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*Numbered descriptions coordinate with Checklist items*
Why SystemVision ™?

Homeowner Savings- Proper construction methods reduce the overall costs to the homeowner.

Durability- SystemVision built homes are built to last.

Health & Safety- SystemVision homes are built with occupant health and safety as a main focus in the design.

Comfort- Proper installation and properly designed equipment lead to guaranteed homeowner comfort.
Foundation
1. Finished grade shall be sloped a minimum of 6 inches within the first 10 feet away from the foundation walls.

5. Crawl spaces are graded to a low point and have a sump pump or drain to daylight roughed in.


https://basc.pnnl.gov/resource-guides/drain-or-sump-pump-installed-basements-or-crawlspace
2. Radon-ready house/passive mitigation: Install a 3 to 4 inch diameter PVC pipe T-fitting from below the crawl space liner or slab. Connect it to a pipe that runs vertically through the house and exhausts to the exterior a minimum of 12 inches above the roof and 10 feet from openings into conditioned spaces. Install a power supply accessible to the upper top 50% of the pipe in case there is a need to convert to an active radon system.

https://basc.pnnl.gov/resource-guides/vertical-radon-ventilation-pipe
3. A vapor/moisture barrier with 100% coverage and overlapped seams is installed under all slabs.

4. Slabs built in Climate Zones 4 and 5 are insulated to at least R-10. (vertical slab edge insulation)

In a framing inspection, the crawl space must have:

- A vapor/moisture barrier covering the ground.

- If crawl space vents are used, they will be sealed when construction is complete.

- If crawl space vents are not used, a drying strategy may be needed during construction.

Framing
7. Roof framing allows for 10" of vertical space from the exterior edge of the top plate to roof sheathing.

https://basc.pnnl.gov/resource-guides/attic-eave-minimum-insulation#quicktabs-guides=0
8. Attic platforms are raised to a height that allows for the installation of the same insulation R-value used elsewhere in the attic (Climate Zone dependent).

https://basc.pnnl.gov/resource-guides/insulation-below-attic-platforms
9. Metal drip edge flashing shall be installed on all roof edges according to National Roofing Contractors Association or manufacturer specifications.
10. Roof overhang depth from the face of the wall to the face of the fascia must be a minimum of 12 inches.

11. At least one entry will have a weather-protected overhang of 3 feet in depth and a width of at least 18 inches from either side of the entry’s rough opening.
12. If continuous rigid insulation is not used, all exterior wall studs are 2×6

https://basc.pnnl.gov/resource-guides/advanced-framing-minimum-wall-studs#quicktabs-guides=0
13. Transfer grills, jumper ducts, or individual room returns are roughed in above bedroom doors.

https://basc.pnnl.gov/videos/ducted-returns

https://basc.pnnl.gov/resource-guides/ducted-returns#quicktabs-guides=0
14. One bathroom shall have continuous blocking in walls using a minimum of 2x6 with the bottom located 31 inches above the floor around both toilet and shower to allow for future grab-bar installation.

https://basc.pnnl.gov/images/right-%E2%80%93-blocking-was-installed-walls-behind-tub-installation-grab-bars

15. One house entry door, one bedroom entry and one bathroom entry must be a minimum of 32 inches clear. A visitable route from an exterior entrance through interior hallways must provide access to these interior entries, and this route must be a minimum of 36 inches clear throughout.

[Images of a house interior]

https://visitability.org/
Air Sealing
16. Sill seal and/or caulk has been used to air seal bottom plates of exterior to the subfloor or slab.

https://basc.pnnl.gov/resource-guides/air-sealing-sill-plates
17. All penetrations and cracks in the building shell are air sealed with foam, mastic or caulk. This includes, but is not limited to: holes for MEP, bands between floors, beam pockets, bottom plate to sheathing, top plate to sheathing.

https://basc.pnnl.gov/resource-guides/air-sealing-electrical-wiring

18. Rigid air barrier is installed and air sealed at all chases, behind all tubs and showers, and on the attic side of all knee walls.


https://basc.pnnl.gov/resource-guides/attic-knee-walls

https://basc.pnnl.gov/resource-guides/walls-behind-fireplaces

https://basc.pnnl.gov/resource-guides/staircase-walls
19. All air leakage paths from the home to the crawl space and from the crawl space to outside shall be air sealed.

https://basc.pnnl.gov/resource-guides/unvented-insulated-crawlspaces#quicktabs-guides=1
20. All recessed lights are insulation contact (IC) rated and airtight.

