

Arlington Green Home Choice

A voluntary compliance program (May 5, 2003 draft)

Prerequisite: Must comply with all federal, state, and local government erosion control and tree protection measures.

Erosion control site plan

Builder shall follow guidelines set forth in the NAHB Research Center publication, "Storm Water and Nonpoint Source Pollution Control—Guide for Builders and Developers. Builder shall submit documentation of a site plan for erosion and sedimentation control before site is cleared or graded including contours of slopes to be cleared, location and type of erosion control measures, stormwater and sediment management systems, and a vegetative plan for temporary and permanent stabilization.



*National Association of Home Builders
Research Center — www.nahbrc.org*

Excavated topsoil protected from erosion

Builder shall have a site plan that designates topsoil areas to be protected throughout all construction activities. Protected topsoil areas shall be clearly marked and the builder shall communicate protection measures to all subcontractors. Excavated topsoils shall be protected from erosion by wind or rain with tarps or other suitable material.

Use of redundant mulch, compost, or straw bales for erosion control

In addition to required silt fencing, builder shall install mulch, compost, or straw bale berms or blankets. These additional measures shall be installed on steep slopes, locations where silt fences do not hold up, and around storm drains.

Grind stumps and limbs for mulch

Builder shall grind a minimum of 80% of all tree stumps and limbs for mulch. Mulched material cannot be buried in a landfill.

Mill cleared logs

A minimum of 80% of logs that meet commercial sawmill standards shall be taken to a sawmill for processing into lumber, pulp or other use. Logs cannot be buried in a landfill, burned or chipped.

Building With Trees Program

Arlington Green Home Choice program Builder shall participate in the Building With Trees program developed by the National Arbor Day Foundation in cooperation with NAHB. Builder shall complete the Build With Trees Pledge and comply with Planning and Design, Tree Protection During Construction, and Maintenance/Long-term Care requirements of the program.

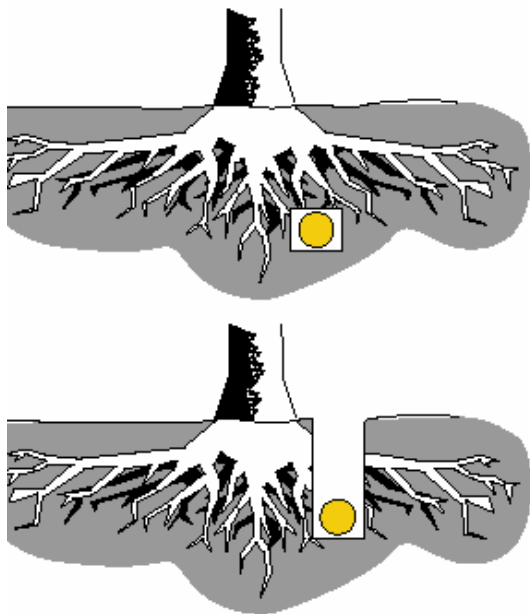


Tree preservation plan

A tree expert (certified arborist, or individual with a professional degree in forestry, landscape architecture or related field) shall develop a site plan prior to clearing, grading, or construction that identifies existing trees with diameter at breast height dimensions exceeding 2 inches and which designates trees to be protected during all construction activities. Tree root zones (area extending in all directions from trunk) must be protected with physical barrier. Tree Preservation Plan shall be reviewed with subcontractors and posted on job site.

Utilities in tree root zones tunneled or hand dug

Trees that are marked to be preserved on a site plan and for which utilities must pass through their root zones shall not have surface-dug trenches. Tunnels shall be dug through the root zone in order to minimize root damage (one point per tree - maximum 5 trees).



Tunnel to minimize root damage (top) as opposed to surface-dug trenches in root zone

Individual trees fenced at drip line

No soil from clearing, grading, or construction activity shall be placed on top of any root zone for trees that are designated on a site plan to be preserved. Trees must be fenced around the drip line throughout the construction process. Fences must be firmly set—if wood fence posts are used, they must be a minimum of 2x2 lumber.

Protected tree save area

A minimum of 25% of the lot must be protected from all grading and tree clearing for lots 1 acre or smaller. These points can also be taken if 25% of the land in the community is protected, even if not every lot has 25% of its area protected. Lots larger than 1 acre must protect 75% of their area in order to take these points.

Tree planting

Site plan shall document that a minimum of 12 trees per acre are planted. For example, if the house is built on a ½ acre lot, 6 trees must be planted.

Wildlife habitat

The site shall have a wildlife habitat area that is approved and certified by the National Wildlife Federation. Wildlife habitats can be established by planting native Virginia plants or by leaving tracts of land undisturbed and protected. Native plant lists can be obtained from the Virginia Cooperative Extension Service.

ENERGY EFFICIENT BUILDING ENVELOPE AND SYSTEMS

The building envelope defines the conditioned and unconditioned spaces in the house. The building envelope consists of two parts: a thermal barrier (insulation) and an air barrier (any number of materials and approaches). For instance, an unfinished basement (without carpet, drywall, etc.) where the exterior walls are insulated and air sealed shall be considered "conditioned space" for the purposes of the Arlington Green Home Choice program. An unfinished basement where the insulation and air barrier are in the ceiling is considered "unconditioned space."

ENERGY STAR



www.energystar.gov

Home must be certified Energy Star in compliance with guidelines set by the U.S. Environmental Protection Agency and U.S. Department of Energy. Builder must provide verification of Energy Star certification upon completion of construction. House must be rated "5 star" by a certified HERS rater; this evaluation requires a blower door and a duct pressurization test plus a certified software rating. Certified HERS raters can be found on the web at www.natresnet.org or www.energystar.gov/homes.

ENERGY MEASURES

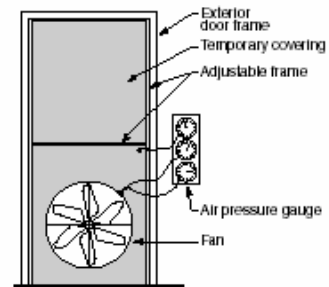
Prerequisite: Houses must meet or exceed all requirements of the International Energy Conservation Code 2000 Edition. These

points are not allowed for Energy Star Homes.

AIR LEAKAGE TEST

Building envelope air leakage test

Certify that house has a maximum of 0.35 air changes per hour natural using standard blower door testing protocol set forth by ASTM for house pressurization testing at 50 Pascals. Builder must submit verification of third party testing upon completion. Certified testers can be found on the web at Residential Energy Services Network, www.natresnet.org or www.energystar.gov/homes.



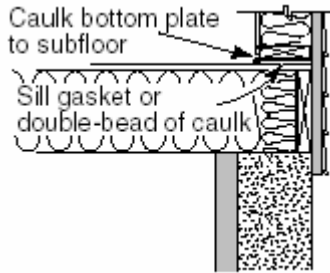
Blower door diagnostics determine building envelope leakage.

AIR SEALING MEASURES

Prerequisite: Houses must meet or exceed the air sealing requirements of the International Energy Conservation Code 2000 Edition.

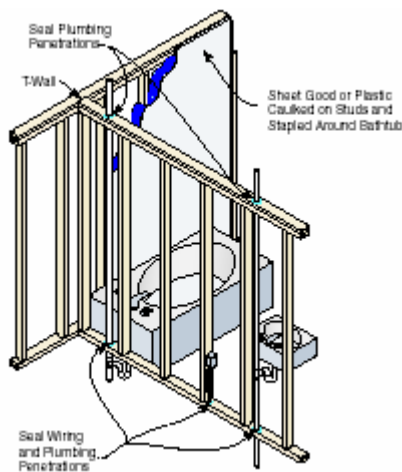
Bottom plate of exterior walls

Bottom plate of entire length of exterior walls plus walls adjacent to unconditioned spaces for all levels shall be sealed to subfloor with caulk, spray foam, gasket or construction adhesive.



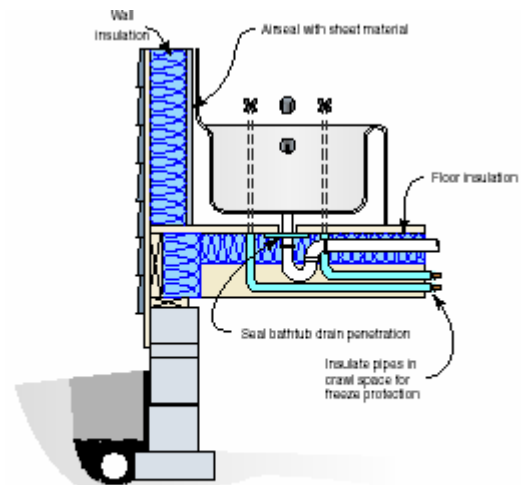
Floor penetrations between unconditioned and conditioned space

All holes in the floor assembly for plumbing, wiring, ductwork, and other purposes connecting conditioned and unconditioned (and exterior) areas shall be sealed. Penetrations for flues and other heat-producing items shall be sealed with noncombustible sheet materials and high temperature sealants.



Bath tub or shower drain

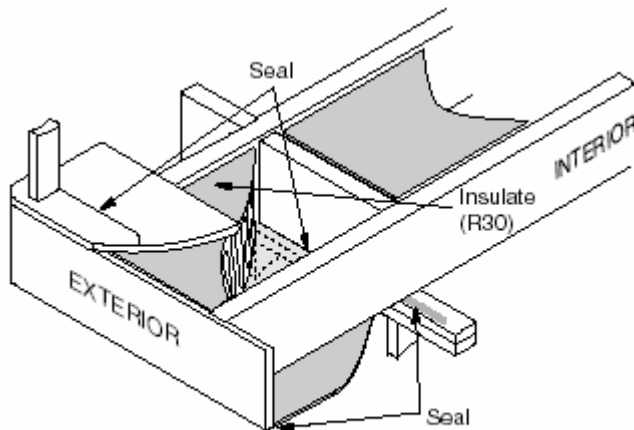
The opening in the subfloor between conditioned and unconditioned areas for tub and shower drain lines shall be sealed with sheet material and sealant. If tub or shower is on the exterior wall, wall shall be insulated and covered with airtight sheet material such as plastic, drywall, or sheathing.



Seal around the tub drain and all plumbing penetrations

Cantilevered floors sealed above supporting wall

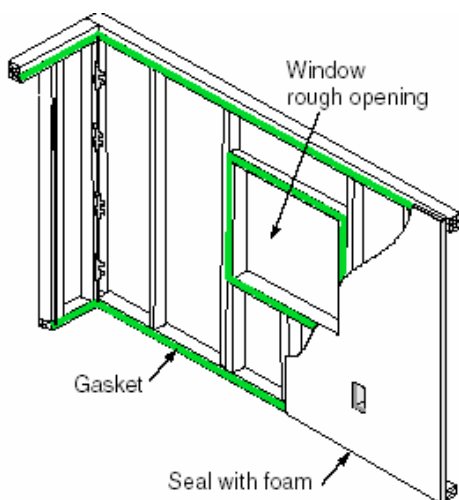
For floors with conditioned area over unconditioned open areas, the floor joist cavity shall be sealed with sheet material or blocking and sealant above the top plate of the supporting wall. These points are available only for homes with cantilevered floors.



