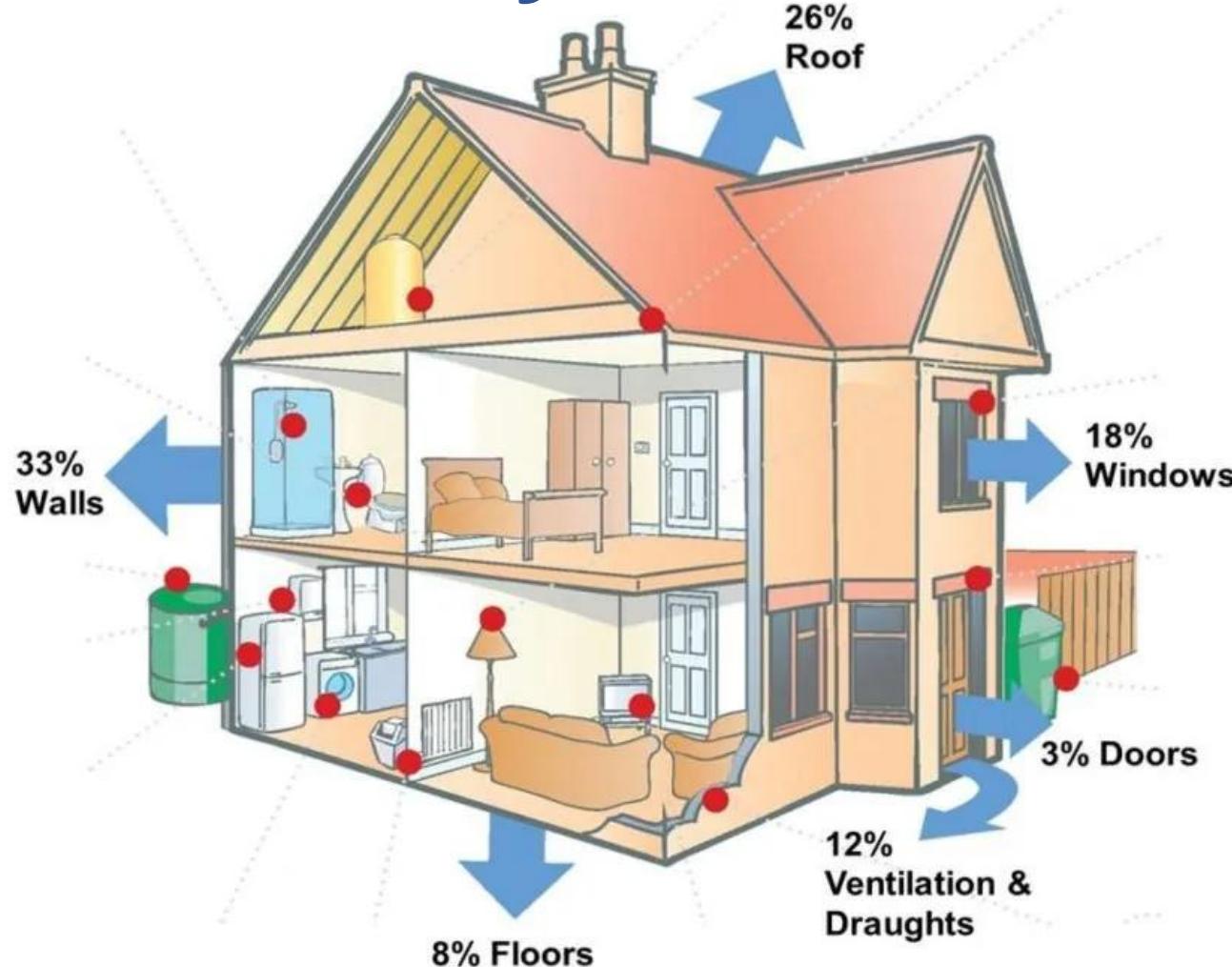




Efficient Home Insulation: Reduce Energy Bills and Carbon Footprint

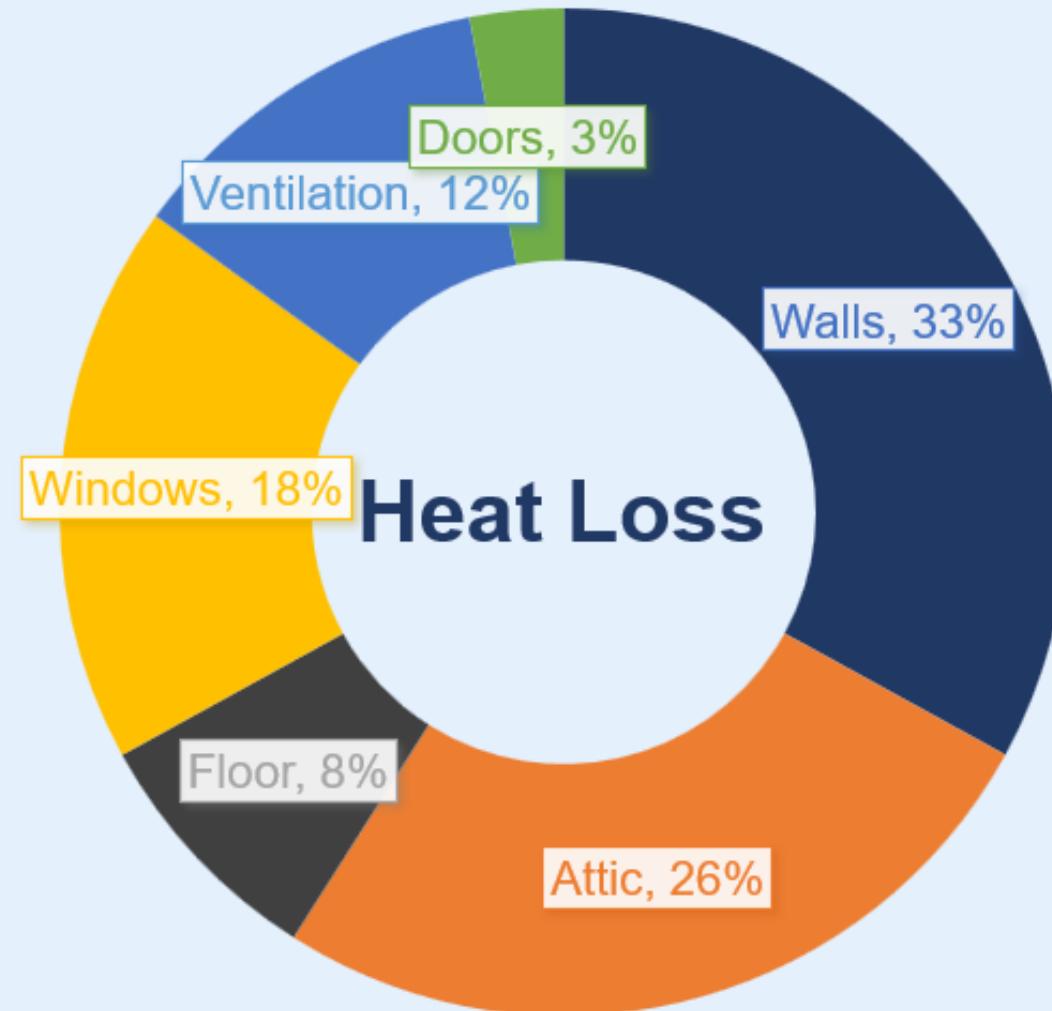
By Team 11

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



Ref: Homestratosphere's Editorial Staff & Writers, "4 types of insulation for Your House (Pros & Cons)," *Home Stratosphere*, Nov. 02, 2022, <https://www.homestratosphere.com/types-of-insulation-for-your-house> [accessed: Mar. 23, 2023].

STATISTICS



Ref: Home stratosphere's Editorial Staff & Writers, "4 types of insulation for Your House (Pros & Cons)," *Home Stratosphere*, Nov. 02, 2022, <https://www.homestratosphere.com/types-of-insulation-for-your-house> [accessed: Mar. 23, 2023].

