



**Minimum and Preferred Design Requirements
New Manufactured Single-Family
Detached Housing Units**

October 2007

CSI FORMAT

Division I: General Requirements

Division II: Site Work

Division III: Concrete

Division IV: Masonry

Division V: Metals

Division VI: Woods/Plastics/Rough Carpentry

Division VII: Thermal and Moisture Protection

Division VIII: Doors and Windows

Division IX: Finishes

Division X: Specialties

Division XI: Equipment

Division XIII: Special Construction

Division XV: Mechanical

Division XVI: Electrical

CSI FORMAT

The Construction Specification Index (CSI) is the standard filing system used by all architectural, design, engineering and construction professionals. The CSI format provides a uniform approach to organizing specification text by establishing a structure consisting of 16 divisions (see table of contents). Each division is divided into articles subordinate paragraphs and subparagraphs with a five-digit code. An example of the filing system can be seen below:

Where to find pressure treated wood decking?

Division VI: Woods and Plastics

06070 Wood Treatments

Wood Decking

KHC has simplified the categorization of the CSI format and has eliminated the five digit numbering code, replacing the number with a bullet for example:

Where to find pressure treated wood decking?

Division VI: Woods and Plastics

- Wood Decking

For additional information or questions regarding CSI Format, please contact the Department of Design and Construction Review at (502) 564-7630, extension 706.

Division I: General Requirements

- Minimum Design Standards

Minimum Design Standards shall apply to new construction and reconstruction of all manufactured single-family Detached homes constructed with funds from the HOME Investment Partnerships (HOME) Program, Affordable Housing Trust Fund (AHTF) and/or Housing Credits. These funds are available through KHC’s Department of Housing, Finance and Construction (HFC). The standards become effective when funding from KHC is 10 percent or more of the cost per unit.

Note: KHC’s Minimum Design Standards are to be used as a guideline to meet and exceed all local, state, and national codes. These standards also provide a way to enforce above average construction and design for builders, contractors, and design professionals who wish to utilize funding from the Kentucky Housing Corporation’s (KHC), Department of Housing, Finance and Construction. Other methods of construction and design may be acceptable on a case by case basis. **If you feel your design meets or exceeds KHC’s Minimum Design Standards, please contact the Department of Design and Construction Review for further assistance.**

- Codes

1. Manufactured housing units must comply with RHS requirements under 7 CFR § 3550.73. Manufactured housing units must also meet the Manufactured Home Construction and Safety Standards established in 24 CFR, Part 3280.

- In cases where the requirements of KHC conflict with the RHS requirements, 24 CFR part 3280 or 7CFR§ 3550.73, KHC’s requirements shall prevail.
- *Only new housing units which have never been occupied are eligible for KHC financing.* The minimum net width of a unit shall be twenty (20’) feet and the minimum net length shall be forty (40’) feet.

NOTE: These requirements are in addition to the Kentucky Residential Code, KHC Universal Design Tier One, local planning and zoning, local authorities and jurisdictions.

Kentucky Housing Corporation’s Universal Design applies to projects receiving 50 percent or greater of KHC HFC Funding, local planning and zoning, and local authorities and jurisdictions.

- Energy Efficiency

All manufactured housing units must meet the thermal requirements of Zone III as defined in the National Manufactured Housing Construction and Safety Standards as promulgated by the United States Department of Housing and Urban Development (HUD). The builder, developer or dealer shall provide the buyer the “Comfort Heating and Cooling Certificate” designed according to NEPA 501 BM-1976.

- Minimum and Preferred Design Requirements

The following minimum and preferred design items are for all Manufactured single-family detached units, including rental units:

- Quality Assurance

Contractor/dealer shall furnish a written material and labor warranty on the dwelling and all required and or supplied appurtenances for a period of one full year after occupancy.

- Unit Size Requirements

The following minimum square foot measurements are required for the different type of units. Net square feet are the heated and cooled area of the home.

Two-bedroom units: shall contain at least 800 net square feet.

Three-bedroom units: of less than 1,000 net square feet, but more than 863 net square feet, for sale to a home buyer, may be built under the following conditions:

- a) The unit must be built on a scattered, non-subdivision site (no more than one unit per site);
- b) Units must be for households containing up to no more than four people and earning an annual income of less than 50 percent of the area median income.

The unit also must meet the requirements of Tier One of KHC’s Universal Design Policy regardless of the amount of KHC funding

Four-bedroom units: shall contain at least 1,100 net square feet.

