



Minimum Design Standards for New Construction, Adaptive Reuse, and Rehabilitation Multifamily Housing Units

**Kentucky Housing Corporation (KHC)
Revision 2026**



Summary of Changes: 2026 Revision

DATE	SECTION	DESCRIPTION of CHANGES
:	:	

Minor formatting or grammatical changes are not identified in this list.

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KHC Minimum Design Requirements

The following minimum design items are for all newly constructed Multifamily Units constructed under the applicable Kentucky Building Code (KBC). For Rehabilitation and Adaptive reuse projects, items which are added or replaced in the scope of work, must comply with this standard.

Multifamily Projects consisting of duplexes, or single family detached structures shall meet Kentucky Residential Code (KRC) and Kentucky Housing Corporation (KHC)'s "Minimum Design Standards for New Construction One and Two Family Dwelling Units" or "Minimum Design Standards for Rehabilitation of One and Two Family Dwelling Units" as applicable. Townhomes permitted under the KRC may follow Minimum Design Standards for New Construction, Adaptive Reuse, and Rehabilitation Multifamily Housing Units.

KHC's Minimum Design Standards (MDS) are used as a guideline to meet or exceed all applicable local, state, and national codes. While these standards are minimums, designers are encouraged to exceed these values when feasible. No portion of this document is intended to limit innovation to produce the best possible housing units. These standards also serve as a vehicle to promote and enforce modern construction and design practices for builders, contractors, and design professionals who wish to utilize funding from KHC. Other methods of construction and design may be acceptable on a case by case basis. If your design does not satisfy KHC's Minimum Design Standards, please contact the Department of Design and Construction Review for further assistance.

Acronyms and Abbreviations

Above finished floor (AFF)
Affordable Housing Trust Fund (AHTF)
American Concrete Institute (ACI)
American National Standards Institute (ANSI)
American Society for Testing and Materials (ASTM)
American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
Americans with Disability Act (ADA)
Annual Fuel Utilization Efficiency (AFUE)
Building Performance Institute (BPI)
Chromated-Copper-Arsenate (CCA)
Coefficient of Performance (COP)
Construction Specifications Institute (CSI)
Cubic feet per minute (CFM)
Drain/Waste/Vent (DWV)
Energy Efficiency Ratio (EER)
Energy Factor (EF)
Gallons Per Flush (GPF)
Heating Seasonal Performance Factor (HSPF)
Heating, Ventilation, and Air Conditioning (HVAC)
Home Energy Rating System (HERS)
HOME Investment Partnerships Program (HOME)
Housing and Urban development (HUD)
Housing, Buildings and Construction (HBC)
Insulation Contact (IC)
International Energy Conservation Code (IECC)
International Mechanical Code (IMC)
Kentucky Building Code (KBC)
Kentucky Housing Corporation (KHC)
Kentucky Residential Code (KRC)
Minimum Design Standards (MDS)
National Standards for the Physical Inspection of Real Estate (NSPIRE)
Oriented Strand Board (OSB)
Packaged Terminal Heat Pump (PTHP)
Polyvinyl Chloride (PVC)
Seasonal Energy Efficiency Rating (SEER)
Single Room Occupancy (SRO)
Small Multifamily Affordable Loan (SMAL)
State Historic Preservation Office (SHPO)
Ultraviolet (UV)
Underwriters Laboratories (UL)
Uniform Energy Factor (UEF)
United States Postal Service (USPS)
Universal Funding Application (UFA)
Volatile Organic Compounds (VOC)

Division 01: General Requirements

1) Multifamily Guidelines: Projects are to adhere to the requirements set by the Multifamily Guidelines in which the project received funding approval. In the event of a conflict between Multifamily Guidelines, Minimum Design Standards, or Code Requirements, the stricter requirement shall be used.

2) Minimum Design Standards:

- a) Minimum Design Standards shall apply when KHC funding exceeds ten percent (10%) or more of cost per unit to all new construction and reconstruction of multifamily dwellings, all applications involving adaptive reuse converting a former use to residential use and limited rehabilitation projects constructed with funds from the HOME Investment Partnerships Program (HOME), Affordable Housing Trust Fund (AHTF), Small Multifamily Affordable Loan (SMAL) program, Risk Sharing, Housing Tax Credits, Tax Exempt Bonds, or other KHC funding sources.
- b) This standard shall apply to the items which are added or replaced in the scope of work for all rehabilitation of existing multifamily properties and structures.
- c) These standards shall apply to the extent not exempted by the State Historic Preservation Office (SHPO).

3) Waiver Process: Understanding that no single code or standard can cover the infinite number of possible configurations and circumstances that may arise during rehabilitation or construction, a written request for waiver to a KHC requirement will be earnestly considered.

- a) All requests for existing projects are to be submitted electronically using KHC's Universal Funding Application (UFA) system waiver request form located within the UFA, under the "Other Actions" tab.
 - i) Please refer to the **Multifamily Guidelines** for more detailed information.

