### Table 402.4.2
**Air Barrier and Insulation Inspection Component Criteria**

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>COMPONENT</th>
<th>CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Air barrier and thermal barrier</td>
<td>Exterior thermal envelope insulation for framed walls is installed in substantial contact and continuous alignment with building envelope air barrier. Breaks or joints in the air barrier are filled or repaired. Air-permeable insulation is not used as a sealing material. Air-permeable insulation is inside of an air barrier.</td>
</tr>
<tr>
<td>2</td>
<td>Ceiling/attic</td>
<td>Air barrier in any dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed. Attic access (except unvented attic), knee wall door, or drop down stair is sealed.</td>
</tr>
<tr>
<td>3</td>
<td>Walls</td>
<td>Corners and headers are insulated. Junction of foundation and sill plate is sealed.</td>
</tr>
<tr>
<td>4</td>
<td>Windows and doors</td>
<td>Space between window/door jambs and framing is sealed.</td>
</tr>
<tr>
<td>5</td>
<td>Rim joists</td>
<td>Rim joists are insulated and include an air barrier.</td>
</tr>
<tr>
<td>6</td>
<td>Floors (including above-garage and cantilevered floors)</td>
<td>Insulation is installed to maintain permanent contact with underside of subfloor decking. Air barrier is installed at any exposed edge of insulation.</td>
</tr>
<tr>
<td>7</td>
<td>Crawl space walls</td>
<td>Insulation is permanently attached to walls. Exposed earth in unvented crawl spaces is covered with Class I vapor retarder with overlapping joints taped.</td>
</tr>
<tr>
<td>8</td>
<td>Shafts, penetrations</td>
<td>Duct shafts, utility penetrations, knee walls and flue shafts opening to exterior or unconditioned space are sealed.</td>
</tr>
<tr>
<td>9</td>
<td>Narrow cavities</td>
<td>Batts in narrow cavities are cut to fit, or narrow cavities are filled by sprayed/blown insulation.</td>
</tr>
<tr>
<td>10</td>
<td>Garage separation</td>
<td>Air sealing is provided between the garage and conditioned spaces.</td>
</tr>
<tr>
<td>11</td>
<td>Recessed lighting</td>
<td>Recessed light fixtures are air tight, IC rated, and sealed to drywall. Exception-fixtures in conditioned space.</td>
</tr>
<tr>
<td>12</td>
<td>Plumbing and wiring</td>
<td>Insulation is placed between outside and pipes. Batt insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation extends behind piping and wiring.</td>
</tr>
<tr>
<td>13</td>
<td>Shower/tub on exterior wall</td>
<td>Showers and tubs on exterior walls have insulation and an air barrier separating them from the exterior wall.</td>
</tr>
<tr>
<td>14</td>
<td>Electrical/phone box on exterior walls</td>
<td>Air barrier extends behind boxes or air sealed-type boxes are installed.</td>
</tr>
<tr>
<td>15</td>
<td>Common wall</td>
<td>Air barrier is installed in common wall between dwelling units.</td>
</tr>
<tr>
<td>16</td>
<td>HVAC register boots</td>
<td>HVAC register boots that penetrate building envelope are sealed to subfloor or drywall.</td>
</tr>
<tr>
<td>17</td>
<td>Fireplace</td>
<td>Fireplace walls include an air barrier.</td>
</tr>
</tbody>
</table>

**NORTHWEST ENERGY STAR** has an information web page that is designed to help builders and their trade partners identify, solve, and prevent problems during the home construction process. Check out their web site at:  
http://www.northwestenergystar.com/partner-resources/criticaldetails/index.html
Air sealing key points

Seal airtight IC-rated recessed light fixtures to drywall

Seal gap between electrical box and drywall

Seal wiring and plumbing penetrations

Fan vented through exterior wall sealed at penetration

Insulate and install sheet material behind bathtub

Seal plumbing penetrations

Window sealed into rough opening using backer rod

Seal lights and bath vent fan to ceiling drywall

Insulate headers

Seal airtight IC-rated recessed light fixtures to drywall

Insulate exterior wall

Unfaced batts

Caulk

Narrow stud cavity batts are cut to fit

Electrical panel box, recommend install on interior (non-insulated) wall. If installed on exterior wall, air barrier shall extend behind box or air-sealed box shall be installed.
Air sealing key points continued