Air seal and insulate cantilevered floors.

Drywall sealed to bottom plate of exterior walls

Drywall adhesive, gaskets or other sealant shall be applied to the inner face of bottom plate of exterior walls prior to installation of the drywall. Alternately, spray foam sealant can be installed after drywall installation to seal the bottom edge of the exterior wall drywall to the subfloor.



Gaskets, caulk or foam can be used to air seal drywall at any stage of the installation.

Fireplace air sealing package

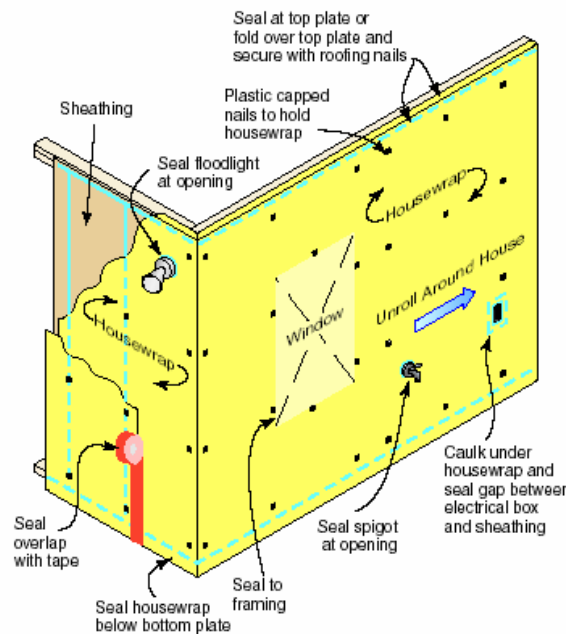
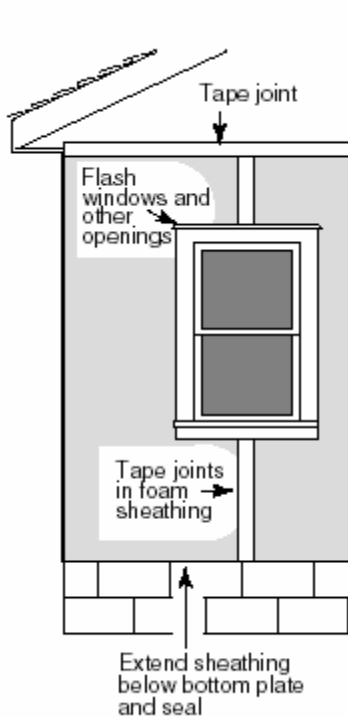
For pre-fab fireplaces on exterior walls, the exterior wall stud cavities shall be covered with OSB, drywall or other acceptable sheet material prior to installation of fireplace unit, or the insert cavity and chase shall be sealed and isolated from the conditioned space. Flue penetrations between conditioned and unconditioned space must be sealed with noncombustible sheet material and high temperature sealant. Fireplace units must have an outside source of combustion air, operable damper and glass doors. Sealed combustion, direct-vent units are eligible for these points in addition to combustion safety points. These points are available for homes which do not have fireplaces.

Drywall penetrations in exterior walls

All holes and penetrations (such as those created by electrical fixture boxes and duct boot penetrations) shall be sealed with caulk, gaskets, or other appropriate sealant to create an airtight connection with the drywall.

Exterior wall sheathing sealed at plates and seams

Caulk, gaskets, tape or other appropriate sealant shall be applied to the exterior wall sheathing to create an airtight connection to the framing. All holes and penetrations (such as those created by subcontractors) shall be sealed.



Housewrap (unsealed at seams and openings)

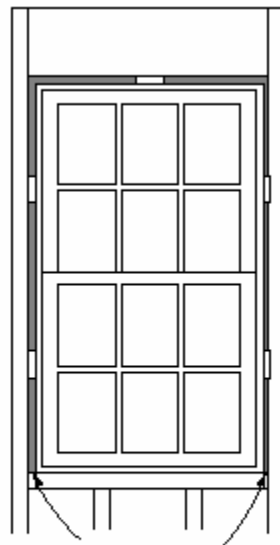
An exterior housewrap shall be applied to the exterior walls according to manufacturer’s specifications. The housewrap must be installed in as continuous a manner as possible and cover the top plate of exterior walls, rough openings for windows and doors, and band joist areas.

Housewrap (sealed at plates, seams, and openings)

An exterior housewrap shall be applied to the exterior walls according to manufacturer’s specifications. The housewrap must be installed in as continuous a manner as possible, and be sealed with housewrap tape, caulk or other sealant to the framing at top plates, all overlapped seams, rough openings for windows and doors, all subcontractor-made penetrations, band joist areas, and at the foundation wall below the bottom plate.

Window and door rough openings

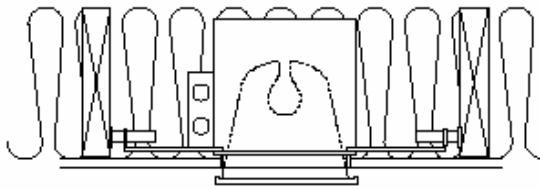
The space between the framing for window or door rough openings and the installed units shall be sealed with nonexpanding spray foam sealant, closed cell foam backer rod, spray applied insulation, or other suitable sealant. Fiberglass or rock wool batt insulation is not acceptable as a sealant but can be used as a backing for a sealant (such as caulk). Thresholds for exterior doors shall be sealed to the subfloor.



Use backer rod to fill gaps between window and rough opening

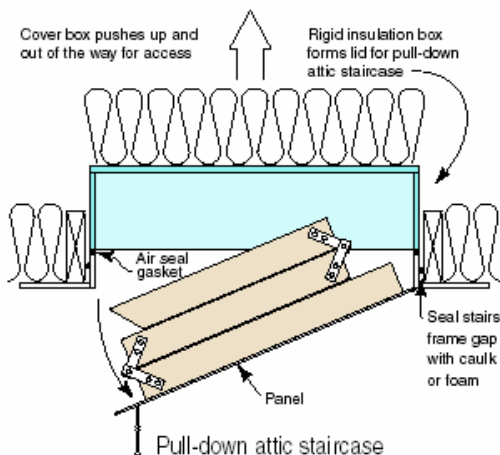
Airtight IC recessed lights or no recessed lights in insulated ceilings

Recessed lights in ceilings with an unconditioned area above must meet the Energy Code specification (2000 International Energy Conservation Code section 502.1.4) for air tightness and must be Insulation Contact (IC) rated. These points are available for homes which do not have recessed light fixtures connecting conditioned to unconditioned areas.



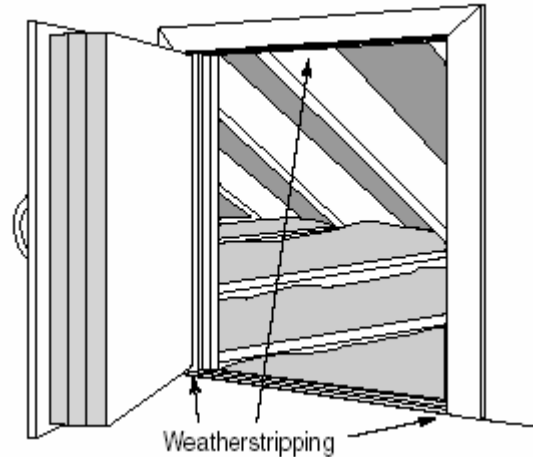
Attic access opening (pulldown stairs/ scuttle hole)

Pull-down attic stairs and scuttle holes that are located in conditioned space shall be weatherstripped to provide an airtight seal against the ceiling trim and drywall. These points are available for homes which do not have access openings connecting conditioned space to unconditioned attic areas.



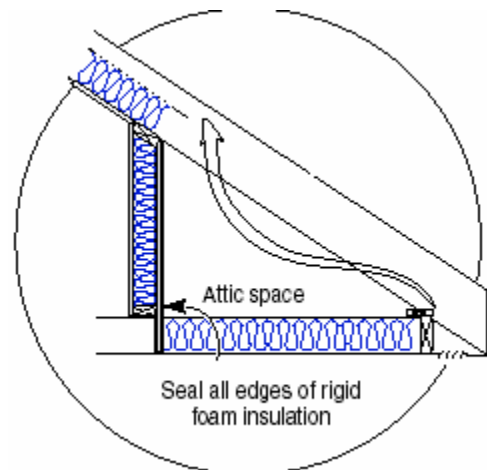
Attic Kneewall doors (weatherstripped with latch)

Doors in kneewalls that connect conditioned space to unconditioned attic areas shall be weatherstripped and latched to provide an airtight seal against the door trim and wall drywall



Attic kneewall has sealed exterior sheathing

Sheet material shall be sealed to the kneewall framing on the attic side of the kneewall to create an airtight seal using caulk or housewrap tape. Sheathing or blocking must extend down between the flat ceiling joists to seal the floor joist cavities.

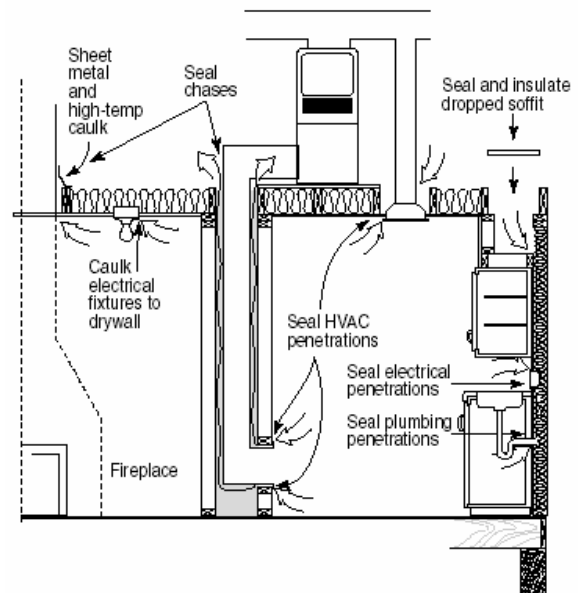


Chases sealed and insulated

Framed spaces that connect conditioned areas to unconditioned attics, basements or crawl spaces shall be sealed with sheet material and sealant. These areas include chases for plumbing, duct work, chimneys and flues. For chases with high temperature heat sources, noncombustible sheet materials, such as sheet metal and high temperature caulk, shall be used. Where the code prohibits sealing this gap (such as with fireplace flues) manufacturer-supplied sheet metal shall be used that fits the flue pipe as closely as allowed. Breaks in framing and interior finish materials, such as for dropped soffits and changing ceiling heights, that connect unconditioned and conditioned areas shall be sealed with blocking or sheet material and sealant.

Ceiling penetrations sealed between unconditioned and conditioned space

All holes in the ceiling assembly for plumbing, wiring, ductwork, and other purposes connecting conditioned and unconditioned areas shall be sealed. This includes holes made through the ceiling (such as caulking light fixture boxes to the drywall) as well as holes made through all wall top plates. Penetrations for flues and other heat producing items shall be sealed with noncombustible materials and high temperature sealant.



