Extended Plate and Beam (EP&B) is an advanced wall system developed by Home Innovation Research Labs. EP&B provides a high-performing wall at reasonable cost and effort that meets or exceeds the prescriptive insulation requirements of the IECC for all U.S. climate zones.

EP&B is based on tried-and-true lumber construction methodologies, integrating rigid foam sheathing with standard framing practices into a system that preserves many conventional construction features and minimizes builder risk. The Extended Plate and Beam (EP&B) wall system is composed of familiar wall materials but in a different configuration:

- 2x4 studs, with top and bottom plate extensions of 2x6
- Continuous insulation exterior to the wall cavity, interior to the WSP
- More than 95% of the wall area free of thermal bridging
- Common methods and materials for framing, air sealing, insulation, drainage plane and siding attachment
- Double rim board (beam) that is also a header

EP&B ADVANTAGES

The rigid foam layer keeps cavities warmer to improve moisture performance, and keeps wall surfaces warmer to increase comfort.

EP&B walls cost an average of $0.55/SF LESS than an IECC R-13+10 c.i. prescriptive wall — that can translate to $100’s per house.

Because the OSB protects the foam layer, EP&B is a good candidate for wall panelization.

An EP&B wall can be configured to meet or exceed the prescriptive requirements of every U.S. Climate Zone.

Download a PDF of the full-length EP&B Construction guide here: www.homeinnovation.com
**EP&B Construction Summary**

EP&B walls cost the same or less than IECC code compliant R-13+10 walls.

**EP&B 2-Story Wall Detail (First Floor Bottom Plate Detail Not Shown)**

**EP&B Connection Schedule** (Use IRC Table R602.3(1) for all other)

**Note:** Staples are not an acceptable substitute for nails.

<table>
<thead>
<tr>
<th>Connection</th>
<th>Nails</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perimeter (edge) of Wood Sheathing</td>
<td>3.5 in. x 0.131 in.</td>
<td>3 in. o.c.</td>
</tr>
<tr>
<td>Field of Wood Sheathing</td>
<td>3.5 in. x 0.131 in.</td>
<td>6 in. o.c.</td>
</tr>
<tr>
<td>Corner studs in contact with each other</td>
<td>3 in. x 0.131 in.</td>
<td>12 in. o.c.</td>
</tr>
<tr>
<td>Corners: WSP from both intersecting walls to a common 2x framing member</td>
<td>2.5 in. x 0.131 in.</td>
<td>6 in. o.c.</td>
</tr>
<tr>
<td>Corner studs separated by up to 2 in. of rigid foam, 2 options</td>
<td>5 in. x 0.135 in.</td>
<td>6 in. o.c.</td>
</tr>
<tr>
<td></td>
<td>6 in. x 0.190 in. SIP screws</td>
<td>12 in. o.c.</td>
</tr>
</tbody>
</table>

**EP&B Walls**

1. Siding
2. Weather Resistive Barrier
3. Wood sheathing
4. Rigid foam
5. Framing/insulation
6. Drywall

- Extended plates provide a 2-in. pocket for rigid foam insulation.
- Windows are framed with 2x4’s; a 1x6 sill can be added for additional support if desired.
- Doors are framed with either 2x4’s (typical) or 2x6’s (sliders or heavy-duty).
- Structural wood sheathing is attached directly to the extended plates, for shear resistance.
- Double rim provides load transfer between floors.
- Double rim can act as a header for the openings below (joist hangers required).

Lab tests confirm good structural performance with the double rim located at the exterior plane. **Inserting a double or single rim by 1 in.** allows for an exterior **continuous insulation layer.** A 2 in. inset is allowed if the WSP spans the entire wall/rim assembly, and if the scheduled connection is made at the sill plate.

**A single rim board is not sufficiently strong** to perform the duty of a header. With a single rim, utilize typical headers of solid or manufactured lumber.

Install both wood and foam sheathing **vertically,** align joints with studs and **alternate spacing** so wood and foam joints are not coincident.

**Caulk** between WSP and top and bottom plates for a good first-line-of-defense air seal.

Prescriptive requirements for the EP&B wall system will be submitted for inclusion into building codes soon. The use of the EP&B wall system in a specific project must be approved by the design professional for that project. The specifications for the EP&B wall system provided in this Guide are intended for use consistent with the scope of the International Residential Code (IRC), and are not approved for high-seismic or high-wind areas.