21. All bath fans are rated to exhaust at least 70 CFM and point in the direction of the termination location.

Not ideal but passable
23. Building cavities shall not be used as ducts.

https://basc.pnnl.gov/resource-guides/building-cavities-not-used-supply-or-return-ducts
Insulation
1. Insulation levels meet or exceed those in the following table:

<table>
<thead>
<tr>
<th>CLIMATE ZONE</th>
<th>WALLS</th>
<th>CEILING</th>
<th>FLOORS</th>
<th>CRAWL SPACE WALLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone 3</td>
<td>R-19 or R-15 + 3 cont.</td>
<td>R-38</td>
<td>R-19</td>
<td>R-5 cont.</td>
</tr>
<tr>
<td>Zone 4</td>
<td>R-19 or R-15 + 3 cont.</td>
<td>R-49</td>
<td>R-19</td>
<td>R-10 cont.</td>
</tr>
<tr>
<td>Zone 5</td>
<td>R-21 or R-15 + 5 cont.</td>
<td>R-49</td>
<td>R-30</td>
<td>R-15 cont.</td>
</tr>
</tbody>
</table>
2. Insulation is installed to Insulation Institute’s or manufacturer’s specifications, with no gaps, voids, compression, misalignment, or wind intrusion. Grade 1 (SystemVision insulation requirements are above code)

https://basc.pnnl.gov/resource-guides/insulation-installation-achieves-resnet-grade-1
3. If using spray foam at the roof deck to create a sealed attic, use a minimum of 6 inches of either open or closed cell spray foam and covering the roof rafters.
4. All insulated walls (including knee walls, walls behind tubs, walls under stairs, and framed walls in crawl spaces) are framed with six rigid, air-tight sides.


https://basc.pnnl.gov/resource-guides/attic-knee-walls

https://basc.pnnl.gov/resource-guides/staircase-walls
5. Wind baffles are installed along the perimeter of attic insulation, including vaulted and cathedral ceilings, and allow at least 8 in. of insulation to be *installed over* the top plate.

https://basc.pnnl.gov/resource-guides/attic-eave-minimum-insulation

https://basc.pnnl.gov/resource-guides/wind-washing
6. Sill seal is installed on the vertical face of all interior and exterior wall top plates.

Exception: builder may use caulk, foam, or mastic to seal top plates to drywall from the attic side after drywall is installed.

https://basc.pnnl.gov/resou rce-guides/air-sealing-drywall-top-plate
7. Windows and doors have backer-rod, caulk, or foam between the frame and rough opening.

8. UL listed bucket mastic has been used to seal all connections (flex, collars, plenums, boots, and boxes) in the duct system (total duct leakage must be less then 3%). Building cavities shall not used as ducts.

9. Metal seams have been sealed with bucket mastic.

10. Rigid metal splicing collars have been used at all flex duct splices and have been sealed with bucket mastic.

https://basc.pnnl.gov/resource-guides/sealed-and-insulated-metal-ducts
11. Fresh air ventilation is filtered. The filter will be easily accessible. Include manual damper.

https://basc.pnnl.gov/resource-guides/whole-building-delivered-ventilation
13. Ventilation ducts do not have turns or bends greater than 90°.
14. Ventilation ducts terminate beyond the exterior skin of the home.
15. All ventilation ducts, excluding kitchen exhaust ducts, are insulated.
16. Transfer grills, jumper ducts, or individual room returns are installed for pressure balancing in all bedrooms.

https://basc.pnnl.gov/resource-guides/transfer-grilles
Finishing Touches
1. One house entry door, one bedroom entry and one bathroom entry must be a minimum of 32 inches clear. A visitable route from an exterior entrance through interior hallways must provide access to these interior entries, and this route must be a minimum of 36 inches clear throughout.

https://visitability.org/
2. All penetrations in drywall for lighting, ceiling fans, bath fans, water lines, can lights, shower wands, toilet supply, dryer duct and laundry water supplies are sealed with caulk or foam.