Chases and common by-passes

1. Seal top plate
2. Cap top of chase with solid air barrier and insulate above dropped soffit
3. Install air barrier on interior of all insulated walls
4. Seal bottom plate

Electrical/boxes and fixtures to drywall

5. Seal electrical penetrations
6. Seal plumbing penetrations
7. Seal HVAC penetrations
8. Seal plate
9. Seal bottom plate

Seal penetrations in common wall

10. Seal bottom plate
11. Seal HVAC boot penetrations

Shower/tub drain rough opening

12. Install and seal air barrier behind tub (required)
13. Seal bathtub drain penetration
14. Seal HVAC penetrations
15. Seal electrical penetrations
16. Seal plumbing penetrations
Air sealing key points continued

### Window rough opening

Use backer rod or spray foam (appropriate for windows) to fill gaps between window/door and rough opening.

### Wall cross-section

1. Glue drywall to top and bottom plates (recommended)

2. Caulk bottom plate to subfloor

3. Caulk band joist to subfloor and plates

4. Glue drywall to top plate (recommended)

5. Tape or caulk exterior sheathing seams

6. Under floor insulation must be installed in permanent contact with subfloor (air barrier required at any exposed edge of insulation)

7. Sealed CLASS I vapor retarder required in crawlspace

Insulation is permanently attached to walls.

Sill gasket or double-bead of caulk under bottom plate

Install exterior water resistant barrier as per IRC703.2

Wind wash baffle and dam for air-permeable insulation
Air sealing key points continued

Combustion chase penetrations

- Seal around chimney flues with sheet metal cap
- Rigid foam option (recommend covering with ignition barrier for fire protection)
- Blocking above supporting wall for cantilevered floor (required)
- Insulation above top plate of supporting wall
- Underfloor insulation must be installed in permanent contact with subfloor (air barrier required at any exposed edge of insulation)

Combustion closet

- Combustion air inlets as per mechanical and/or fuel gas code
- Flue stack
- Seal gas and plumbing penetrations through walls
- Insulated walls (not required unless walls are part of building thermal envelope)
- Insulated water heater (not required)
- Door closes against solid threshold
- Bottom plate sealed

Exterior penetrations

- Caulk exterior wall penetrations for refrigeration lines, condensate line, etc.
Air sealing key points

Install blocking and rafter baffle to prevent wind-washing if vented, insulated roofline (required)

Sealed attic-side air barrier (required)-OSB, insulated sheathing, etc.

Attic knee-walls

1. Blocking - fit in joist cavity, caulked or foamed

2. Caulk and seal rough opening

Rigid insulation (recommended)
Weather-stripe door opening and threshold

Two-level attic

1. Attic kneewall requires insulation

Caulk
Glue

Conditioned space

Unconditioned Space

Air barrier required, (rigid board recommended)
Air sealing key points continued

Attic scuttle

Insulation dams prevent loose-fill insulation from falling through access

Hatch lid pushes up and out of the way for access

Rigid insulation plus batt (recommended)

Attic pull-down stairs

Rigid insulation box forms lid for pull-down attic staircase (recommended)

Insulation dams prevent loose-fill insulation from falling through access

Cover box pushes up and out of the way for access

Seal gap between frame and rough opening with caulk, backer rod, or foam

Boxed enclosure for staircase has rigid hinged lid with insulation on top

Attic pull-down stairs

Insulation dams prevent loose-fill insulation from falling through access

Seal gap between frame and rough opening with caulk, backer rod, or foam

Weatherstripping
Air sealing key points continued

- Garage (unconditioned)
- Air barrier behind steps
- Garage to house door
- Garage (unconditioned)
- Web trusses
- Rigid foam (recommend covering with ignition barrier, if required)
- Basement (conditioned)
- Inset garage to house door
- Garage (unconditioned)
- Web truss
- Air seal
- Sheath and insulate
- Rigid foam (recommend covering with ignition barrier, if required)
- Basement (conditioned)