

Minnesota Green Communities Criteria
BUILD SPECIFICATIONS 2010

Affiliate:

Build ID:

The following items must be included in the building plans for approval **in addition** to all applicable local and state building and energy codes.

FILL OUT PAGE FIVE. This document AND the layout/elevations for this build constitute Exhibit B of the necessary documentation for Minnesota Green Communities Criteria compliance.

NOTE: The following is not the complete Green Communities Criteria (GCC) and Minnesota Overlay (MO), collectively referred to as the Minnesota Green Communities Criteria (MGCC). The following are the mandatory items that shall be included in bids before the build begins. The items below are listed with the GCC and/or MO criteria reference number. It is advised that the development team read the MGCC in their entirety before agreeing to build to the MGCC. The complete MGCC can be found here:

www.mngreencommunities.org

INFILL LOT: Infill lots are exempt from noted requirements. **Infill lots are defined as follows** (per criteria 2-1c of the GCC and exemptions listed in 2-2 of the MO):

1. Property previously built residential.
2. 75% of the property borders existing development (other homes OR established streets OR school) AND infrastructure (water/sewer).
3. Bordered by non-buildable area (easements, utility fall zones, steep grades, **NOT** including land ineligible for building due to protected status such as wetland, flood plain, etc).
4. Bordered by land set aside for future building phases/development.

I. Plan Review and Inspections (5-1)

- a. EITHER an Energy Star (or Energy Star compliant) Firm OR a Home Energy Rating System (HERS) consultant shall conduct a plan review for this build **before the build begins**. Inspections for Energy Star or HERS compliance will be arranged at the time of this plan review; inspections include
 - **Visit One: after framing and before insulation.**
 - **Visit Two: after insulation and before sheet rock.**
 - **Visit Three: final testing.** During this visit, a blower door (and possibly a duct blaster) test is conducted to determine the home's air leakage rate and calculate the home's overall efficiency.

II. Location

- a. Shall be located on lots with access to existing water/sewer, roads, etc. (2-1a)
- b. Shall **NOT** be located within 100 feet of wetlands or critical habitat (2-1b)
- c. Shall be within one mile of at least two community facilities (2-1c)
 - Facilities include: church, park/playground, store, restaurant, community center, etc.
- d. **Unless Infill** Shall be located in an area with a population density no less than 5 units / acre (2.2)
- e. Shall be located with access to sidewalks/pathways OR deed must include a right-of-way for potential future addition of sidewalks/pathways (2-3)
- f. **PHASE I Environmental Site Assessment IS NOT necessary** for developments of 5 or fewer units; and developments connected to a city water supply (3-1 MO)

III. Construction Site Maintenance (3-2)

- a. Erosion and sedimentation control on site shall include:
 - Stockpile and protect disturbed topsoil from erosion
 - Silt fencing, swales, or comparable measures to divert runoff
 - Protect onsite storm sewer inlets with straw bales, silt fencing, or comparable measures
 - If soil in a sloped area (25% or 4:1) is disturbed, use tiers, erosion blankets, or some comparable approach to keep soil stabilized

IV. Site Preparation

- a. Sub-slab preparation shall include (7-10b)
 - Install a capillary break of 4 inches of clean or washed gravel (1/2 inch diameter or greater) over soil
 - Cover gravel with 10-mil polyethylene sheeting moisture barrier, joints lapped 1 foot or more
 - **Radon mitigation** shall be incorporated as sub-slab AND active-ready (7-10b)
 - See EPA document 402-K-01-002 “Building Radon Out” for instructions based on design

V. Structure

- a. Foundation & Framing
 - See “EASY PASS SPEC SHEET”
- b. Drainage system shall include (7-11)
 - Weather-resistive barrier (Tyvek or otherwise)
 - Complete flashing detail at windows, doors, wall penetrations, roof/wall intersections
 - Drip edge & rain gutter system
- c. Integrated Pest Management
 - All wall, floor and joint penetrations will be sealed with low/no VOC caulk; provide rodent-proof and corrosion –proof screens for large openings.

VI. Doors & Windows

- a. See “EASY PASS SPEC SHEET”

VII. Insulation

- a. See “EASY PASS SPEC SHEET”

VIII. HVAC

- a. Allowances

The following items are mandatory in the MGCC and shall be included in the bid to the HVAC contractor.

