# Certified by Earthcraft Standards List

# Site Planning

Must comply with all federal, state and local government erosion control and tree protection measures. Required: workshop on erosion and sediment control Erosion control site plan Excavated topsoil protected from erosion Tree planting (12 per acre) Certified Wildlife Habitat

# **Energy Efficient Building Envelope and Systems**

Penetrations through top and bottom plate sealed Bottom plate sealed to floor or foundation Window and door rough openings sealed Gaps in exterior wall sheathing sealed Sheathing penetrations sealed (including exterior light fixtures) Penetrations through band sealed (including exhaust ducts, etc.) Exterior walls of fireplace chase sealed and behind exterior tub walls Penetrations through insulated subfloor sealed Seal all HVAC boots to subfloor drywall (including ceiling) Shower and tub drains sealed All recessed can lights in insulated ceilings must be airtight and IC-rated Penetrations through insulated ceiling sealed Access panel and knee-wall doors weather-stripped Access panel and knee-wall doors sealed at rough opening Penetrations through drywall in attached garage sealed No polyethylene shall be used on exterior walls or foundation walls Air barrier installed behind tubs and showers on exterior walls All chases in contact with building envelope have air barrier applied to the interior of the chase where it meets the building envelope Penetration through band sealed (including bathroom exhaust fan) Chases sealed and insulated Attic knee wall has sealed attic-side, rigid sheathing Joist cavities under attic knee wall blocked

#### **Additional Air Sealing Measures**

Seams in band joist between conditioned floors sealed Drywall penetrations in insulated walls sealed Ceiling drywall sealed to top plate House wrap installed with all seams and edges taped If vaulted ceiling, blocking installed with baffles to prevent air washing through insulation or use foam insulation

# **Blower Door Test**

Test result < 0.25 cfm50/sqare foot of building envelope (Fresh air ventilation required)

# **Insulation**

Slab insulation R10 Exterior walls & band joist R13 Flat ceilings R38 (baffles and blocking in vented attic)



Insulation installation Grade II based on RESENET standard For fireplace chase(s) on exterior walls fireplace chase must have solid air barrier to interior of chase Attic knee wall R19 insulation and attic side air barrier Attic pull down or scuttle hole R5 (Compressed batt not acceptable) Insulation installation quality Grade II Based on RESNET standard 2 stud corners with drywall clips or alternative framing Loose fill attic insulation card and ruler Attic insulation extended over wall cavity (Energy heel trusses or raised top plate) Vaulted and tray ceiling R38 Attic knee wall doors R8 Attic pull down or scuttle hole R19 (compressed batt not acceptable)

# Windows and Doors

Window U-factor <0.35 Glass door U factor <0.40 Window and glass door SHGC <0.35

# **Heating and Cooling Equipment**

Required Manual J calculation for sizing of heating and cooling equipment based on actual house orientation Required: Installed cooling equipment and/or heat pump oversized by no more than 15% of Manual J (all units) Required: adaptive recovery for programmable thermostat(s) when programmable thermostat(s) is used with heat pump(s) Required: Indoor and outdoor cells matched 90% AFUE furnace Meets sensible and latent heat loads (all air conditioners) SEER 14 cooling equipment Variable speed blowers ENERGY STAR rated programmable thermostat (all systems) Outdoor thermostat for heat pumps Cooling equipment has non-HCFC refrigerant Zone control with wired dampers-one system serves multiple zones Zoned control, zoned returns or transfer grills between zones

#### Ductwork/ Air Handler

Required: air handlers and duct systems sealed with mastic or mastic tape Required: code approved solid connector for all flex to flex connections Required: all supply and return ducts fully ducted with code approved materials (No panned joisted or stud cavities) Required: Supply and return duct work insulated to R8 outside of conditioned space All return ducts fully ducted with code approved materials (no panned joists) Air Handler located within conditioned space (all units) Return plenum duct take off free area is 120% of supply plenum duct take off free area (Requirement waived if installed per Manual D) No ducts in exterior walls or vaulted ceilings along rooflines Rigid supply trunk Interior doors with 1 inch clearance to finish floor