4) Codes: All construction shall comply with current applicable codes and standards as listed below:

- a) Current version of the Kentucky Building Code (KBC) in effect at permit application.
- b) Kentucky Housing Corporation's "Minimum Design Standards for New Construction, Adaptive Reuse, and Rehabilitation Multifamily Housing Units". (This document)
- c) Local planning and zoning requirements
- d) Local authorities' rules and regulations
- e) The Fair Housing Amendment Act of 1988 (applies to units constructed for first occupancy on or after March 13, 1991)
- f) Section 504 of the Rehabilitation Act of 1973
- g) Americans with Disabilities Act of 1990
- h) HUD National Standards for the Physical Inspection of Real Estate (NSPIRE)
<https://www.hud.gov/reac/nspire-standards>
- i) NOTE: The final submitted plans shall state which accessibility standards are included in the drawings.

5) Plans: The plans shall include but not be limited to the following illustrating KHC Minimum Design Standard compliance including all documents as required per the Multifamily Guidelines. The Final Set of Plans must be submitted and approved before notice to proceed will be issued.

- a) Foundation Plan at a readable Scale shall include all typical porches, decks, parking, walks, and driveways. This may be split into multiple pages as necessary.
- b) Floor Plan shall be at a readable Scale and include window and door locations and dimensions.
- c) Plans shall indicate whether dimensions are from stud to stud, center to center, or finish wall to finish wall.
- d) Plans shall include dimensions of bath vanities to determine design compliance.
- e) Plans shall include dimensions for length and width for hallways eighteen inches (18") and longer in length.
- f) Plans shall include bathroom dimensions illustrating design compliance.
- g) Plans shall include Wall Section from bottom of footing up to and including roof with dimensions at readable scale.
- h) Plans shall include the location and construction details of the required passive Radon system to be installed per building.
- i) Plans shall include details on porch roofs and the supporting structure.

- j) Plans shall include porch and deck details/sections with dimensions at readable scale. Include details on structural supports, floor joists, headers, girders, stair construction, guard rails, and handrails.
- k) Plans shall include elevations of front, sides, and rear at readable scale to include roof slopes.
- l) Plans shall include site plan. Include all porches, decks, carport, walks, and driveways with dimensions of setbacks at a readable scale.
- m) **ADDITIONS for Modular Units:**
 - i) Factory certification of compliance with KHC standards.
 - ii) Transportation and handling protocols to ensure module integrity.
 - iii) Module-to-module connection details.
 - iv) Site integration specifications.
 - v) State modular construction certification as applicable.

6) Specifications: The Final Set of Specifications must be submitted and approved before notice to proceed will be issued.

- a) Submit a complete set of building and site specifications using the Construction Specifications Institute (CSI) MasterFormat for each project.
- b) Any changes to approved plans and specifications shall be submitted to KHC for review and approval. A copy of approved plans and specifications shall be on site during construction and all inspections.
- c) Documentation from REScheck, COMcheck, or other approved source that the building envelope meets or exceeds the applicable International Energy Conservation Code (IECC) for new construction projects.
 - i) Proper ventilation and humidity control are required.
 - ii) REScheck information, software, and on-line training are available at <https://www.energycodes.gov/rescheck>

7) Soil Treatment-Termite Protection:

- a) **New Construction:** An appropriate termite treatment of the property is required.
 - i) The treatment shall be completed by a licensed exterminator.
 - ii) Documentation of the treatment applied and listing the certification / license number of the exterminator shall be provided to KHC.

iii) A warranty for a period of a minimum of one year on all treatments is required.

b) Adaptive Reuse, and Rehabilitation: A proper and complete termite inspection and appropriate treatment of all property is required.

i) The inspection must be completed by a licensed exterminator who shall report any termite activity located, and treatment applied.

ii) A warranty for a period of a minimum of one year on all treatments is required.

8) Radon Reduction: All KHC funded “New Construction” and “Adaptive Reuse, and Rehabilitation” Units where radon levels are known to be at or above four picocuries per liter of air (4 pCi/l) shall be retrofitted with a venting system complying with KHC’s Radon Testing and Mitigation Policy found at <https://www.kyhousing.org/Partners/Inspections-and-Compliance/Pages/Design-and-Construction.aspx>

a) A passive radon venting system is required to be installed in all KHC-funded new construction and adaptive reuse units to ensure all units are radon mitigation ready. The passive system shall include:

i) The passive system requires the Radon vent pipe to have a perforated collector installed under the poly sub-slab or in the crawl space then extended through the roof.

ii) The radon vent pipe shall pass through a heated portion of the structure and an accessible attic space or chase which will allow adequate working space to possibly install an inline fan. The Radon vent pipe shall not be exposed within the dwelling unit.

iii) Electrical provisions shall be roughed in, in an accessible attic or chase, for possible future installation of an inline fan.

iv) The Radon vent stack shall be labeled in the crawl space/basement and in accessible attics.

9) Energy Efficiency: Documentation and/or calculations that the building envelope meets or exceeds the applicable energy code requirements must be provided from REScheck or other approved software or methodology.

