Airtight, cellulose insulated, assemblies.
Simple advice from the woods of Maine

Jesper Kruse, Maine Passive House
Passive House Principles:

- Super Insulated
- Triple Pane Windows
- No Thermal Bridging
- Mechanical Ventilation
- Airtight
- Passive Solar Gains
- Energy Modeling
Super Insulated

No Thermal Bridging

Airtight
CHEERS
Comfort
Health
Energy
Environment
Resilience
S
Certified Passive House
Double stud wall
Passive House Standard
TJI walls and rafters
Passive House retrofit
TJI walls 2015-never ending
High Performance
Double stud wall
TJI rafters
Oxbow Brewery
TJI rafters
Double stud walls

5500W kept it heated through a Maine winter
Disclaimer:
Not all insulation is cellulose
Structural connections inside air barrier

No load under TJIs
Airtight barrier w/low perm rating close to interior

Wind and Weather Resistant Barrier with high perm rating
Dense packed cellulose

23.5”

15.5”
<table>
<thead>
<tr>
<th>Assembly</th>
<th>Building Assembly Description</th>
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</thead>
<tbody>
<tr>
<td>2</td>
<td>2x6 with 10&quot; TJI</td>
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<table>
<thead>
<tr>
<th>Primary Material (optional)</th>
<th>Resistivity R per inch</th>
<th>Secondary Material (optional)</th>
<th>Resistivity R per inch</th>
<th>Tertiary Material</th>
<th>Resistivity R per inch</th>
<th>Thickness [in]</th>
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<tbody>
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- Percentage of Mat#12: 2.0%
- Percentage of Mat#13: 14.0%
- Total Thickness: 16.9 in

R-Value: 56.8 (hr*ft²/F/°F)
U-Value: 0.0176 (BTUhr/ft²/F)
2x6 wall 24” OC
1/2” ZIP Tape
10-12” I-Joist

5” GRK Screw

Vapor Open Membrane
1/2” window buck

Low perm rating membrane or 1/2” zip

Subslab vapor barrier taped to zip first
Reinforced membrane
Ridge beam below rafters
As the rafters get packed with cellulose they start to bulge out
d and the staples start to tear
so turn the staples in the direction of the rafter.