Air Barrier Specifications

<table>
<thead>
<tr>
<th>Component</th>
<th>Air Permeability (l/(s-m²)@75 Pa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>0.02 l/(s-m²)@75 Pa</td>
</tr>
<tr>
<td>Assembly</td>
<td>0.20 l/(s-m²)@75 Pa</td>
</tr>
<tr>
<td>Enclosure/Compartment</td>
<td>2.00 l/(s-m²)@75 Pa</td>
</tr>
</tbody>
</table>

**NORMALIZED AIR FLOW LEAKAGE AREAS**

- 10 Pascal: 0.020 l/(s-m²)@20 Pa
- 4 Pascal: 0.004 l/(s-m²)@4 Pa
How Tight is Too Tight

Drywall adhesive on both sides of first interior stud

Drywall adhesive at bottom plate and top plate

Vinyl siding
Ventilated and drained cavity
Drainage plane (vapor permeable building paper, house wrap)
OSB sheathing
Insulated wood stud cavity
Cavity insulation
Polyethylene air barrier and vapor barrier (Class I vapor retarder)
Gypsum board
Latex paint or vapor semi-permeable textured wall finish

Interior Air Flow Retarder Using Polyethylene
How Tight is Too Tight

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How Tight is Too Tight

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Stuff That Is Not Particularly Useful But Studied and Researched to Death

Stuff That Is Very Useful but Ignored by the Research Community

“this is called Physics”

Stuff That Is Not Particularly Useful But Studied and Researched to Death

Stuff That Is Very Useful but Ignored by the Research Community

“this is called Engineering”
Flow Through Orifices
Turbulent Flow - “inertial effects”

Flow Through Porous Media
Laminar Flow - “viscosity effects”

“true but not useful”
how tight is too tight

\[ Q = A \times C_{D} \times \left( \frac{P}{2} \right)^{\frac{1}{2}} \]  
Bernoulli

\[ Q = C_{k} \times \left( P \right) \]  
Darcy

\[ Q = A \times C_{D} \times \left( \frac{P}{2} \right)^{\frac{1}{2}} \]  
Bernoulli

\[ Q = C_{k} \times \left( P \right)^{\frac{1}{2}} \]  
Darcy

\[ Q = A \times C \times \left( P \right)^{n} \]  
Kronval "an engineer"
How Tight is Too Tight

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