- **Manual J and Manual S calculations** shall be performed (7-7); affiliate shall receive a copy of the results. This will require detailed information about the structure of the house.
 - The “EASY PASS SPEC SHEET” will provide most of the necessary information
- **Bath ventilation** shall exhaust to the exterior and shall be **EITHER** Energy Star rated point source fan **OR** tied in to whole-house system, capable to provide up to 50 CFM continuous (7-5a)
- **Kitchen ventilation** shall exhaust to the exterior (7-5b)
- **Ventilation system** shall provide fresh air per MN Energy Code 1322 (7.6a)
- **NO CAVITIES SHALL BE USED AS DUCT RUNS**
- **Clothes dryer exhaust** shall be rigid type and vent to outdoors (7-13)
- **Mechanical equipment** if combustion, shall be power vented or combustion sealed (7-18)
- **All interior caulks and sealants** must be low/no VOC; compliant with the table in section **X.b.** **UNLESS** the use of compliant products would void a warranty (7-2 MO)

- b. Appliances & Fixtures

The following shall be installed, whether or not they are included in the HVAC bid

- Mechanical ventilation system shall be in compliance with Minnesota Energy Code 1322
- Bath fans, if provided, shall be Energy Star rated AND operate while the light is turned on OR equipped with humidistat OR timer

IX. Electric

- a. Allowances

The following items are mandatory in the MGCC and shall be included in the bid to the Electrician.

- **Junction box in the attic** for *potential* future installation of an in-line radon mitigation fan
 - **NOTE:** an in-line fan will not be installed on new construction
- **CO detectors** shall be hardwired; one per each sleeping area, minimum one per floor (7-18)
- **All interior caulks and sealants** must be low/no VOC; compliant with the table in section **X.b.** **UNLESS** the use of compliant products would void a warranty (7-2 MO)

b. Appliances & Fixtures

The following shall be installed, whether or not they are included in the Electric bid

- Interior light fixtures shall conform to the following (5-3a):
 - At least 60% of the hardwired fixtures to be Energy Star
- Exterior light fixtures shall conform to the following (5-3b):
 - Motion OR daylight sensing
- All appliances shall be Energy Star if applicable (5-2)
 - Includes refrigerator, dishwasher, washing machine

X. Plumbing AND Wet Area Prep

a. Allowances

The following items are mandatory in the MGCC and shall be included in the bid to the Plumber.

- **Water heaters** shall be located in rooms with drains or catch pans (7-8)
 - Drains piped to the exterior
 - Non-water sensitive floor coverings
- **Condensate lines** shall be drained to drainage system, not deposited under slab
- **All interior caulks and sealants** must be low/no VOC; compliant with the table in section X.b. **UNLESS** the use of compliant products would void a warranty (7-2 MO)

b. Appliances & Fixtures

The following shall be installed, whether or not they are included in the Plumbing bid

- Toilets, showerheads, and faucets shall conform to the following flow specifications (4-1a):
 - Toilets: 1.3 Gals per flush
 - Showerheads: 2.0 Gals per minute
 - Faucets: 2.0 Gals per minute
- Materials in wet areas (bathrooms, utility rooms, mudrooms) shall conform to the following (7-9a):
 - No unsealed grout
 - No vinyl wallpaper
- Shower/tub enclosure shall conform to the following (7-9b):
 - Fiberglass or similar
 - **If using grouted material**, shall use backing materials such as cement board, fiber cement board, or equivalent (no paper-faced material)

XI. Interior Materials

The following items are mandatory in the MGCC and shall be included in all bids for interior materials.

a. Paints, coatings, and primers must be low/no-VOC (7-1)

- Materials and limits include those listed in this table

Paints/coatings/primers applied to interior walls and ceilings	Not to exceed, Grams/Liter
Flats	50
Nonflats	150

b. Adhesives and sealants must be low/no-VOC (7-2)

- Materials and limits include those listed in this table **UNLESS** the use of compliant products would void a warranty (7-2 MO)

Adhesive/sealant	Not to exceed, gm/ltr	Adhesive/sealant	Not to exceed, gm/ltr
Indoor carpet adhesives	50	Ceramic tile adhesives	65
Carpet pad adhesives	50	VCT and asphalt tile adhesives	50
Outdoor carpet adhesives	150	Dry wall and panel adhesives	50
Wood flooring adhesive	100	Cove base adhesives	50
Rubber floor adhesives	60	Multipurpose construction adhesives	70
Subfloor adhesives	50	Structural glazing adhesives	100

c. **Wood** or wood composite material must be urea-formaldehyde free OR be sealed with a low/no-VOC sealant (7-3)

- Materials include: cabinets, sills, trim, flooring, shelving, doors, etc.

d. **Flooring** shall conform to the following (7-4):

- Carpet, if installed, shall be Green Label Certified
 - **Absolutely no carpet in basements, utility rooms, or kitchens**
- Any adhesives shall conform to the limits set in section “**X.b.**” of this document
- See “EASY PASS SPEC SHEET”

