Generally, rigid foam insulation is the most common way for insulation. Goal of insulation is to make a home more comfortable and energy efficient.
There are two popular types rigid foam insulation types:
Expanded Polystyrene (EPS)
Extruded Polystyrene (XPS)

Expanded Polystyrene (EPS)

What is EPS?
Expanded Polystyrene Insulation, more commonly referred to as EPS, is a closed cell insulation that has been around since the 1950’s. EPS is made of 98% trapped air and only 2% plastic, making it an efficient insulator with a small amount of raw material.

How is EPS Made?
EPS begins as tiny beads of polystyrene, which look like grains of salt. The beads are sent into a mold and expanded many times their original size using steam and pentane until they completely fill the space.

EPS Data Summary:
Cell Type: Closed
R-value: 3.6 per inch, 3.8 with film facers
Perm Rating: up to 5.0
Cost: $9 - $13 (prices vary based on product specifications)
Extruded Polystyrene (XPS) Insulation

What is XPS?

Expanded Polystyrene, referred to as XPS, is a closed cell insulation product commonly used in remodeling and new construction applications. Due to the manufacturing process, XPS insulation is typically available only in standard dimension square or rectangular boards.

How is XPS Made?

XPS insulation begins as polystyrene crystals, which are combined with special additives and a gas blowing agent. The materials are fed into an extruding machine, where they are blended and melted into a thick liquid. The liquid is processed through a die, expanded into foam, is shaped, cooled, and finally, trimmed.

XPS Data Summary:

- Cell Type: Closed
- R-value: 4.7 per inch
- Perm Rating: <1.0 up to 1.5
- Cost: $15-$20 per piece (prices vary based on product specifications)

Expanded Polystyrene vs Extruded Polystyrene

www.lightweight-wall.com
EPS and XPS R-values Over Time.

<table>
<thead>
<tr>
<th>Cell Form</th>
<th>Closed Cell</th>
<th>Closed Cell</th>
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<tbody>
<tr>
<td>R-value / Inch</td>
<td>3.6</td>
<td>5.0</td>
</tr>
<tr>
<td>Perm Rating / Inch</td>
<td>Up to 5.0</td>
<td>Up to 1.5</td>
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<tr>
<td>Price</td>
<td>$</td>
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<tr>
<td>Avg. Warranty</td>
<td>Transferable Lifetime</td>
<td>0-20 years</td>
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Expanded Polystyrene (EPS)  Extruded Polystyrene (XPS)