3. Attic hatches are weather stripped and have at least R-30 insulation securely attached. This will require an insulated, air sealed and weather stripped box to be constructed for attic pull-down stairs.

https://basc.pnnl.gov/resource-guides/air-sealing-attic-access-panelsdoorsstairs
4. Electric water heaters have an uniformed energy factor (UEF) of at least 0.93. Gas water heaters have a UEF of at least 0.60.
5. The first three feet of hot and cold pipes from the water heater are insulated to at least R-4.
6. Plumbing fixtures do not exceed the maximum flow rates listed in the following table:

<table>
<thead>
<tr>
<th>FIXTURE:</th>
<th>TOILETS (dual-flush models)</th>
<th>SHOWERHEADS</th>
<th>KITCHEN FAUCETS</th>
<th>BATHROOM FAUCETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Rate:</td>
<td>1.3 GPF (1.1 &amp; 1.6 GPF)</td>
<td>2.25 GPM</td>
<td>2.2 GPM</td>
<td>1.5 GPM</td>
</tr>
</tbody>
</table>
7. Dishwashers and refrigerators, if provided by the builder, are ENERGY STAR® rated.
8. No incandescent lights have been installed in the home. All exterior lighting shall use LEDs.
9. All kitchens have a fan vented to the outside and exhaust 100 CFM.
Whole-House Ventilation: There shall be a filtered whole-house mechanical fresh air ventilation system capable of meeting the current version of ASHRAE 62.2 that complies with one of the following options:

**OPTION 1: Supply Ventilation:** Air handler cannot have a PSC motor. System shall be designed to operate intermittently and automatically based on a timer and restrict outdoor air intake when not in use (e.g., motorized damper). Ventilation at a minimum shall occur 10% of every 24 hours and at a maximum 50% of every 24 hours. If additional ventilation is needed, Advanced Energy will adjust the guarantee to account for additional energy usage.

**OPTION 2: Design and install an approved balanced ventilation strategy including ERVs or HRVs.**

https://basc.pnnl.gov/resource-guides/whole-building-delivered-ventilation
10. All baths have fans vented to outside and exhaust 50 CFM
15. Caulk or mastic has been used to seal all supply boots, return boxes, and bath fans to their rough openings.

Crawl Space Foundation

• A sump pump or drain to daylight with a backflow preventer is located at the low point of the crawl space.
• All penetrations in crawl space walls are sealed with caulk or foam.
• Vapor/moisture barrier is sealed, mechanically fastened to walls (not taped), and extends up all walls and piers to within 3" of the mudsill or floor joist.
• Vapor/moisture barrier completely covers the ground and is sealed to the wall vapor/moisture barrier and also at all seams and penetrations.
• There is either a standalone dehumidifier or a supply register with a backflow preventer that provides at least 1 CFM per 30 ft2 of floor area.
• The crawl space access door is weatherstripped and insulated to the same value as the crawl space wall.

https://basc.pnnl.gov/resource-guides/unvented-insulated-crawlspace
3. Insulation levels shall, at minimum, equal those in the following table.

<table>
<thead>
<tr>
<th>Climate Zone</th>
<th>Slab*</th>
<th>Walls</th>
<th>Ceiling*</th>
<th>Floors*</th>
<th>Crawlspace Walls*</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>NA</td>
<td>R-19</td>
<td>R-38</td>
<td>R-19</td>
<td>R-10</td>
</tr>
<tr>
<td>4</td>
<td>R-10</td>
<td>R-19</td>
<td>R-49</td>
<td>R-49</td>
<td>R-10</td>
</tr>
<tr>
<td>5</td>
<td>R-10</td>
<td>R-21</td>
<td>R-45</td>
<td>R-49</td>
<td>R-10</td>
</tr>
</tbody>
</table>


3.1. Insulation spray foam is a roof deck to create a sealed attic, use a minimum of 6 inches of either open or closed cell spray foam and covering the roof rafter.