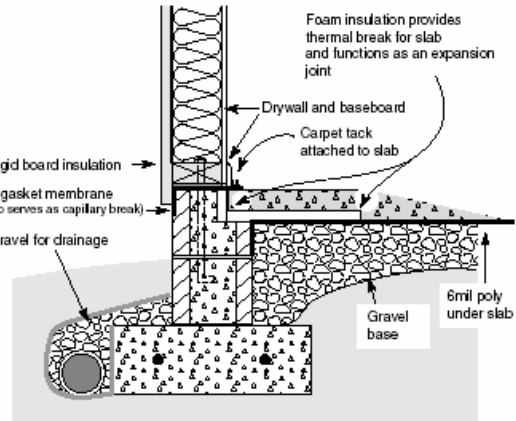
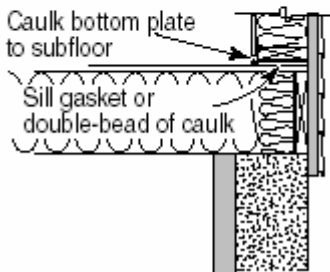
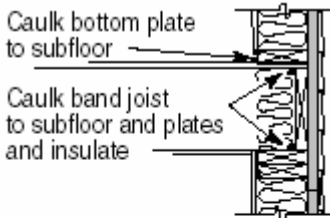
Seal every penetration between the conditioned and unconditioned space. For larger holes use sheet materials such as scrap sheathing, drywall or plywood. For smaller holes and gaps use spray foam, caulk or other sealant.

Ceiling drywall sealed to top plate

For all exterior and interior walls, edges of the ceiling drywall between conditioned and unconditioned areas shall be sealed to top plate with gaskets, caulk, spray foam, or other sealant.

Band joist between conditioned floors sealed

All band joist areas between conditioned floors shall be sealed with gaskets, caulk or spray foam. Band joists shall also be insulated.



***Basement walls (R13)**

Both masonry and framed basement walls shall have complete insulation coverage from floor to ceiling equal to or greater than R13.

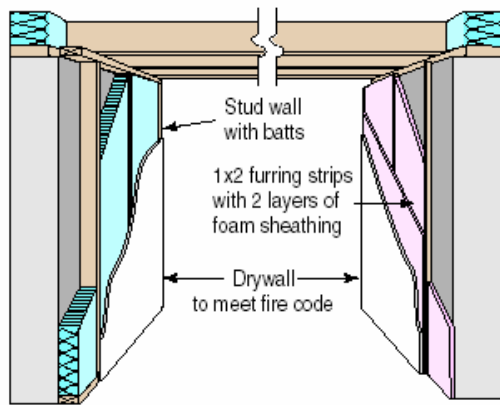
INSULATION

**Homes with multiple foundation types must use foundation type of greatest area for points*

Prerequisite: Houses must meet or exceed the insulation requirements of the 2000 International Energy Conservation Code.

***Slab insulation**

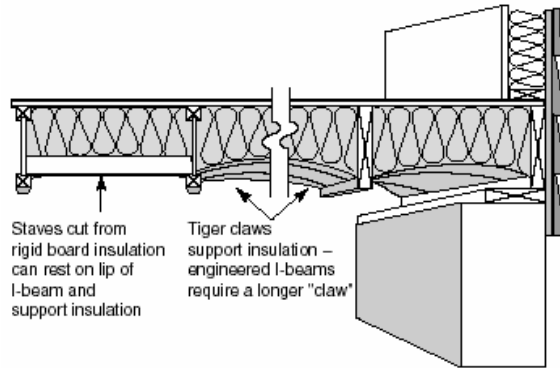
R6 or greater exterior slab insulation, such as for monolithic slabs, may be installed with approved membranes (such as EPDM-type membranes) to protect against termites. Alternatively, nonmonolithic slabs may use rigid insulation between the stem wall and the poured (floating) slab, using the protective membrane as a termite flashing and as a capillary break.



Insulate basement walls

***Framed floor over unconditioned space (R22)**

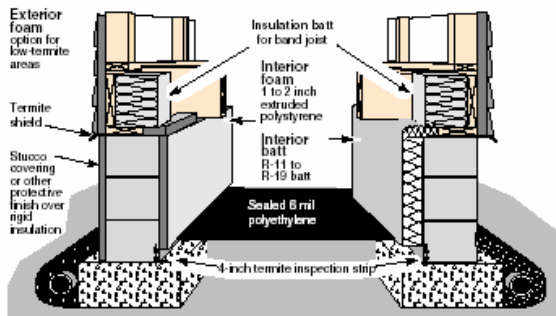
Framed floors over unconditioned areas shall have continuous R22, or greater, insulation. Batt insulation shall be in direct contact with subfloor and supported at least every 18 inches. Band joist R-value shall be equal to or greater than R22.



Insulate framed floor

***Sealed, insulated crawl space walls (R22)**

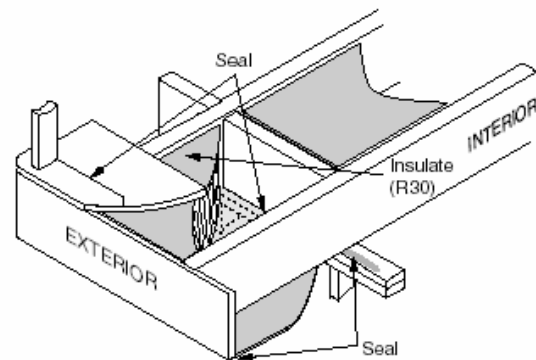
Crawl space walls shall be airtight and sealed with caulk, foam sealant, or gasket between the foundation stem wall and the sill plate, between the sill plate and the band joist, and between the band joist and subfloor. All penetrations in the crawl space wall shall be sealed and access doors weatherstripped. Walls shall be insulated to R22 or greater. Space must be mechanically conditioned.



Insulate crawl space walls

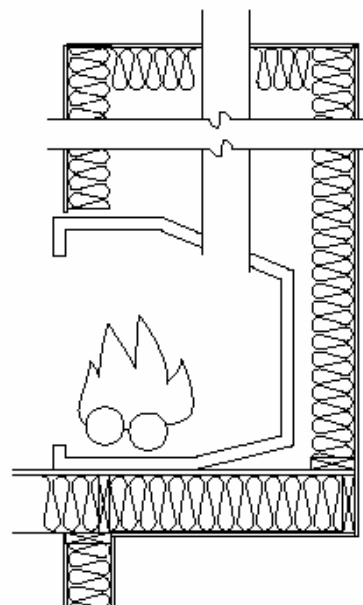
Cantilevered floor (R38)

For floors with conditioned area over unconditioned open areas, the floor joist cavity shall be sealed with sheet material or blocking and sealant above the top plate of the supporting wall and insulated to R30, either with batt insulation between floor joists or with a combination of joist insulation and insulated sheathing on underside of floor joist.



Insulate fireplace chase

Exterior fireplace chase which connects to conditioned space shall be insulated to a minimum of R15. Insulation must be continuous in exterior walls and ceiling above. Insulation shall be located no closer than 1-inch to the flue pipe, or according to local code. *These points are available for homes without fireplaces.*

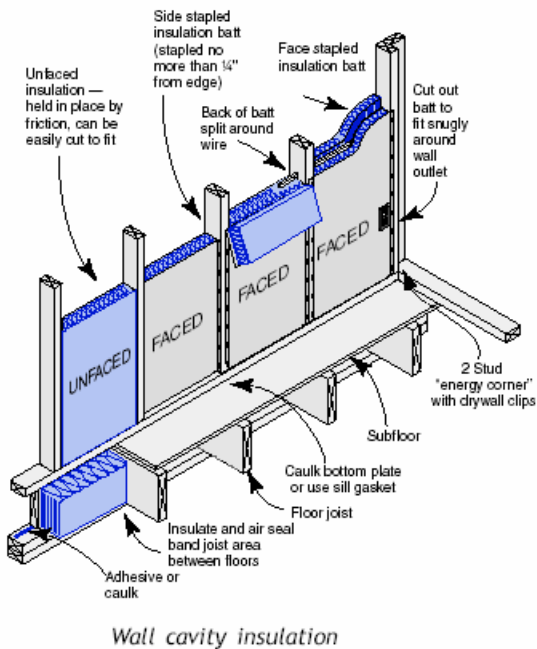


Spray applied wall insulation

Spray applied insulation shall be applied to a minimum of 80% of exterior wall stud cavities (plus walls adjacent to unconditioned spaces), including band joist areas between floors.

Exterior wall stud cavity (R22)

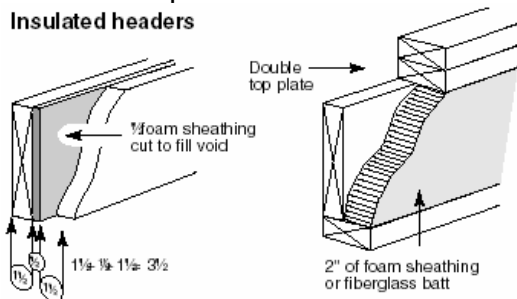
Insulation between stud cavities in exterior walls shall be equal to or greater than R22. Insulation shall be installed according to manufacturer's specifications and provide complete coverage.



Insulated headers

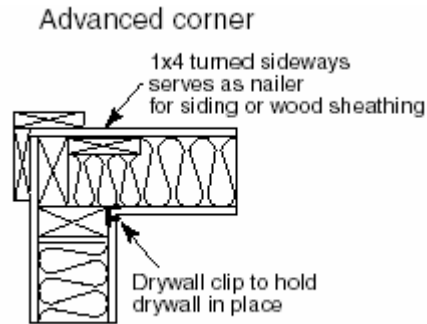
Exterior walls featuring headers (over windows and door openings) shall be framed with at least 1/2 inch of rigid foam insulation between the 2x members. Other methods of achieving insulated headers, such as boxed headers with insulation batts, are also acceptable.

Insulated headers



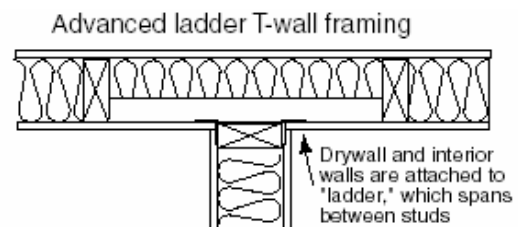
Insulated corners

The intersecting corner of two outside walls shall be framed such that insulation is continuous in the external wall (corners with unnecessary 2x4's are not permitted). A "California corner" or two stud corner with drywall clips are methods of achieving this.



Insulated T-walls

The intersection of an interior wall and an outside wall shall be framed such that insulation is continuous in the external wall. A "ladder" type intersection is one method of achieving this.



Advanced framing techniques add insulation.