XII. Garage if included, if attached (7-12)

- a. Shall include a continuous air barrier between conditioned space and garage
- b. NO air handling equipment in garage
- c. Connecting doors between conditioned space and garage shall include an automatic closer, shall be fixed with gasket or otherwise made air-tight
- d. A CO alarm shall be attached to the conditioned side of the common wall AND not in a sleeping area (i.e. in addition to any CO detector provided for a sleeping area that might also share a common wall with the garage)

XIII. Landscaping (3-3)

- a. Selection of new trees and plants shall be
 - At least 50 % native species
 - 100% appropriate to the site’s soil
 - Shall not include invasive species

XIV. Homeowner Orientation

- a. The affiliate shall provide the “We Built it Green” homeowner manual, or comparable manual addressing energy and health features, in addition to other homeowner educational materials offered.
- b. The site supervisor and/or construction manager shall provide the homeowner a walkthrough, detailing the use, maintenance, and benefits of the Minnesota Green Communities Criteria features **in addition** to the standard operations and maintenance of the home.

XV. Easy Pass Spec Sheet

- a. The following sheet details the **minimum necessary** features to include in a MGCC build. It is also set up to collect information necessary for contractors and/or rating officials to run diagnostic calculations on the house. Please complete the “This Build” column and keep it with the layout/elevation for the build.
NOTE: The specifications listed in the “Minimum Necessary” column are based on the entire state. Your affiliate may or may not need to implement everything listed. This is called an “Easy Pass Spec Sheet” because you are sure to meet all criteria if you use these specifications. **HOWEVER**, check with your Energy Star Firm or HERS rater to determine whether or not these specifications meet requirements that may be particular to your area.

Build ID					
Dimensions	L:	W:	Wall Height:	Sq.Ft:	Volume:
Roof Dimensions	Pitch:	Overhang N-S:	Overhang E-W:	Sq.Ft:	
Bdrms / Baths					
Family Size					

	Minimum Necessary	Options	This Build
Framing	No requirement (stick, Insulated Concrete Form, etc)		
Center	16"	24"	
Width	2x6		
Trusses	No requirement (standard, cathedral, etc.)		
Heel height	7 - 1/4"	12" +	
Foundation	No requirement (basement, crawl, slab, etc.)		
Basement - framing	No requirement (block, permanent wood, etc.)	Insulated Concrete Form	
Slab - footing depth	Local code	18" (frost protected shallow)	
Slab - under	r-10		
Slab - perimeter	r-10		
Slab thickness	Local code		
Window info			
Material MAKE/MODEL	No requirement (vinyl, wood, metal, combo, etc.)		
Pane/Glaze/Fill	Double	Double/low-e/argon	
U-value	U-0.33		
Water heater			
Source	No requirement (gas, electric)		
Type MAKE/MODEL #	No requirement (gas, electric); efficiencies follow: GAS: 40 gal = .61 60 gal = .57 80 gal = .53 ELECTRIC: 40 gal = .93 60 gal = .92 80 gal = .89	Combination/integrated system (heating & domestic water)	
heat source			
Source	No requirement (gas, electric)		
Type MAKE/MODEL #	No requirement (forced air, boiler, in-floor); efficiencies follow: GAS: ≥ 84%	GAS: efficiency of 92% - 94%	
Thermostat	No requirement	Programmable	
plumbing fixtures			
Faucets & showerheads	2.0 gal/minute		
Toilets	1.3 gal/flush		
Ventilation			
Kitchen	Dedicated to outside		
Bath MAKE/MODEL #	Energy Star AND dedicated to outside AND tied to light OR tied to mechanical system AND continuous	Controlled by timer OR humidistat	
Whole-house MAKE/MODEL #	Mechanical ventilation per MN Energy Code 1322	HRV, ERV, ≥ 76% efficient	
insulation			
Wall r-value Type	r-21 No requirement (fiberglass, DOW board, etc.)	r-24 5-1/2" batts + 1" DOW board exterior	
Attic r-value Type	r-39 No requirement (cellulose, fiberglass, etc.)	r-55 1-1/2" foam + 12" blown cellulose	
Ducts	r-6 (if located in unconditioned space)	r-8 OR locate in conditioned space	
lighting/appliances			
Hard-wired fixtures	60% must be Energy Star	100% Energy Star	
Appliances MAKE/MODEL #	Energy Star (list refrigerator, dishwasher, washing machine)		FRIDGE WHIRLPOOLW8TXEWFV
flooring	Laminate/tile/vinyl OR Green Label carpet & pad; NO CARPET IN BASEMENTS		
interior woodwork	Exposed edges sealed with low/no VOC sealant	All urea-formaldehyde free	