AGENDA

Introduction

Problem Description

Problem Solution

Thermal Resistance

Proposed Materials and Improvements

SDGs

Conclusion



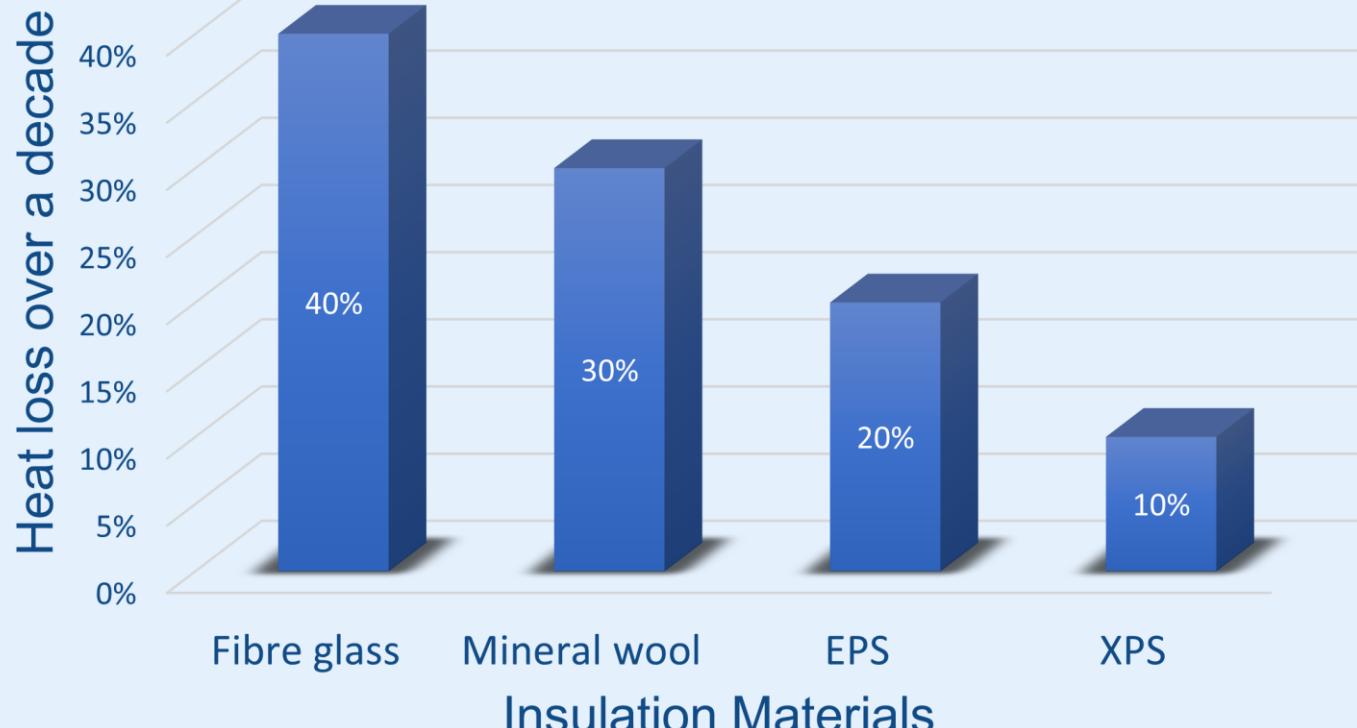
INTRODUCTION

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- Outdated or poorly installed insulation material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

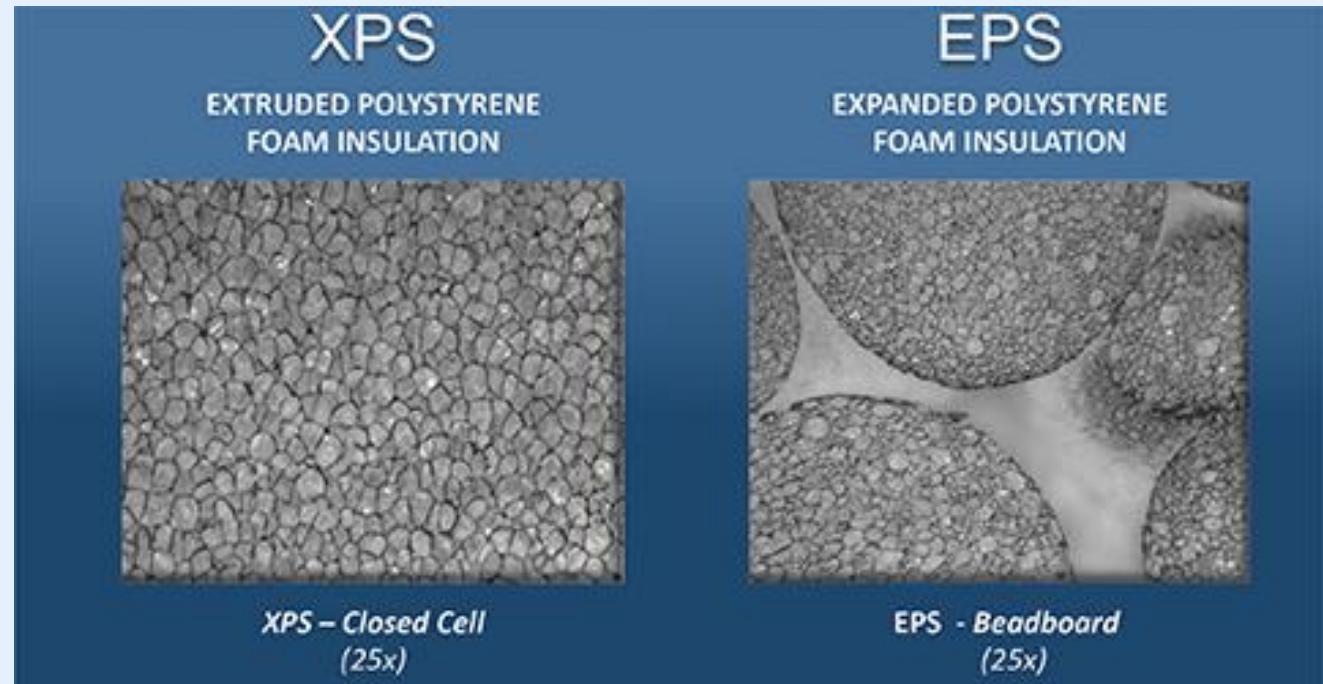


Problem Description

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



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