Insulated wall sheathing (R3.0 or greater)

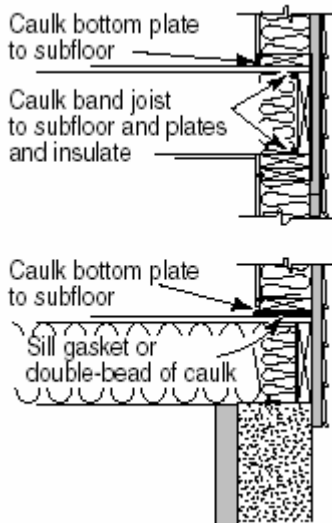
The sheathing for exterior walls shall be equal to or greater than R3.0. Sheathing shall be installed with no gaps larger than 0.25 inch and provide complete coverage except for where structural sheathing is required by code (maximum of 25%).

Insulated wall sheathing (R5 or greater)

Insulated wall sheathing (R5 or greater). If the exterior wall sheathing is equal to or greater than R5, one additional point is available.

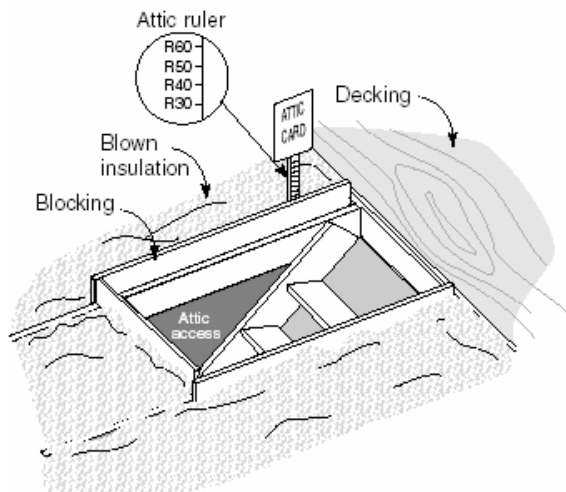
Band joist insulated (R22)

The band joist connecting two conditioned floors shall be insulated to R19 or greater.



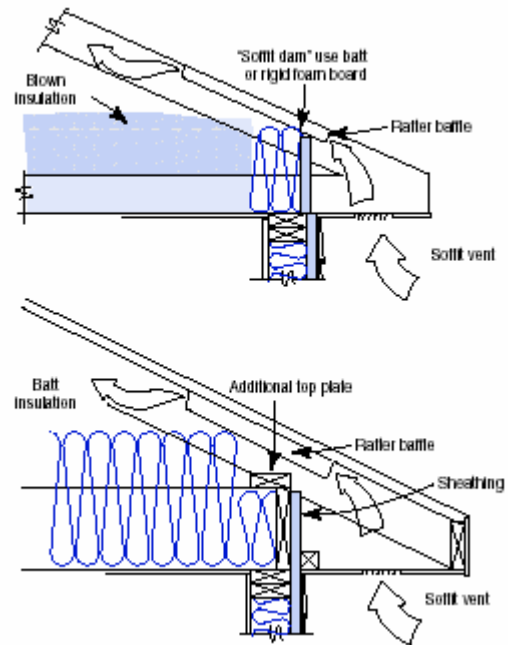
Loose-fill attic insulation card and rulers

Written documentation (an "attic card") specifying the insulation type, coverage area, and R-value shall be provided if loose-fill insulation is installed in the attic. Attic rulers to verify insulation depth must be provided every 300 ft² and facing the attic entrance. Insulation must be installed according to manufacturer's specifications and provide for complete coverage and full R-value including areas under flooring for attic storage and mechanical equipment.



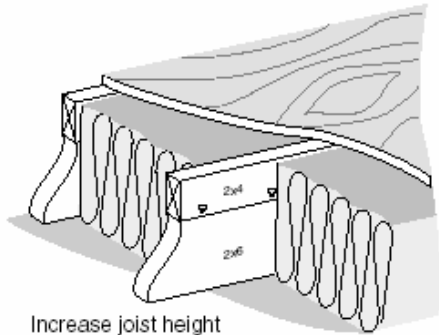
Energy heel trusses or raised top plates

To ensure full depth of attic insulation above exterior wall top plates, energy trusses with raised top chord or raised top plate for joist/ rafter assemblies shall be used.



Flat ceilings (R38)

Ceilings with unconditioned attic space above shall have complete coverage of attic insulation equal to or greater than R38. A maximum of 5% of ceiling area shall be R25 or greater to accommodate elevated attic flooring for storage and mechanical equipment.



Increase joist height under decking to raise R-value for ceiling

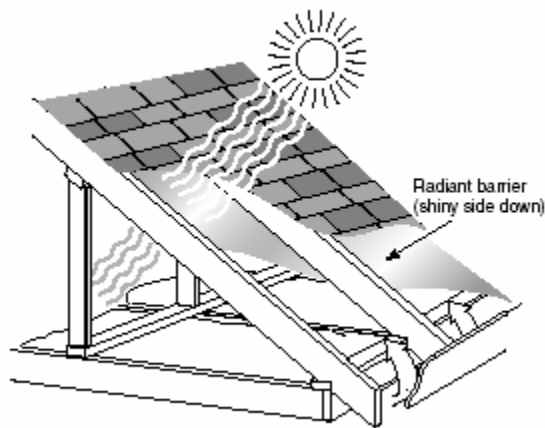
Increase height of joists for utility flooring in attic to add more insulation.

Vaulted and tray ceilings (R38)

Vaulted, tray, or cathedral ceilings shall be insulated to R38 or greater.

Ceiling radiant heat barrier

A radiant heat barrier must be installed over at least 80% of the vented attic space. The radiant barrier must have a reflective surface facing down towards a minimum 1 inch vented air space and have an emissivity rating of 0.05 or less.

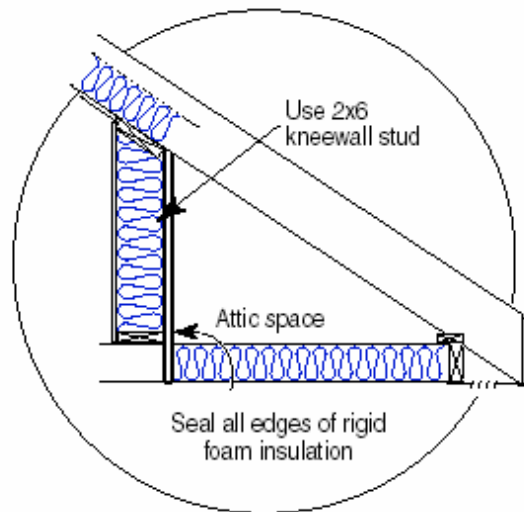


Attic kneewall stud cavities (R22)

Install R19 or greater insulation inside stud cavities. One additional point is available if kneewall is insulated to R30.

Attic kneewall with non-insulated sheathing

Rigid sheathing shall be installed to the kneewall framing on the attic side of the kneewall.



Attic kneewall doors (R22)

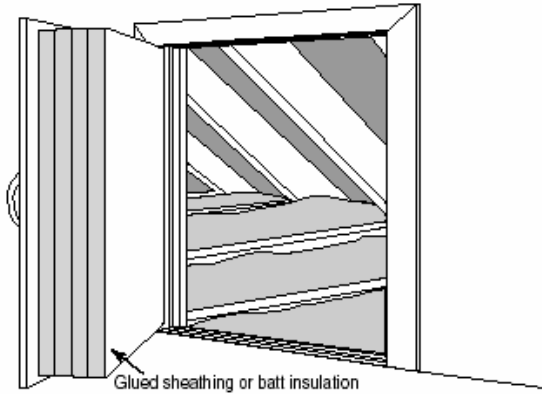
Doors in kneewalls that connect conditioned space to unconditioned attic areas shall be insulated to R10 or greater.

WINDOWS

Prerequisite: Window areas and U-factors or R-values must comply with International Energy Conservation Code.

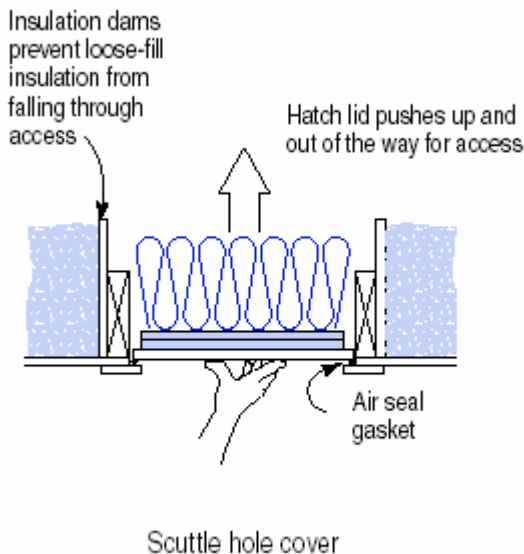
NFRC rated windows


Windows shall be rated by the National Fenestration Ratings Council and have a U-factor of 0.40 or less.



Attic access doors (R38)

Pull-down attic stairs located in conditioned space shall have an insulated box equal to or greater than R22. Scuttle holes that are located in conditioned space shall be insulated with batt insulation or rigid foam insulation to R22 or greater.





NFRC
National Fenestration
Rating Council

**World's Best
Window Co.**

Millennium 2000+ Casement
Virt-Cad Wood Frame
Double Glaze • Argon Fill • Low E

CERTIFIED

ENERGY Performance

- Energy savings will depend on your specific climate, house and lifestyle
- For more information, call (manufacturer's phone number) or visit NFRC's website at www.nfrc.org

Technical Information				
Res	U-Factor	Solar Heat Gain Coefficient	Visible Transmittance	Air Leakage
	.32	.45	.58	.3
Non-Res	.31	.45	.60	.3

Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product energy performance. NFRC ratings are determined for a fixed set of environmental conditions and specific product sizes.

Low emissivity glazing

Windows shall have a minimum of two glazing layers and the inner surface of one layer contain a low emissivity coating.

Inert gas filled double glazed units

Double paned windows must have an insulating gas, such as argon or krypton, between the two panes.

Solar Heat Gain Coefficient

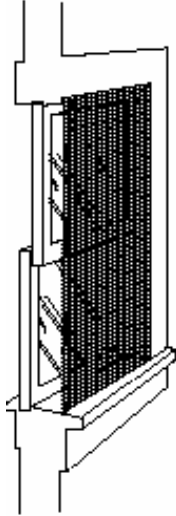
Windows facing east, west, and south shall have a Solar Heat Gain Coefficient of 0.4 or less.

1.5-foot overhangs on all south-facing sides

All south-facing windows shall have a minimum 1.5-foot overhang to protect against solar gain.

Solar shade screens

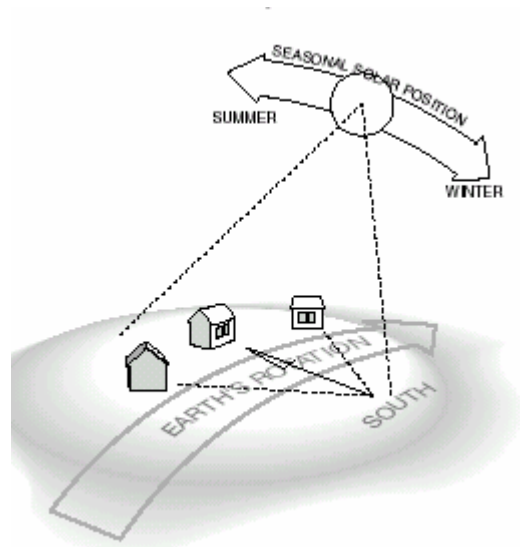
At a minimum, windows facing east and west shall have solar shade screening with a shading coefficient of 0.7 or greater. Shade screening shall be installed on exterior of window glazing.



