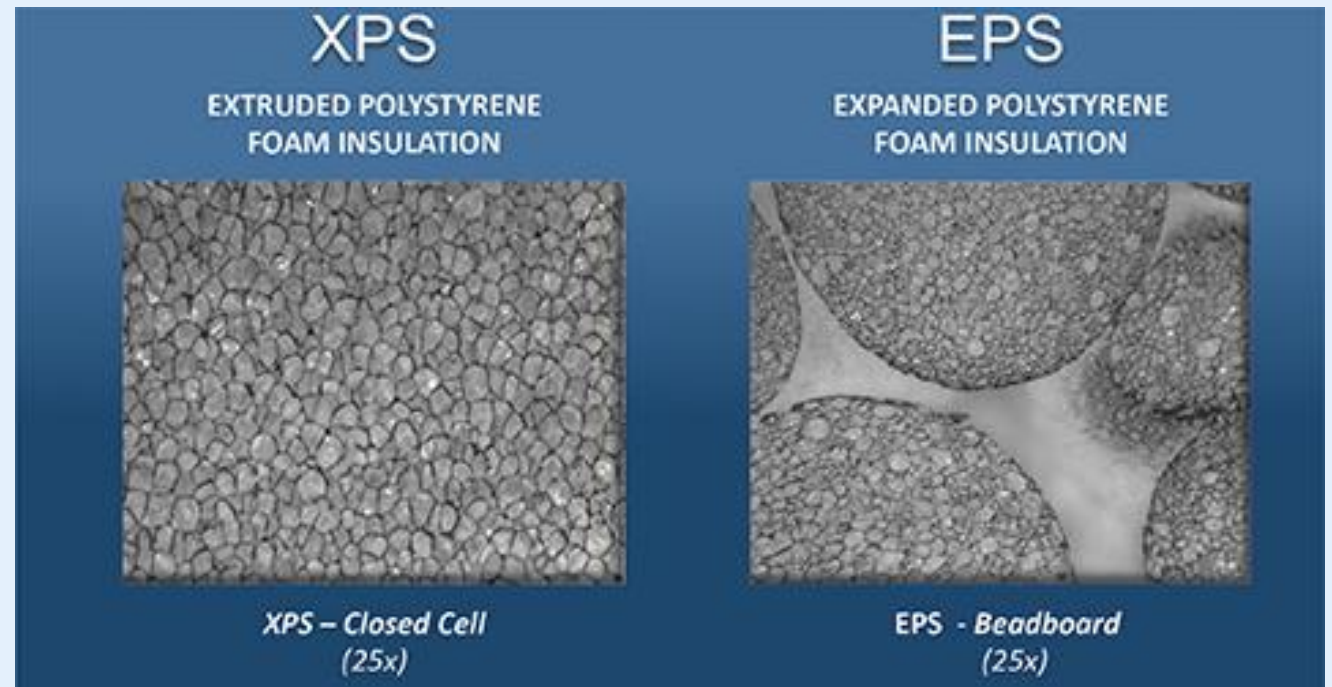


Problem
Description

EPS and XPS provides:

- more resistant to moisture
- more resistant to Air leakage
- increases Energy efficiency

Problem Solution



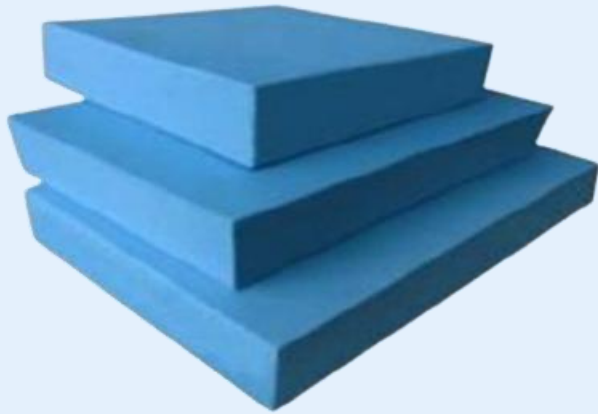
Thermal Resistance

Insulating material	R-Value/inch
Fibre glass	3.95
Mineral wool	4
EPS	4.3
XPS	5.3

- R-value measures insulation material's resistance to heat flow.
- Higher R-values provide better insulation and energy efficiency
- Proper installation and maintenance of insulation is important for achieving desired R-value and cost savings



EPS :
Expanded Polystyrene



XPS:
Extruded Polystyrene

Proposed Materials

EPS

- Excellent thermal insulation
- Light weight
- Durable

XPS

- Moisture resistant
- Stable thermal resistivity
- Recyclable

- EPS and XPS should be manufactured by recyclable and sustainable materials
- Promotes responsible production and reduces waste



Improvements

EPS and XPS Addresses:

SDG 7

- Energy Efficiency
- Renewable Energy

SDG 11

- Sustainable Buildings
- Waste Reduction

SDG



SDG



Ref: United Nations, "United Nations Sustainable Development,
<https://www.un.org/sustainabledevelopment> [accessed: Mar. 23, 2023].

Cont.

SDG 12

- Resource efficiency
- Circular economy

SDG 13

- Climate Action
- Sustainable Consumption



Conclusion

In conclusion, insulation material plays a vital role in building a more sustainable future and:

- helps reduce energy consumption.
- improves indoor air quality.

Thank you