3.5. In and around crawl space, if insulation is installed at the foundation walls, insulated them walls must be covered with a rigid air barrier and air sealed on all six sides. Crawl space access shall be insulated with a minimum of R-5 rigid insulation securely fastened, and access shall be air sealed and weatherstripped to the outdoors.

4. Heating, Air Conditioning and Ventilation

4.1. Equipment Minimum Performance Values:

4.1.1. Furnaces: At least 90% efficient.

4.1.2. AC: At least 14 SEER.

4.1.3. Heat Pumps: At least 14 SEER and 8.2 HSPF.

4.2. All duct connections shall be sealed with a UL-listed “buckle” mastic product.

4.3. Total duct leakage, measured in cubic feet per minute at 25 Pascals, shall not exceed 3% of the conditioned square footage. Building envelopes shall not be used on ducts.

4.4. Mechanical systems shall be sized to within 0.05% of the total load. ACCA Manual J room-by-room load calculations, including all inputs and outputs, shall be submitted for each plan to verify sizing. A physical copy of the load calculation with the AHRI certificate shall be attached to the AHU or submitted to the retailer prior to the final inspection.

4.5. Heat pumps shall have an outdoor thermostat installed to prevent supplementary heater operation when the heat pump is capable of meeting load. The thermostat shall be set no lower than 35°F and no higher than 40°F.

4.6. The measured airflow for each room shall be within ±20% or 25 CFM of the ACCA Manual J calculation. This will require supply dampers to be installed for bedrooms and bathrooms.

4.7. Total system airflow shall be set between 300 and 400 CFM per ton in cooling to maintain system airflow as specified by the manufacturer.

4.8. Whole-House Ventilation: There shall be a whole-house mechanical fresh air ventilation system capable of meeting the current version of ASHRAE 62.2 that complies with one of the following options:

Option 1: Supply Ventilation: Air handlers must have a PSC motor. System shall be designed to operate intermittently and automatically based on a timer and restrict outdoor air intake when not in use (e.g., motorized damper). Ventilation at a minimum shall occur 15% of every 24 hours and at a maximum of 50% of every 24 hours. If additional ventilation is needed, Advanced Energy will adjust the guarantee to account for additional energy usage.

Option 2: Design and install an approved balanced ventilation strategy including ERVs or HRVs.

4.9. Spot Ventilation: All ventilation ducts shall terminate beyond the exterior skin of the building.

4.9.5. All bathrooms shall have a fan vented to the outside that exhausts 50 CFM intermittently. (Requires a minimum fan}
4.9.2. All kitchens shall have a fan vented to the outside that exhausts 100 CFM. (Requires a minimum fan rating of 120 CFM.)

4.10. All ventilation ducts, excluding kitchen exhaust ducts, shall be insulated.

5. Pressure Balancing

5.1. All rooms within the conditioned space, except baths and laundry, shall not exceed +/- 3 Pa as pressure differential with respect to the main body when interior doors are closed and AHU is operating. Returns, transfer grilles or ducts shall be used to balance each room in addition to door undercut.

6. Plumbing

6.1. Water heaters shall have a UEF as indicated in the table:

<table>
<thead>
<tr>
<th>Water Heater Type</th>
<th>UEF Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Tank</td>
<td>0.93</td>
</tr>
<tr>
<td>Gas Tank</td>
<td>0.80</td>
</tr>
<tr>
<td>Gas Tankless</td>
<td>0.61</td>
</tr>
<tr>
<td>Heat Pump</td>
<td>Any</td>
</tr>
</tbody>
</table>

6.2. From the water heater, the first 3 feet of hot and cold pipes shall be insulated to R-4.

6.3. Toilets shall be 1.3 GPF or less (including dual-flush models). Showerheads shall be 2.25 GPM or less. Kitchen faucets shall be 2.2 GPM or less. Bath faucets shall be 1.5 GPM or less.

7. Appliances & Lighting

7.1. Dishwashers and refrigerators, if provided by the builder, shall be ENERGY STAR certified.

7.2. Home shall not have any incandescent lights. All exterior lighting shall use LEDs.

8. Aging in Place/Visitability

8.1. One house entry door, one bedroom entry and one bathroom entry must be a minimum of 32 inches clear. A visitable route from an exterior entrance through an interior hallway must provide access to these interior entries, and this route must be a minimum of 36 inches clear throughout.