Exterior shade screens reduce heat gain through windows by up to 70%

Certified passive solar design

Builder certifies that passive solar heating contribution shall reduce heating loads by 25% or greater and not increase cooling loads by more than 10%. Certification shall be based on Energy 10 or similar modeling program and included with Arlington Green Home Choice scoring worksheet.



Seasonal location of the sun in the sky can determine window location, overhangs and landscaping considerations in passive solar homes.

*SBIC - Energy 10
www.sbicouncil.org*

HEATING AND COOLING EQUIPMENT

Prerequisite: Heating and cooling equipment must meet or exceed the International Energy Conservation Code requirements.

Cooling equipment sized within 6,000 btu/h of Manual J

The size of all heat pump equipment shall be within 6,000 btu/h of the cooling load as determined by the Air Conditioning Contractors Association (ACCA) and American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Manual J guidelines. Builder must submit documentation of Manual J sizing with Arlington Green Home Choice scoring worksheet.

Heating equipment sized within 25,000 btu/h of Manual J

All furnaces and heat pump equipment shall be within 25,000 btu/h of the heating load as determined by the Air Conditioning Contractors Association (ACCA) and American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Manual J guidelines. Builder must submit documentation of Manual J sizing with Arlington Green Home Choice scoring worksheet.



ASHRAE Manual J
www.ashrae.org

Measured airflow to within 15% of manufacturer's specifications

Forced-air cooling systems shall have total airflow certified by independent third party inspection to be within 15% of manufacturer's specifications. Builder must

submit documentation with Arlington Green Home Choice scoring worksheet.

90% AFUE furnaces

A minimum of 75% of all furnace heating system output shall have an Annual Fuel Utilization Efficiency (AFUE) greater than or equal to 90%.

SEER 12 cooling equipment

A minimum of 75% of all cooling system output shall have a Seasonal Energy Efficiency Ratio (SEER) of 12 or greater.

SEER 14 cooling equipment

A minimum of 75% of all cooling system output shall have a Seasonal Energy Efficiency Ratio (SEER) of 14 or greater.

HSPF 7.8 heat pump

A minimum of 75% of all air source heat pump output shall have a Heating Seasonal Performance Factor of 7.8 or greater.

HSPF 8.0 heat pump

A minimum of 75% of all air source heat pump output shall have a Heating Seasonal Performance Factor of 8.0 or greater.

Geothermal heat pump

All geothermal heat pumps shall have a cooling Energy Efficiency Ratio (EER) of 11.0 or greater and a heating Coefficient of Performance (COP) of 2.5 or greater as determined by the Air Conditioning and Refrigeration Institute (ARI). ARI on the web at www.ari.org.

Sensible Heat Fraction

All air conditioners and heat pumps shall have a cooling Sensible Heat Fraction of 0.7 or less. Builder must submit documentation of Sensible Heat Fraction with Arlington Green Home Choice scoring worksheet. A specification sheet on the installed equipment can be used for documentation.

Programmable thermostat

All heating and cooling equipment shall have an automatic, programmable indoor thermostat installed according to manufacturer's specifications

Outdoor thermostat for heat pump

All air source heat pumps shall have an outdoor thermostat installed according to manufacturer's specifications that restricts electric resistance heating when outdoor air temperatures are above 40 degrees Fahrenheit.

Cooling equipment has non-CFC and non- HCFC refrigerant

All cooling equipment shall be charged with refrigerants not containing CFC's or HCFC's.

Zone control

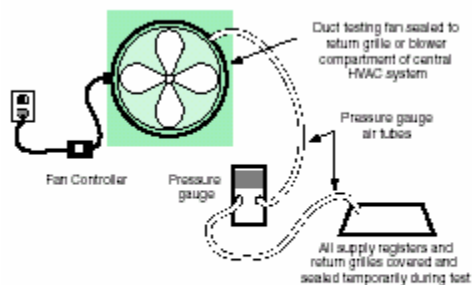
For multi-zoned HVAC systems, each zone must have a separate temperature control.

DUCTWORK / AIR HANDLER

Prerequisite: All ductwork must be installed according to the International Energy Conservation Code (typically R6 or greater)

Certify duct leakage less than 5%

Certify that ducts have a maximum leakage cubic feet per minute (cfm) value of no more than 5% of the total floor area using standard duct testing protocol set forth by ASTM for duct pressurization testing at 25 Pascals. As an example, a 1000 ft² house may have up to 5% or 50 cfm of duct leakage at 25 Pascals. This test measures duct leakage lost to unconditioned spaces



Duct blaster diagnostics can determine duct leakage in a HVAC system.

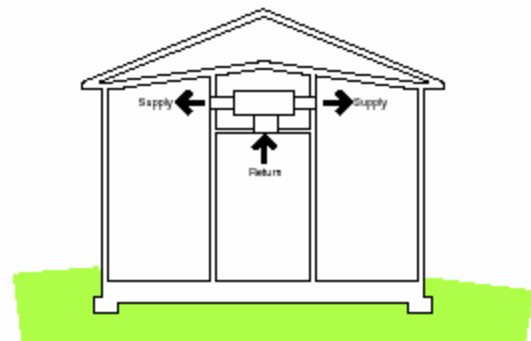
and so may be run in conjunction with a blower door fan. Builder must submit verification of third party testing.

Air handler located within conditioned space

All air handlers are located within conditioned space. Vented combustion closets are not considered conditioned space. Furnaces using room air for combustion (including unfinished basements) are not eligible.

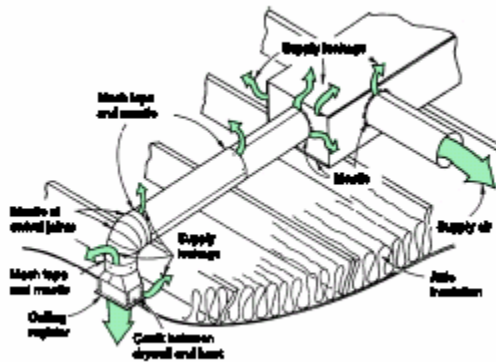
Ducts located within conditioned space

At least 90% of all supply and return ducts are located within conditioned space.



Duct seams and air handler sealed with mastic

All transverse seams in supply and return ducts, including supply and return plenums and leakage sites in the air handler, shall be sealed with duct mastic and fibrous reinforcing mesh according to SMACNA specifications. Duct tape is not a suitable sealant for ducts but may be used for sealing leakage sites at the air handler's removable access panels and at filter access panels.



Duct design complies with Manual D

Ductwork design shall comply with the ACCA Manual D guidelines. Builder must submit documentation of Manual D design with Arlington Green Home Choice final worksheet.

Airflow for each duct run measured and balanced

Airflow for each duct run shall be measured and balanced to comply with Manual D specifications. Builder must submit documentation of airflow measurement by independent third party testing agent.

No ducts in exterior walls or vaulted ceilings

No supply or return ducts, boots or registers shall be located in exterior walls. This includes vaulted ceilings and insulated walls between conditioned and unconditioned space such as the common wall between the garage and the rest of the house.

Rigid supply trunk

All duct systems shall feature at least one long supply trunk with multiple take-offs. An "octopus" system with all duct runs originating at the supply plenum is not acceptable.

Multiple return ducts

Each bedroom shall have a dedicated return duct.

Transfer grilles

For homes with no return ducts located in bedrooms, all supply air shall have a direct path back to a return grille even when doors are closed. This path shall be through transfer grilles. Houses with undercut doors do not qualify for these points.

Interior doors with 1-inch clearance to finish floor

For homes with no return ducts located in bedrooms, all interior bedroom doors shall have a minimum clearance of 1 inch between the bottom of door when closed and the finished floor surface. This clearance is to allow for air to be drawn to the main return grille when the door is closed.

Duct trunk lines that are outside conditioned space insulated to R8

All duct trunk lines located outside conditioned space shall be insulated to a minimum of R8.

Note: Mechanical Waiver not permitted. Mechanical inspection must be a walk-through inspection.

ENERGY EFFICIENT APPLIANCES AND LIGHTING

Lighting installed in an enclosed garage shall be considered interior lighting for purposes of the Arlington Green Home Choice™ program. Lighting installed in an open-air garage (e.g. carport) shall be considered exterior lighting.

Indoor fluorescent fixtures

Interior lighting shall include a minimum of 200 watts of fluorescent lighting fixtures. These may include the kitchen overhead fixtures; undercounter fixtures do not qualify. The lighting fixtures must be hard-wired and have the ballast integrated into the fixture to ensure that the fluorescent lighting will remain permanent.

Recessed light fixtures are compact fluorescents

At least 80% of all recessed light fixtures shall be compact fluorescent.

Outdoor lighting controls

All exterior lighting shall have automatic photocell, motion or timer controls.

High efficiency exterior lighting

All exterior lighting shall be high pressure sodium, fluorescent, or equivalent high efficiency. A maximum of 100 watts of outdoor incandescent or halogen lighting shall be permitted.

Horizontal Cutoff on exterior lighting

All exterior lighting shall have horizontal cutoff to eliminate trespass of light off the site and to direct light downward.

Energy efficient dishwasher

Builder installed dishwasher shall be Energy Star rated or listed on "The Most Energy Efficient Appliances" published by the American Council for an Energy Efficient Economy (www.aceee.org).

Energy efficient refrigerator

Builder installed refrigerator shall be Energy Star rated or listed on "The Most Energy Efficient Appliances" published by the American Council for an Energy Efficient Economy (www.aceee.org).

No garbage disposal

Plumbing system shall not include a garbage disposal. Composting of food wastes is recommended in place of a garbage disposal.

RESOURCE EFFICIENT DESIGN

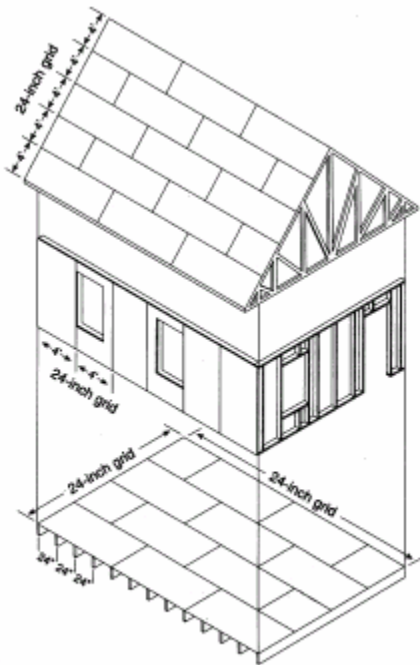
Prerequisite: Framing design must comply with local building codes.

House smaller than 2100 square feet

Houses with less than 2100 square feet of finished space shall be eligible for these points.