#### **Duct Blaster Test**

Test result <4% of floor area served leakage to outside

### Water Heater

High Efficiency water heater (min Energy Factor: gas 0.61 electric 0.93) Tankless Water Heater Pipe insulation on first two feet of pipe

### **Energy Efficient Lighting / Appliances**

All recessed light fixtures are ballasted compact fluorescents or LED Screw in compact fluorescent bulbs (min 90% of bulbs) ENERGY STAR dishwasher

# **Resource Efficient Design**

Total floor area of home 2100 – 2500 square feet Non-structural headers in non-load bearing walls T-walls with drywall clips or alternative framing

# **Resource Efficient Building Materials**

25% of Cement in concrete replaced with fly ash or slag Recycled concrete used as aggregate Air conditioner condensing unit pad (min 50% recycled content) Engineered floor framing Engineered roof framing Engineered wall framing All beams are engineered wood or trusses Interior trim finger jointed Required: flashing at wall/roof intersection integrated with wall and roof drainage planes Required: flashing at deck/wall or porch/wall intersection integrated with drainage plains Required: maintain 2" clearance between wall siding and roof surface (or per product manufacturers installation specification) Required: for roofs that slope along an adjoining wall surface, kick out flashing is installed Required: all roof valleys direct water away from walls, dormer, chimney, etc. **Roofing (30-year warranty)** Roof drip edge Drainage plane installed with all seams and edges sealed per manufacturer's recommendation Windows with minimum 25 year warranty 10 year warranty on all insulated glazing Roof gutters that discharge water 5 feet away from foundation or other drainage system meeting same intent Covered entryways (all doors)

#### Waste Management

Required: No construction materials shall be burned or buried on job site or anywhere but in a state approved landfill

Central cut Area

# Indoor Air Quality

Required: No unvented combustion fireplaces or space heaters

Required: No duct runs from house system serving garage

Required: Attached garage - seal bottom plate, penetrations and band area

Required: No air handler equipment in garage or conditioned air supplied to garage

Required: Sealed combustion furnace or furnace isolated from conditioned space (all units)

Required: Water heater in conditioned space is sealed combustion, power vent, direct vent or electric (No atmospherically vented water heaters in conditions space)

All fireplaces have outside combustion air supplied to them Carbon monoxide detector (one per floor required)

# **Moisture Control**

Foundation drain on top of footing Vapor Barrier beneath slab (above gravel) or in crawlspace

# **Ventilation**

Required: bathroom exhaust fans and clothes dryers must be ducted to outside Passive, labeled radon/soil gases vent system Kitchen range hood or downdraft vented to exterior Outside air intake with mechanical damper controlled with ventilation time Effective cross ventilation with insect screens No power roof vents

# **Indoor Pollutant Control**

Required: Ducts in floor protected until floor finishing All insulation urea-formaldehyde free All cabinets, shelves, and countertops urea-formaldehyde free Flush home with fresh air continuously for one week prior to occupancy Subfloor urea-formaldehyde free

#### Water

Required: All fixtures meet National Energy Policy Act low flow standards House water pressure 60 psi maximum

#### **Outdoor Water Conservation**

Non-turf, non-hardscapes covered with at least 2 inch layer of mulch or gravel

#### **Resident Education**

Review energy operations with owner Environmental features checklist for walk-through Local Recycling contact Household hazardous waste resources

#### **Builder Operations**

Required: Must build at least 1 EarthCraft House every year (if building >50 homes a year, must build at least 5 EarthCraft Houses every year) Markets EarthCraft House Program Environmental Checklist provided to all Subcontractors Uses Home Builders Association Handbook for warrant standards Certified Professional Home Builder

#### **Bonus Features**

Site located Within <sup>1</sup>/<sub>4</sub> Mile of Mass Transit Sidewalk connects house to business district (max. 2 miles) Lot designed for clearly defined pedestrian access to community paths Covered and usable porch Exceeds ENERGY STAR®