- Universal Design Requirements

Projects that receive debt or subsidy financing from KHC equal to 50 percent or more of the total project cost for the purpose of constructing single family or multi-family housing shall comply with KHC’s Universal Design Policy. Please consult KHC’s web site for the most current version of the Universal Design Requirements:

[http://www.kyhousing.org/uploadedFiles/HFC/Design and Construction/UDPoli cy.pdf](http://www.kyhousing.org/uploadedFiles/HFC/Design_and_Construction/UDPoli%20cy.pdf)

Division II: Site Work

- Easements

Setbacks or clearances may occur where units are placed on sites that have adjacent steep slopes. Please refer to the KRC, Section R 403.1.7. Other engineered designs may be presented to KHC for consideration.

- Entries

All entries shall have a concrete, treated wood, or other hard surface exterior stoop, porch or deck, a minimum of 5' x 5'. The main entry shall have a roof or awning over the entry area. The roof shall cover at least a 5' x 5' area.

- Landscaping

Sodded Areas: It is preferred that the front yards of each single family home be sodded.

Trees: it is preferred that trees shall be planted with adequate spacing and ground cover.

Turf: At a minimum, each home shall include a basic landscaping package. All lawn areas shall be seeded with the seed variety, lime, and fertilizer application rate, which is appropriate to establish a good lawn cover. All slopes in excess of 3:1 within 10 feet of the home, driveway and/or walkway (within 50 feet of the home) shall receive sod or other approved erosion control materials which will enhance the establishment of a permanent ground cover.

- Parking/Driveways

At a minimum provide on site parking for one vehicle. This parking area shall at a minimum be graveled with crushed #57 limestone, 4" thick and compacted. Homes located in a residential subdivision of four or more units shall have a paved driveway. For urban locations where on site parking is not typical consult the KHC Department of Design and Construction Review.

Asphalt: (Preferred on detached single-family) shall consist of a hot mix asphaltic concrete pavement such as manufactured by plants. Minimum 2" thick over an adequate crushed rock base with a minimum thickness of 4".

Concrete: (Preferred on detached single-family) shall conform to the latest revised Standard Specification for Portland Cement, ASTM C595. All concrete shall have a minimum 28-day compressive strength of 4000 PSI, and be entrained with 5 percent air with a minimum cement content of 520 lb. per cubic yard (5.5)

sacks). Minimum concrete thickness 3 ½". Follow American Concrete Institute (ACI) 318. Provide a crushed rock base with a minimum 4" thickness.

- Soil Treatment-Termite Protection

Provide proper and complete termite treatment by a licensed exterminator, with a homeowner option to extend the contract.

- Utilities Services

Electric: It is preferred that electrical service to new units be underground.

Laundry: all homes shall be equipped with washer and dryer hookups. Laundry facilities located on the second floor shall be equipped with a washer overflow pan piped to carry the overflow to an appropriate location.

Phone: all homes shall be wired for telephone.

- Walkways

All units shall have a paved walkway from the parking area to the main entrance

Concrete pads and walks: All entry walks shall be a minimum of 42" wide, 4000 psi, and shall be provided at all units from the entry to parking area. Provide ¼ inch per foot crown or cross slope in the direction of drainage. Follow ACI 318. Minimum Concrete thickness 3 ½".

Public/Entry walks: When single-family units are located on adjacent lots in a subdivision (5 or more units) type arrangement, it is preferred that public walks be constructed that connect the lots. Walks shall be constructed at a minimum of 42" wide and with 4000 psi concrete. Other hard surface walkways, such as blacktop, may be acceptable to KHC. Walkways, whenever possible should be located in the public right-of-way.

Division III: Concrete

- Concrete Finishes

It is preferred that brick, stone, or textured formwork patterns shall be used for all poured in place walls exceeding 3 feet or more exposure.

Division IV: Masonry

- Foundation: Seller/installer is required to pour a continuous concrete footer as instructed in the Kentucky Residential Code (KRC), Chapter 4, around the perimeter of the housing unit and install a masonry foundation wall of concrete block. This wall must be not less than 4" in width (block width must be wider if height of

foundation wall exceeds 36"). All block shall be laid in place and embedded with mortar. All block shall be laid plumb and level. No dry stack stucco is permitted. The foundation for the housing unit must comply with venting and access door regulations of the Kentucky Residential Code. Remove all axles and wheels. Also, remove the tongue. Install poured-in-place concrete footers according to the KRC for all bearing piers. Install concrete block piers per manufacturer's instructions.

- Anchoring: The anchoring system must be installed according to the manufacturer's instructions
- Face Brick

Shall be ASTM C 216, Type FBS, Grade SW, or equivalent, modular size.

- Concrete Masonry Units (CMU)

It is preferred that stucco or split face shall be used for all CMU walls exceeding 3 feet or more exposure.

Division V: Metals

- Steel Lintels

Steel lintels, when specified for openings in masonry walls shall be primed and painted.