Floor plan adheres to 2-ft dimensions

The perimeter of the house shall comply with 2-ft dimensions to minimize material waste.



Interior living spaces adhere to 2-ft dimensions

At least 50% of interior rooms and living spaces shall comply with 2-ft dimensions to minimize material waste.

Floor joists at 24-inch centers

A minimum of 80% of all floor joists shall be spaced at 24 inches on center.

Floor joists at 19.2-inch centers

A minimum of 80% of all floor joists shall be spaced at 19.2 inches on center.

Non-load bearing wall studs at 24-inch centers

Non-load bearing wall studs shall be spaced at 24 inches on center.

All wall studs at 24-inch centers

All non-load and load bearing wall studs shall be spaced at 24 inches on center.

Window rough openings eliminate jack stud

Framing shall not include jack studs to support header. Header hangers or other support as required by code shall be used.

Non-structural headers in non-load bearing walls

Non-load bearing walls shall not have structural window and door headers.

Single top plate with stacked framing

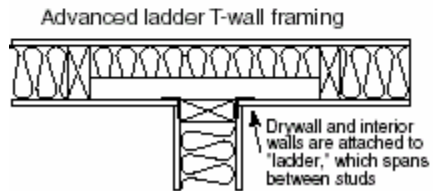
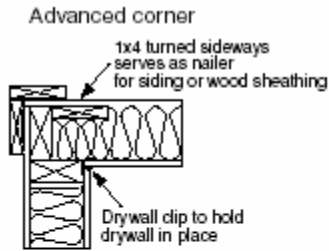
Roof rafters and ceiling joists shall align within 2 inches of exterior wall studs such that a single top plate can transfer loads to the wall framing.

2-stud corners with drywall clips or alternative framing

Corner framing shall eliminate non-structural studs and allow for full corner insulation through the use of drywall clips, horizontal nailers or other means to support drywall.

T-walls with drywall clips or alternative framing

The intersection of exterior and interior walls shall eliminate non-structural studs and allow for full exterior wall insulation through the use of advanced ladder T-wall framing or other technique.



Advanced framing techniques add insulation.

RESOURCE EFFICIENT BUILDING MATERIALS

RECYCLED AND NATURAL CONTENT MATERIALS

Prerequisite: All materials must be approved by local building code for use in residential construction.

Recycled concrete used as aggregate

Demolished concrete shall be used as an aggregate in poured concrete structures.

Reclaimed wood flooring.

A minimum of 50% of wood flooring shall be reused wood.

Recycled content tiles

A minimum of 50% of tile floors shall contain a minimum of 30% recycled material content.

Concrete with fly ash

A minimum of 25% of the cement in all concrete used for footings, foundation and basement walls, and slabs shall be replaced with fly ash.

Insulation

All insulation materials shall have a minimum of 25% recycled material content. Recycled content must be certified by Scientific Certification Systems (SCS) or the manufacturer. SCS is on the web at www.scs1.com.

Cork or bamboo flooring

Home shall contain at least 500 square feet of cork or bamboo flooring, rapidly renewable and durable materials.

Carpet

All floor carpeting shall have a minimum of 50% recycled material content for face fibers and backing.

Carpet pad

All floor carpet padding shall have a minimum of 50% recycled material content.

Outdoor decking and porches

A minimum of 80% of outdoor floor decking shall have a minimum of 40% recycled material content. Recycled content must be certified by Scientific Certification Systems.

Air conditioner condensing unit pad

The outdoor pad for an air conditioner or heatpump condensing unit shall have a minimum of 50% recycled material content (such as plastic or rubber tires). Recycled content must be verified by third party.

ADVANCED PRODUCTS

Engineered floor framing

A minimum of 80% of floor joist framing shall be non-dimensional (engineered) structural wood, such as trusses or I-beams, or non wood material.

Engineered roof framing

A minimum of 80% of roof framing shall be nondimensional (engineered) structural wood, such as trusses or I-beams, or non wood material, such as steel.

Panelized construction

A minimum of 80% of walls will be constructed of factory fabricated wall sections.

Oriented Strand Board (OSB) roof decking

A minimum of 80% of roof decking shall be OSB.

OSB Wall Sheathing

A minimum of 80% of wall sheathing shall be OSB.

All beams are steel, engineered wood, or Trusses

A minimum of 80% of the total beams shall be manufactured from non-solid sawn wood, such as laminated wood, or steel beams.

All headers are steel or engineered wood

A minimum of 80% of the total headers shall be manufactured from non-solid sawn wood, such as laminated wood, or steel beams.

Engineered wall framing (25% of studs)

A minimum of 25% of the total wall framing shall be manufactured from non-solid sawn wood, such as laminated or finger-jointed studs. Exterior steel studs are not eligible for this credit unless the entire exterior surface of the studs is covered with a minimum R10 insulated sheathing.

Engineered wall framing (80% of studs)

A minimum of 80% of the total wall framing shall be manufactured from non-solid sawn wood, such as laminated or finger jointed studs. Exterior steel studs are not eligible for this credit unless the entire exterior surface of the studs is covered with a minimum R10 insulated sheathing.

Engineered interior trim

A minimum of 80% of interior wood trim shall be non-solid sawn wood (such as finger-jointed) or non wood material.

Engineered exterior trim

A minimum of 80% of exterior trim, including soffit, fascia, and trim, shall be non-solid sawn wood or non-wood material.

Steel interior walls

While exterior steel walls suffer potential thermal bridging, interior walls can be framed using steel studs. Steel studs shall have a 30% recycled content. A minimum of 80% of interior walls is required.

Structural Insulated Panels (exterior walls)

A minimum of 80% of all exterior walls shall be structural insulated panels with a minimum of R15. Structural insulated panels must be installed according to manufacturer's specifications.

Structural Insulated Panels (roof)

A minimum of 80% of all roof area shall be structural insulated panels with a minimum of R30. Structural insulated panels must be installed according to manufacturer's specifications.

Precast Autoclaved Aerated Concrete

A minimum of 80% of above grade exterior area shall be precast autoclaved aerated concrete. Walls must be installed according to manufacturer's specifications.

Insulated Concrete Forms

A minimum of 80% of exterior walls shall be insulated concrete forms with a minimum of R14. Walls shall be installed according to manufacturer's specifications and meet termite protection guidelines of State of Virginia for ground contact insulation.

DURABILITY

Roofing (25-year warranty)

Shingle or other exterior roofing material shall have a minimum 25-year manufacturer's warranty. Warranty documentation must be provided to the home buyer.

Roofing (30-year warranty)

Shingle or other exterior roofing material shall have a minimum 30-year manufacturer's warranty. Warranty documentation must be provided to the home buyer.

Roofing (40-year warranty)

Shingle or other exterior roofing material shall have a minimum 40-year manufacturer's warranty. Warranty documentation must be provided to the home buyer.

Light roof color

Roofing shall have a solar reflectance of 60% or more.

Roof drip edge

The outer edge of all roof decking shall be protected with a metal or plastic drip edge.

Roof edge ice dam protection

The outer edges of all roof decking shall be protected with an approved ice protection material.

Exterior cladding

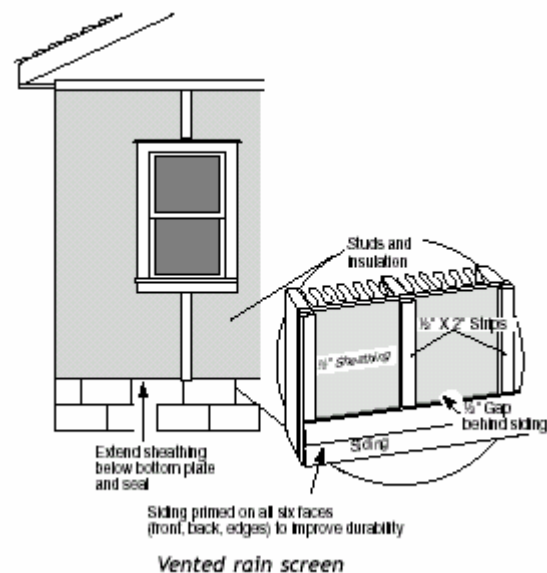
A minimum of three sides of exterior wall cladding shall have a 40-year manufacturer's warranty or be a durable natural material such as masonry stucco, stone or brick. Warranty documentation must be provided to the home buyer.

Walls covered with builder paper or Housewrap

A minimum of 80% of exterior wall area shall have a building paper, housewrap or similar material designed to protect the wall from water moving past the exterior cladding.

Siding with vented rain screen

A minimum of 80% of exterior wall area shall have building paper, housewrap or similar material designed to protect the wall from water moving past the exterior cladding, and have a minimum of a 1/2 inch air space between the exterior cladding and wall sheathing. The airspace shall be designed to minimize moisture migration between the exterior cladding and the wall sheathing.



Back-primed wood-based siding and trim

All six sides of painted or stained exterior wood-based siding and trim shall be primed prior to installation.

10-year warranty on insulated glazing

Insulated glazing units for exterior windows and doors shall have a minimum 10-year manufacturer's warranty against sealed glass failure. Warranty documentation must be provided to the home buyer.

Window and door pan and sill flashing

All windows and exterior doors shall have a water-resistant flashing installed on the side and base of window and door rough openings to direct water leaks out of the wall.

Window and door head flashing

All windows and exterior doors shall have a metal or plastic flashing installed a maximum of six inches above the top of the window or door.

Continuous foundation termite shield

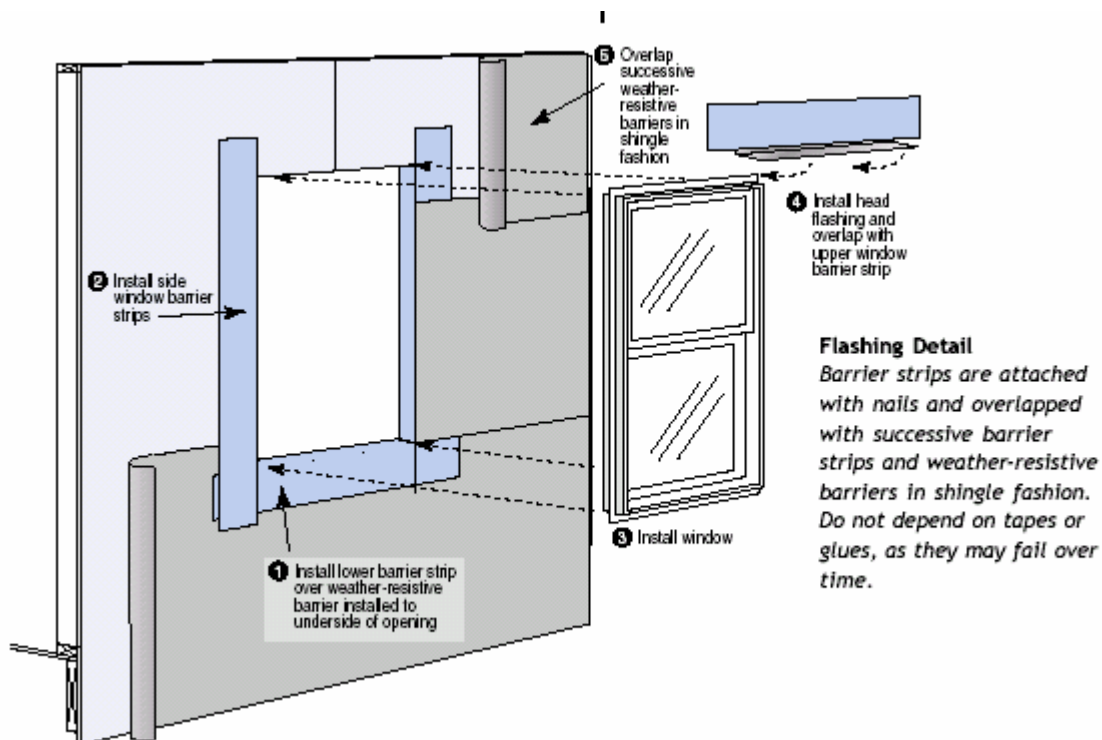
A continuous termite shield shall cover 100% of the foundation stem wall, piers, and other potential entry points. The termite shield can be fabricated from metal, rubberized membrane or similar material that forms a physical barrier to termites. All seams and penetrations in the termite shield shall be sealed to prevent termite entry.