8.2. One bathroom shall have continuous blocking in walls using a minimum of 2x6 with the bottom located 31 inches above the floor around both toilet and shower to allow for future grab-bar installation.

9. Combustion Safety and Radon Mitigation

9.1. Any combustion appliance inside the conditioned space or closed crawl space, other than gas ranges, shall be direct (sealed) vent or power (fan) vented. Vent-free gas logs and wood fireplaces are not allowed.

9.2. One hard-wired CO detector shall be installed per 1,000 square feet of living space (minimum one per floor) in homes with any combustion appliance located within the conditioned space or that have an attached garage.

9.3. Radon-ready house/passive mitigation: Install a 3 to 4 inch diameter PVC pipe T-fitting from below the crawl space liner or slab. Connect it to a pipe that runs vertically through the house and exhausts to the exterior a minimum of 12 inches above the roof and 10 feet from openings into conditioned spaces. Install a power supply accessible to the upper top 30% of the pipe in case there is a need to convert to an active radon system.
### Foundation

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
<th>Q/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Finished grade shall be sloped a minimum of 6 inches within the first 10 feet away from the foundation walls.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Radon-ready house/passive mitigation: Install a 3 to 4 inch diameter PVC pipe T-fitting from below the crawl space liner or slab. Connect it to a pipe that runs vertically through the house and exhausts to the exterior a minimum of 12 inches above the roof and 10 feet from openings into conditioned spaces. Install a power supply accessible to the upper top 50% of the pipe in case there is a need to convert to an active radon system.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>A vapor/moisture barrier with 100% coverage and overlapped seams is installed under all slabs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Slabs built in Climate Zones 4 and 5 are insulated to at least R-10. (vertical slab edge insulation)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Crawl spaces are graded to a low point and have a sump pump or drain to daylight roughed in.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crawl spaces have the following during the framing inspection:
- A vapor/moisture barrier covering the ground.
- If crawl space vents are used, they will be sealed when construction is complete.
- If crawl space vents are not used, a drying strategy may be needed during construction.

### Framing

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
<th>Q/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Roof framing allows for 10° of vertical space from the exterior edge of the top plate to roof sheathing.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Framing Checklist</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Attic platforms are raised to a height that allows for the installation of the same insulation R-value used elsewhere in the attic.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Metal drip edge flashing shall be installed on all roof edges according to National Roofing Contractors Association or manufacturer specifications.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Roof overhang depth from the face of the wall to the face of the fascia must be a minimum of 12 inches. At least one entry will have a weather-protected overhang of 3 feet in depth and a width of at least 18 inches from either side of the entry’s rough opening.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>If continuous rigid insulation is not used, all exterior wall studs are 2x6.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Transfer grills, jumper ducts, or individual room returns are roughed in.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>One bathroom shall have continuous blocking in walls using a minimum of 2x6 with the bottom located 31 inches above the floor around both toilet and shower to allow for future grab-bar installation.</td>
<td></td>
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<td></td>
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<tr>
<td>14.</td>
<td>One house entry door, one bedroom entry and one bathroom entry must be a minimum of 32 inches clear. A visible route from an exterior entrance through interior hallways must provide access to these interior entries, and this route must be a minimum of 36 inches clear throughout.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Air Sealing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Sill seal and/or caulk has been used to air seal bottom plates of exterior to the subfloor.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>All penetrations and cracks in the building shell are air sealed with foam, mastic or caulk. This includes, but is not limited to: holes for MEP, bonds between floors, beam pockets, bottom plate to sheathing, top plate to sheathing.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Rigid air barrier is installed and air sealed at all chases, behind all tubs and showers, and on the attic side of all knee walls.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>All air leakage paths from the home to the crawl space and from the crawl space to outside shall be air sealed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>All recessed lights are insulation contact (IC) rated and airtight.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>All bath fans are rated to exhaust at least 70 CFM and point in the direction of the termination location.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Insulation Levels Meet or Exceed Those in the Following Table:

<table>
<thead>
<tr>
<th>CLIMATE ZONE</th>
<th>WALLS</th>
<th>CEILING</th>
<th>FLOORS</th>
<th>CRAWL SPACE WALLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone 3</td>
<td>R-19</td>
<td>R-38</td>
<td>R-19</td>
<td>R-5 cont.</td>
</tr>
<tr>
<td>Zone 4</td>
<td>R-19</td>
<td>R-49</td>
<td>R-19</td>
<td>R-10 cont.</td>
</tr>
<tr>
<td>Zone 5</td>
<td>R-21</td>
<td>R-49</td>
<td>R-30</td>
<td>R-15 cont.</td>
</tr>
</tbody>
</table>

### Insulation Checklist

1. Insulation is installed to Insulation Institute's or manufacturer's specifications, with no gaps, voids, compression, misalignment, or wind intrusion.

2. If using spray foam at the roof deck to create a sealed attic, use a minimum of 6 inches of either open or closed cell spray foam and covering the roof rafters.

3. All insulated walls (including knee walls, walls behind tubs, walls under stairs, and framed walls in crawl spaces) are framed with six rigid, air-tight sides.

4. Wind baffles are installed along the perimeter of attic insulation, including vaulted and cathedral ceilings, and allow at least 8 in. of insulation to be installed over top plate.

5. Sill seal is installed on the vertical face of all interior and exterior wall top plates. Exception: builder may use caulking, foam, or mastic to seal top plates to drywall from the attic side after drywall is installed.

6. Windows and doors have backer-rod, caulking, or foam between the frame and rough opening.

7. UL listed bucket mastic has been used to seal all connections (flex, collars, plenums, boots, and boxes) in the duct system (total duct leakage must be less than 3%). Building cavities shall not be used as ducts.

8. Metal seams have been sealed with bucket mastic.

9. Metal seams have been sealed with bucket mastic.

10. Rigid metal splicing collars have been used at all flex duct splices and have been sealed with bucket mastic.

11. Fresh air ventilation is filtered. Thefilter will be easily accessible.

12. Dampers have been installed in all supply ducts and bedroom return ducts.

13. Ventilation ducts do not have turns or bends greater than 90°.

14. Ventilation ducts terminate beyond the exterior skin of the home.

15. All ventilation ducts, excluding kitchen exhaust ducts, are insulated.

16. Transfer grills, jumper ducts, or individual room returns are installed for pressure balancing in all bedrooms.
1. **One house entry door, one bedroom entry and one bathroom entry must be a minimum of 32 inches clear. A visitable route from an exterior entrance through interior hallways must provide access to these interior entries, and this route must be a minimum of 36 inches clear throughout.**

2. **All penetrations in ceiling drywall (for lighting, ceiling fans, bath fans, etc.) are sealed with caulk or foam.**

3. **Attic hatches are weatherstripped and have at least R-30 insulation securely attached. This will require an insulated, air sealed and weatherstripped box to be constructed for attic pull-down stairs.**

4. **Electric water heaters have an uniformed energy factor (UEF) of at least 0.93. Gas water heaters have a UEF of at least 0.60.**

5. **The first three feet of hot and cold pipes from the water heater are insulated to at least R-4.**

6. Plumbing fixtures do not exceed the maximum flow rates listed in the following table:

<table>
<thead>
<tr>
<th>FIXTURE</th>
<th>TOILETS (dual-flush models)</th>
<th>SHOWERHEADS</th>
<th>KITCHEN FAUCETS</th>
<th>BATHROOM FAUCETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Rate</td>
<td>1.3 GPF (1.1 &amp; 1.6 GPF)</td>
<td>2.25 GPM</td>
<td>2.2 GPM</td>
<td>1.5 GPM</td>
</tr>
</tbody>
</table>

7. **Dishwashers and refrigerators, if provided by the builder, are ENERGY STAR® rated.**

8. **No incandescent lights have been installed in the home. All exterior lighting shall use LEDs.**

9. **All kitchens have a fan vented to the outside and exhaust 100 CFM.**

10. **All baths have fans vented to outside and exhaust 50 CFM.**