Division VI: Woods and Plastics/Rough Carpentry/Millwork

- Cabinets and Drawers

Cabinet fronts shall be made of solid wood (not particleboard); doors, draws and fronts shall be factory finished. Cabinet ends shall be finished with appropriate veneer. All cabinets shall be Kitchen Cabinet Manufacturers Association (KCMA) Approved.

- Roof Construction

Minimum Roof Pitch: The minimum slope on all roofs shall be 4" vertical to 12" horizontal. Porch roofs are an exception.

- Stair Riser and Tread Construction

Steps: It is preferred that all steps shall have a riser not greater than 7" and a minimum tread of 11".

- Wood Decking

Composite preferred. All exterior wood shall have a preservative retention rate of 40 percent.

- Wood Stairs and Handrails

Composite preferred. All exterior wood shall have a preservative retention rate of 40 percent.

Division VII: Thermal and Moisture Protection

- Fascias

Metal: 0.019” minimum thickness pre-finished aluminum, (coil stock).

Exposed Wood: Redwood, Cedar, or pressure treated.

- Roof

Shingles: 235 lb. seal tab type over 15 lb. felt, with minimum 25-year product warranty.

Gutters and Downspouts: shall be prefinished aluminum, minimum 5” gutter and minimum 2”x 3” downspout. All downspouts shall empty onto concrete splashblocks or be piped to an appropriate location.

- Siding

Composite: Hardiplank or factory equivalent, primed, with two-coat minimum finish.

Metal: 0.024” minimum thickness aluminum or galvanized steel with factory finish.

Vinyl: 0.040” minimum thickness, UV protected.

Wood: cedar or redwood, stained or primed once with 2-coat minimum finish.

Division VIII: Doors, Windows and Glazing

- Door Accessories

Exterior hardware:

- a) It is preferred that exterior doors shall have doorknocker, security accessories (eyelet and deadbolt), and a kick plate.
- b) All entry doors shall be equipped with a brass plated or other durable metal finished key lock knob. Lever handle preferred.

Interior Hardware: All interior doors shall be equipped with brass-plated or other durable metal finished knobs. Plastic is not permitted. Install locks for bedrooms and bathrooms. Lever handle preferred.

- Exterior Doors

Exterior Doors shall be 1 ¾” made of steel or other equally durable material, insulated unless of solid wood (not particleboard) and be appropriately finished as recommended by the manufacturer.

- Windows

All window frames must be of solid vinyl, fiberglass, wood, or wood clad. All glazing shall be double-paned. The vapor seal on the glazing must have a minimum ten-year warranty. All windows shall have a minimum one-year warranty on the operation of the window. It is preferred that all windows have a National Fenestration Rating.

Division IX: Finishes

- Exterior Finishes

Wood: at a minimum all exposed wood shall have a preservative retention rate of 40 percent. All structural posts below grade shall have the factory treated end of the post below grade. Beginning January 1, 2004 Use of CCA Treated lumber shall be prohibited.

Posts and Columns: It is preferred that all posts (at deck level and higher), columns, and guardrails are factory made and factory finished.

Handrails: shall be smooth, splinter free, and painted or factory finished to withstand the weather and resist checking and splintering.

- Finished Floor Treatments

Carpet Padding: 7/16” thick, 6-lb. minimum re-bond polyurethane.

Sheet Carpet: 25 oz. minimum, 100 percent nylon. Other options include Berber type with blended fiber. In high traffic areas, 30 oz. minimum is preferred.

Sheet Vinyl: Shall be Armstrong or equal. Provide product adhesive and underlayment as recommended by the manufacturer. All surfaces shall be clean, dry, and appropriate temperature during installation. Minimum 10 mil wear layer. Vinyl sheet flooring shall conform to the requirements of ASTM F 1303, Type I.

Vinyl Tile: Shall be Armstrong or equal, 1/8” x 12” x 12”. Provide product adhesive and underlayment as recommended by the manufacturer. All surfaces

shall be clean, dry, and appropriate temperature during installation. Follow manufactures recommendation for pattern layout.

Wood Flooring: Flooring should be tongue and groove hardwood, factory finished, or have a minimum of three coats of site-applied, UV-protected polyurethane.

Other Flooring Products: Ceramic tile and laminates

- Interior entries

At the interior side of the main entry door, there shall be an uncarpeted, finished floor area. This area shall be no less than sixteen (16) square feet.

Division X: Specialties

- Closet Storage/Accessories

Closets should contain 12” deep shelf, including a coat rod. Shelves with integrated hangar hooks may also be used.

- Mailboxes

All homes served by the U.S. Postal Service shall have a mailbox installed per U.S. Postal Service Regulations.