Roof gutters that discharge water 5 feet away from foundation

All rain from the roof shall be collected in a roof gutter system and directed via downspouts such that water is discharged at least 5 feet away from the foundation. Gutters and downspouts that drain water to the base of the foundation are not eligible for these credits.

Covered entry-ways (all doors)

Home shall be equipped with covered entry ways no less than three feet above every exterior door.



WASTE MANAGEMENT

Prerequisite: No construction materials shall be burned or buried on a job site or other area other than a state approved construction and demolition landfill.

WASTE MANAGEMENT PRACTICES

Job site framing plan and cut list

A plan shall be submitted that designates all structural framing for two of the following: floors, roof, and walls. The plan shall be reviewed with framing crew to ensure minimization of unnecessary framing.

Job site framing plan with stud locations, joist locations, and roof structure and cut list

A plan that designates all structural framing for the roof, walls, and floors shall be prepared and reviewed with framing crew to ensure minimization of unnecessary framing. Builder must submit documentation of framing plan with Arlington Green Home Choice House scoring worksheet.

Central cut area

Framing contractor shall use a central cutting area and store wood end cuts for re-use.

***Donation of excess materials or re-use**

Builder shall avoid disposal of excess construction materials by donating excess to a nonprofit 501c(3) organization or by re-using the construction materials for another job. The value of donated or re-used materials must be \$500 or greater.

**Builder must provide receipt of donation with Arlington Green Home Choice final worksheet*

RECYCLE CONSTRUCTION WASTE

Posted job site waste management plan

Prerequisite: A minimum of 75% of 3 of the following materials must be recycled. See NAHB Research Center's "Builder's Field Guide to Residential Construction Waste Management" publication for more information. Points for a "waste management plan" are in addition to points for each recycled material if 3 are recycled.

Job site shall have a construction waste management plan posted and each subcontractor shall be educated on the aspects of the plan that pertains to their work. Waste management plan must either provide for on-site separation of materials to be recycled or provide for separation of recyclable materials by clean-up or waste hauling firms. See NAHB Research Center's "Builder's Field Guide to Residential Construction Waste Management" publication for more information. The NAHB Research Center is on the web at www.nahbrc.org

Wood

Builder shall avoid disposal of a minimum of 75% of solid sawn wood by recycling at a state or county approved program or by on-site grinding and application of wood chips as mulch. Pressure treated wood shall be exempt from this requirement and may not be milled or applied as mulch.

Cardboard

Builder shall recycle a minimum of 75% of cardboard.

Metal

Builder shall recycle a minimum of 75% metal generated from construction waste and beverage cans by recycling at a state or county approved recycling program.

Drywall

Builder shall avoid disposal of a minimum of 75% of drywall through an approved recycling program, or by on-site grinding and application of drywall as soil amendment.

Plastics

Builder shall recycle a minimum of 75% of construction plastic and beverage containers.

Shingles

Builder shall recycle a minimum of 75% of shingle waste.

INDOOR AIR QUALITY

COMBUSTION SAFETY

Prerequisite: No un-vented combustion fireplaces or space heaters are permitted by the Arlington Green Home Choice House program.

Detached garage

The garage shall be completely isolated by a minimum of 6 inches from the exterior walls or floor of any conditioned area of the house. Any connecting breezeway shall be sealed at both ends to prevent fire-spread. An open carport or no garage is eligible for these points.

Attached garage—air sealing

The bottom plate and all penetrations (such as plumbing or electrical lines) in the connecting wall between an attached garage and house shall be sealed with caulk, spray foam, gasket or construction adhesive to prevent air movement.

Attached garage—exhaust fan

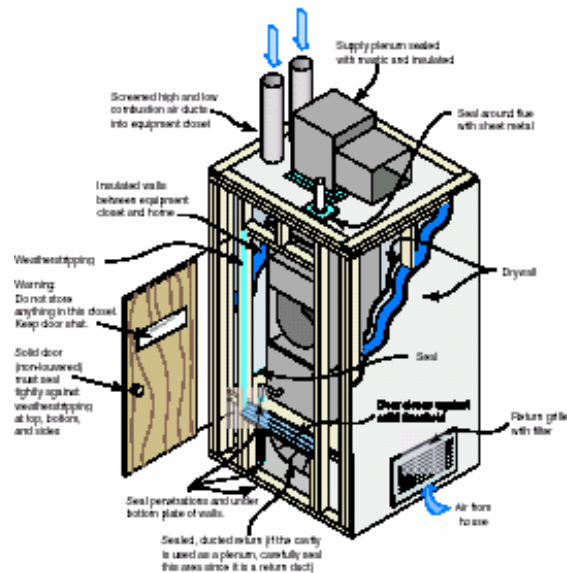
An attached garage shall have an exhaust fan rated at a minimum of 100 cubic feet per minute of air flow and be controlled by a timer or motion detector if operated intermittently, or the fan shall be rated at a minimum of 25 cubic feet per minute if operated continuously.

Direct vent, sealed combustion fireplace

All gas-burning fireplaces shall be sealed combustion, direct vent units, as rated by the American Gas Association (AGA), that draw in combustion air from outdoors and vent combustion by-products directly outdoors. AGA is on the web at www.aga.org

Furnace combustion closet isolated from conditioned area

All furnaces shall be installed in isolated contained closets or outside the building envelope. Closets shall be sealed between the bottom plate and subfloor, contain drywall covering the interior walls, and have a solid (non-louvered) access door that has weatherstripping and a threshold. Combustion air for closets shall be provided from outside the house in compliance with the mechanical code.



Foundation drains to daylight

Foundation drains installed to discharge to daylight by gravity (no sump pumps)

Water heater combustion closet isolated from conditioned area or power vented

If an atmospheric combustion water heater is located within conditioned space, the water heater shall have power venting or be installed in an isolated, contained closet. The closet shall be sealed between the bottom plate and subfloor, contain drywall covering the interior walls, and have a solid (non-louvered) access door that has weatherstripping and a threshold. Combustion air for the closet shall be provided from outside the house in compliance with the mechanical code. *Water heaters in unconditioned spaces such as garages and attics are eligible for these points.*

Carbon monoxide detector

If the house has an attached garage or combustion appliance, a carbon monoxide detector shall be installed at a minimum of one per floor.

Backdraft depressurization test

A "worst case house depressurization test" shall be performed by an independent third party. The test shall verify that house mechanical equipment, including exhaust fans, clothes dryer, power vented water heater, and air handler, does not create negative indoor pressures (with respect to outdoors) of more than 3 Pascals. Differing atmospheric conditions or additional exhaust appliances may alter the results of this test.

MOISTURE CONTROL

Foundation drain on top of footing

Foundation drain shall be installed around entire foundation and covered with silt protection fabric, gravel, or both. All drain lines shall be connected away and downhill from the foundation.

Foundation drain at outside edge of footing

Foundation drain shall be installed flush with the bottom of the footing and covered with silt protection fabric, gravel, or both. All drain lines shall be connected away and downhill from the foundation.

Drainage board for below grade walls

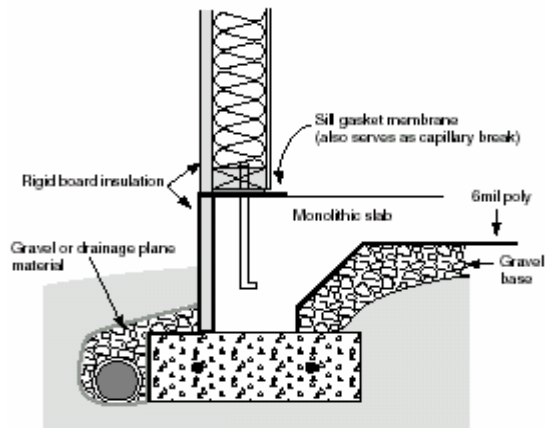
All below grade walls shall be damp-proofed and feature a drainage plane material that channels water down to the drain tile.

Gravel bed beneath slab

A minimum four-inch deep gravel bed shall be installed beneath all concrete floor slabs. If plastic vapor barrier is installed, plastic must be on top of gravel.

Vapor barrier beneath slab (above gravel) and in crawl space

A minimum 6mil polyethylene vapor barrier shall be continuously installed beneath all concrete floor slabs, and over all exposed earth in crawl spaces. 100% coverage is mandatory.



Capillary break between foundation and framing

A capillary break shall be installed between a concrete foundation wall and sill plate. A complete framed wall width sill gasket, EPDM- type rubber, or other suitable membrane shall be installed to prevent moisture from wicking through the foundation into the framing.

VENTILATION

Radon/soil gas vent system

A passive radon vent system shall be installed in compliance with EPA guidelines for "Model Standards and Techniques for Control of Radon in New Residential Buildings."

Radon test of home prior to occupancy

Builder shall conduct a radon test of house after final construction is complete and provide test results to home buyer. Radon test must comply with EPA guidelines. If test indicates greater than 4 pico-curies per liter radon concentration, builder must follow EPA guidelines to reduce radon levels.

Energy Star bath fans

All bath fans shall be Energy Star rated. This rating requires that fans 75 cfm or smaller be no louder than 2.0 sones and move a minimum of 1.4 cfm/watt. Fans 76 cfm or larger must be no louder than 1.5 sones and move a minimum of 2.8 cfm/watt.

Kitchen range hood or downdraft vented to exterior

All kitchen range or downdraft hoods shall be vented directly to the outdoors. Intentional make-up air shall be provided for any kitchen vent fan rated at greater than 150 cfm.

Ceiling fans

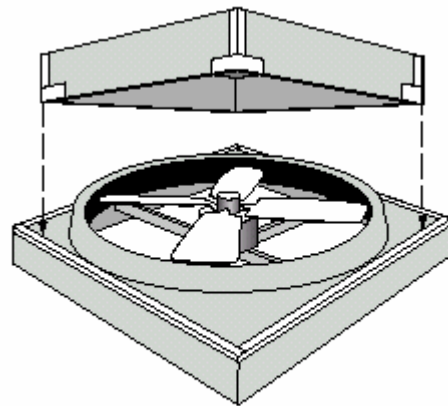
A minimum of three (3) ceiling fans shall be installed. Each fan shall be installed in the center of the room with at least 8" fan-to-ceiling clearance and have a minimum diameter of 48".

Automatic tub/shower room fan controls

All bath fans installed in rooms with tubs or showers shall have timer or humidity controls.

Whole house fan

Whole house fan shall be installed with an insulated cover. A cover shall be constructed to air seal and insulate whole house fan. Homeowner shall be instructed to remove cover before operating the fan and replace cover during seasons when not in use. Attic ventilation must provide at least one square foot of net free vent area per 750 CFM of fan air flow (CFM= Whole House Fan ACM Capacity x Volume of House).



A low-cost insulated whole house fan cover should be used during the off season.

Controlled house ventilation

A controlled ventilation system shall provide for continuous whole house ventilation of at least 15 cfm per person per hour (# persons = # of bedrooms plus one).

Vented garage storage room

A separate storage room shall be provided in the garage with a lockable door and vented directly to the outdoors with a minimum of 100 square inches of net free vent area per 100 square feet of floor area.

No power roof vents

No electrically-powered roof exhaust vents shall be installed.

Outside air intake without damper

An outdoor air intake duct shall be connected to the return side of each air handler to bring in fresh outside air for ventilation. The air shall be filtered and the intake duct shall be sealed and insulated when run through unconditioned spaces. The inlet must have a screen to deter birds, squirrels, etc.

Outside air intake with dampers

An outdoor air intake duct shall be connected to the return side of each air handler to bring in fresh outside air for ventilation. The air shall be filtered and a damper (barometric or motorized) should close automatically when the air handler fan is not operating. The intake duct shall be sealed and insulated when run through unconditioned space (such as attic or crawl space). The inlet must have a screen to deter birds, squirrels, etc. Finally, the duct must have a manual damper to control the amount of fresh air.

MATERIALS

Subfloor urea-formaldehyde free

Subflooring shall not contain urea-formaldehyde.

All cabinets, shelves, and countertops urea-formaldehyde free

Cabinetry, shelves, and countertops shall not contain urea-formaldehyde.

All surfaces of particle board in house sealed with water-based sealant

If urea formaldehyde materials are used in conditioned space, all 6 sides must be coated with a water based polyurethane sealant or a specialty formaldehyde sealant. Sealant shall have a maximum VOC (Volatile Organic Compounds) content of 250 g/l.

Low VOC paints - interior

All interior paints shall have a maximum VOC content of 150 g/l for nonflat and 50 g/l for flat paint (as per Green Seal standards).

Low VOC paints – exterior

All exterior paints shall have a maximum VOC content of 200 g/l for nonflat and 100 g/l for flat paint (as per Green Seal standards).

Low VOC stains and finishes on wood floors

All interior wood floor stains and finishes shall have a maximum VOC (Volatile Organic Compound) content of 250 g/l.

FSC Certified Wood

At least 50% of the wood used for the project shall be certified as sustainable from the Forest Stewardship Council (EDIT)

Low VOC sealants and adhesives

All interior sealants and adhesives shall have a maximum VOC (Volatile Organic Compound) content of 250 g/l.

Outdoor structures made from non-CCA pressure treated lumber

All outdoor decking and porches shall be constructed of lumber that has not been pressure treated with CCA (Copper Chromium Arsenic). Other types of pressure treated lumber or plastic lumber are eligible.

Low VOC Carpet

The builder shall provide a current letter from the Carpet and Rug Institute certifying that the specified carpet type to be supplied has been tested and meets all the requirements of the CRI Indoor Air Quality Carpet Testing Program.

Alternative termite treatment

Acceptable termite soil treatments include termite baiting, stainless steel mesh, or basaltic sand. Homeowner shall be educated to type of system installed and maintenance or monitoring requirements.

Central vacuum system with outside collection receptacle

A central vacuum system shall be installed with storage receptacle located outside of conditioned space or sealed to prevent dust from entering the home.

Filter/air cleaner with minimum 30% dust spot efficiency

The installed air filter/cleaner shall have a minimum atmospheric dust spot efficiency of 30% according to ASHRAE standard 52-76. (Ozone generators are not permissible as air cleaners.)

Ducts sealed until construction completed

All duct boots shall be sealed from contamination during construction, including during sheetrock, finish floor installation, and painting.

WATER—INDOOR

Prerequisite: All fixtures must meet National Energy Policy Act standards for low flow.

Water filter

Primary kitchen faucet shall be installed with a water filter that meets National Sanitation Foundation specifications.

High efficiency clothes washer

Installed clothes washer shall consume less than 27 gallons of water per use.

Pressure reducing valve

A pressure reducing valve shall be installed on the house side of the main shut off valve to control water pressure to all fixtures.

High efficiency showerheads

At least 80% of all showerheads in the home must exceed the National Energy Policy Act (NEPA) by a minimum of 10% less flow. The NEPA requires flow of 2.5 gal/minute or less, so showerheads with 2.25 gal/minute or less qualify for this point.

High efficiency bathroom faucets

At least 80% of all bathroom faucets in the home must exceed the National Energy Policy Act (NEPA) by a minimum of 10% less flow. The NEPA requires flow of 2.5 gal/minute or less, so bathroom faucets with 2.25 gal/minute or less qualify for this point.

High efficiency kitchen faucets

At least 80% of all kitchen faucets in the home must exceed the National Energy Policy Act (NEPA) by a minimum of 10% less flow. The NEPA requires flow of 2.5 gal/minute or less, so kitchen faucets with 2.25 gal/minute or less qualify for this point.

High efficiency toilets

At least 80% of all toilets in the home must exceed the National Energy Policy Act (NEPA) by a minimum of 10% less flow. The NEPA requires flow of 1.6 gal/flush or less, so toilets with 1.45 gal/flush or less qualify for this point.

Hot water demand re-circulation

A hot water demand system shall be installed on the fixture furthest from the water heater. This recirculation pump will minimize wait time for hot water, thereby reducing waste. Remote switches to activate the system shall be installed on intermediate fixtures between the pump and water heater.

Shower drain heat recovery device

A drain heat recovery device shall be installed on one shower in the home. This device recovers a minimum of 25% of the wasted heat from the shower drain water.

High efficiency water heater

Tank type water heaters shall meet Energy Star standards or have an Energy Factor rating equal to or greater than 0.62 for natural gas, 0.62 for propane, or 0.92 for electric resistance.

Water heater tank insulation

Water heater tank shall have an insulating jacket equal to or greater than R5. Jacket must be installed according to manufacturer's recommendations.

Water heater pipe insulation

The first two feet of cold and hot water pipe closest to the water heater tank shall be insulated with a minimum of 1/2 inch foam, preferably through the heat traps installed in the hot and cold water pipes.

Heat traps on water heater

Convective check valves, loops, or inverted "U" piping shall be plumbed within two feet of the inlet and outlet of the water heater to serve as heat traps and prevent standby convective losses.

Solar Hotwater

Heat recovery water heater

On-demand hot water

WATER—OUTDOORS

Xeriscape guidebook given to homeowner

(EDIT) Cooperative Extension Service's, "Xeriscape- Guide to Developing a Water Wise Landscape" shall be provided to the home buyer.

Xeriscape plan provided to homeowner

A drought tolerant landscape plan developed by a landscape architect, horticulturist or other professional shall be provided to the home buyer.

Xeriscape installed

The installed landscape shall meet the requirements of a xeriscape as detailed in the _____ and at a minimum contain low, medium and high use water areas, minimal turf grass areas, and extensive use of drought tolerant plantings.

Timer on hose bibs or irrigation system

Each outdoor hose bib shall have a timer to control irrigation, or if an irrigation system is installed, it shall have a timer.

Drip irrigation system

A minimum of 50% of landscape planting beds shall have a drip irrigation system.

Greywater irrigation

A greywater irrigation system shall be approved by local building and/or health departments. Greywater system may include sump discharge, air conditioner condensate, clothes washer, etc.

Rainwater harvest system

A minimum of 50% of the rain from the roof shall be collected and stored for irrigation use.

Permeable pavement

A minimum of 80% of paved surfaces for driveways, sidewalks, and patio areas shall have a pavement system that allows for infiltration of water.

HOME BUYER EDUCATION

Prerequisite: Builder shall provide the home buyer a notebook with detailed information about the selected environmental features included in the Home. This will include manuals, warranties, operating instructions, a copy of the Scorecard, and any other information deemed appropriate (NEEDS EDITING)

Guaranteed energy bills

The builder, utility or third party shall certify that the energy bills for a minimum two year period shall not exceed a baseline level. The guaranteed level shall be less than 30% of the energy use predicted for a home built to the standards of the current state energy code

Review energy operations

The builder shall review the proper use and maintenance of all energy using systems, such as bath fans, fireplaces, filters, ventilation filters, and thermostats, with the home buyer and provide a manual that summarizes these procedures.

Review irrigation system operations

The builder shall review the proper use and maintenance of all irrigation systems with the home buyer and provide a manual that summarizes these procedures.

Built-in recycling center

The builder shall provide site-built or commercially manufactured recycling containers for newspaper, magazines, and at least one other material.

Local recycling contact

Builder shall provide the home buyer information on recycling services offered by Arlington County.

Household hazardous waste resources

The builder shall provide the home buyer with information on Arlington County’s household hazardous waste disposal program.

BUILDER OPERATIONS

Builder markets Arlington Green Home Choice program

Builder shall include Arlington Green Home Choice logo in all print materials, advertisements and other promotional materials.

Environmental checklist provided to all Subcontractors

Builder shall provide and review the relevant Arlington Green Home Choice measures with each subcontractor to ensure their compliance with the program guidelines.

BONUS POINTS

Site located within ¼ mile of Metro or ½ mile from other mass transit

Bonus points shall be awarded for homes located within 0.25 mile of a Metro station or ½ mile from other mass transit (Metro bus, ART bus, or other available transit).

Sidewalk connects house to business district

Bonus points shall be awarded where continuous sidewalk connects the house to the local business district, including grocery store, restaurants, and entertainment.

Solar and wind electric system

Bonus points shall be awarded for a solar electric system which is capable of producing 20% of the home's electrical load. All electrical inspections must meet the National Electric Code. The solar array must remain unshaded year round, be oriented to within 15 degrees of true south, and be angled horizontally within 15 degrees of latitude.

Alternative vehicles: electric charging station

Bonus points shall be awarded for a home equipped with an electric charging station or for refueling alternative fuel vehicles.

American Lung Association Health House

American Lung Association Health House Bonus points shall be awarded for homes built according to the criteria and performance standards set forth by the American Lung Association® for the Health House Project.

Exceeds Energy Star

One bonus point shall be awarded for each one point exceeded in the Energy Star rating for a home, for a maximum of 5 points. For example, an Energy Star rating of 88 shall receive 2 bonus points.

Innovation points

Builder shall submit specifications for innovative products or design features to qualify for additional points.