Division XI: Equipment

- Bath

Accessories: All bathrooms shall have:

- a) medicine cabinet with mirror 16” wide by 20” tall (minimum)
- b) wall hung toilet paper dispenser
- c) 18” (minimum) towel bar

Other combinations of mirror and storage may be acceptable at the approval of KHC.

Bath Tub: Tubs should be 30” minimum width; made of fiberglass, acrylic, porcelain, or cultured marble.

Faucets: Lever handled faucets preferred. The housing of the faucet shall not be plastic.

Sink: Sinks shall be 15” minimum diameter; made of fiberglass, acrylic, porcelain, or, cultured marble.

Shower: Showers should be 36" x 36" minimum; made of fiberglass, acrylic, ceramic, or, cultured marble.

Toilet: Toilets should be 1.6 GPF; made of porcelain.

- Protection/Suppression Accessories

Smoke Alarms per HUD Code

Radon Reduction: Radon venting is desirable for all living units. A drawing can be provided to assist in installing the radon vent system. This drawing is available upon request from the Department of Design and Construction Review at Kentucky Housing. Call (502) 564-7630, extension 706.

- Kitchen

Countertops: shall be molded roll-backed, laminate plastic or Formica with finished ends and sealed at the cut out for sink. Other appropriate materials may be used such as Corian. Consult the KHC Department of Design and Construction Review.

Faucets: Lever handled faucets preferred. The housing of the faucet shall not be plastic.

Hoods: All units shall be equipped with a minimum 150 CFM range hood vented to the exterior of the building. Use ducting sized and ducting material per manufacturers recommendations. Provide a finished cover over exposed ducting.

Sink: 6" deep minimum, stainless steel, or porcelain, double bowl.

- Laundry

Shall have an overflow pan if laundry is located second level or higher.

Division XIII: Special Construction

- Equipment/Storage Enclosures

It is strongly encouraged that each single-family home be equipped with an exterior storage area. Storage area shall be a minimum of 48 sq. ft. for all units over 960 square feet and a minimum of five percent of the gross home area for all units with less than 960 sq. ft. Interior ceiling height shall be a minimum of 7' in all storage areas and the width or depth shall not be less than 4' interior dimension. Provide a pre-hung 3'0 x 6'8" entry door to the storage area with an entry lock. The storage area may be provided by any of the following:

- a) A free standing building architecturally similar to the house. Wood buildings with T-111, or equal, plywood siding painted the same color as the siding (in the case of brick the same color as the soffit) are acceptable. Metal buildings are not permitted.
- b) Units that make use of an unfinished crawl space for storage must create an appropriately-sized room with a concrete floor and provide the following:
 - A pre-hung metal entry door 3'0" x 6' 8"
 - 20-min. fire separation (walls and ceiling)
 - A switched light fixture
 - Adequate ventilation for hazardous fumes
 - Access to the rest of the crawl space.
- c) Storage areas attached to the unit. Attached storage areas should be designed to complement and blend in with the home. This area shall have a concrete floor and provide the following:
 - A pre-hung metal entry door 3'0" x 6' 8"
 - 20-min. fire separation (walls and ceiling)
 - A switched light fixture
 - Adequate ventilation for hazardous fumes

- Ramps

Note: When including an accessible ramp comply with the following in addition to the Kentucky Building Code: ramps shall be minimum 42" wide with a 5' turning areas at each landing.

Composite: PVC or other with non-skid surface.

Concrete: with non-skid surface.

Metal: galvanized steel, or aluminum with non-skid surface.

Wood: shall have a preservative rate of 40 percent. All structural posts below grade shall have the factory treated end of the post below grade. Beginning January 1, 2004, the use of CCA treated lumber shall be prohibited.

Division XV: Mechanical

- Heating Ventilating and Air Conditioning Equipment

All units shall be heated and cooled using high-efficiency equipment. Heat pump systems shall have a minimum SEER (Seasonal Energy Efficiency Rating) rating of 13.00 with a minimum HSPF (Heating Seasonal Performance Factor) rating of

7.7. Fuel oil and gas fired furnaces and boilers shall have an AFUE efficiency of 90 percent or better. Electric-resistance-only heat systems are not permitted. Alternative HVAC systems may be approved by KHC.

- Plumbing Accessories

Washers and hot water heaters located on the second floor or higher shall have overflow pan piped to positive drain outside or into DWV.

- Piping

Water Lines shall be insulated in all crawl areas, copper water lines preferred.

Division XVI: Electrical

- Exterior Luminaries

Shall be located at all entrances, and provide adequate lighting.

- Interior Luminaries

Each room, hall, stair, and walk in closet shall have a minimum of one switch-operated overhead light. Kitchens shall include switch-operated lighting over the cooking area, the sink area and the general or dining area. Bathrooms shall be equipped with switch-operated lighting over the lavatory area and the general area.