10) Energy Testing:

a) **Testing** for new construction, adaptive reuse, and rehabilitated buildings shall follow applicable IECC and associated codes/standards and must verify compliance with the current American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE 62.1 or

ASHRAE 62.2) Standard for ventilation and acceptable indoor air quality or the current International Mechanical Code (IMC) as adopted by The Kentucky Department of Housing, Buildings and Construction (HBC).

b) All duct leakage tests must use total leakage as the method of testing when the duct system is outside the thermal envelope.

c) New Construction: Compartmentalization blower door testing is the acceptable method of infiltration verification.

Adaptive Reuse, and Rehabilitation: Guarded blower door or compartmentalization blower door testing are the acceptable methods of infiltration verification.

A minimum of ten percent (10%) of the units will be selected by KHC for testing up to a one-hundred (100) unit project and five percent (5%) of all units over the one-hundred (100) units.

d) Diagnostic Testing shall be reported by one (1) of the following methods:

- i) Documentation from a licensed and certified Home Energy Rating System (HERS) rater.
- ii) Documentation from a Building Analyst, Energy Auditor, or Quality Control Inspector certified, by the Building Performance Institute (BPI).
- iii) Documentation from a licensed Heating, Ventilation, and Air Conditioning (HVAC) contractor, qualified in pressure diagnostic testing of the duct systems and total air infiltration.
- iv) Documentation from a Weatherization Assistance Program trained Dwelling Needs Evaluator.
- v) Other methods will be considered upon written request.

11) Quality Assurance: General Contractors and/or subcontractors shall furnish a written material and labor warranty on all units for a period not less than one (1) full year after occupancy.

12) Unit Size Requirements: The following minimum square foot measurements are required for different types of units. For purposes of this requirement, net square feet are the heated and cooled area of the unit.

- a) Single Room Occupancy (SRO) units:** shall contain at least 150 square feet (plus common kitchen and bath)
- b) Efficiency units:** shall contain at least 400 square feet
- c) One-bedroom units:** shall contain at least 600 net square feet

- d) **Two-bedroom units:** shall contain at least 800 net square feet
- e) **Three-bedroom units:** shall contain at least 1,000 net square feet
- f) **Four-bedroom units:** shall contain at least 1,100 net square feet.

13) Modular (Factory Constructed) Homes: Modular builders shall conform to KHC Minimum Design Standards and provide documentation of factory Third Party inspections as well as complete KHC's MDS New Construction Multifamily Housing Units Modular Inspection Checklist. These modules require an interim field inspection after the modules are set in place but prior to covering the connection points of unit sections.

Division 02: Existing Conditions

- 1) **Soil boring and Testing:** All new construction which contains twelve (12) or more units shall be required to have a soils analysis test performed by a Commonwealth of Kentucky approved testing laboratory. (This analysis shall have been performed within the past ten (10 years.) KHC reserves the right to require a soils test on any project regardless of construction type or unit size. Results of the test shall comply with current KBC requirements.
 - a) **Investigation Report:** Results of the test shall comply with the applicable building code requirements and shall be submitted to KHC.
 - i) At a minimum the report submitted to KHC shall contain recommendations for foundation type and design criteria, including but not limited to bearing capacity of natural or compacted soil, provisions to mitigate the effects of expansive soils, mitigation of the effects of liquefaction, differential settlement and varying soil strength, and the effects of adjacent loads.

Division 03: Concrete

- 1) **Exterior Concrete:**
 - a) **All exterior concrete** shall have a minimum twenty-eight (28) day compressive strength of Four-Thousand pounds per square inch (4000 psi) and be entrained with five percent (5%) air.
 - b) **Expansion-joint material** shall be half inch (½") thick asphalt-impregnated pre-molded fiber, American Society for Testing and Materials (ASTM) D1752. Follow American Concrete Institute (ACI) 318.

- c) **Concrete driveways and parking areas** shall be minimum six inches (6") thick.
- d) **Exterior concrete for walks, porches, and stoops** shall be minimum four inches (4") thick.

2) Concrete Finishes:

- a) **Walkways:** Provide a non-slip finish and provide one-quarter inch (1/4") per foot crown or two percent (2%) maximum cross slope in the direction of drainage.

3) Concrete Testing: All new construction containing twelve (12) or more units shall be required to have concrete strength tests performed by a Commonwealth of Kentucky approved testing laboratory for concrete footings, foundations, slabs, dumpster pads, drives, and parking. Results of the tests shall comply with the KBC, KHC Minimum Design (this standard), and be provided to the KHC Construction Specialist assigned to the project.

Division 04: Masonry

- 1) **Brick Veneer:** Shall be ASTM C 216, Type FBS, Grade SW, equivalent or better.
- 2) **Artificial stone or brick:** Shall be installed per manufacturer's instructions.

Division 05: Metals

- 1) **Metal Ties:** For newly constructed units, metal tie-down or "hurricane" straps shall be used at each bearing location of each roof truss, rafter and ceiling joist.
 - a) **Correct nails and nailing pattern** as required by the manufacturing company of the strap shall be used.
 - b) **For modular construction**, equivalent connection systems used in the factory assembly process that provide equal or greater structural integrity may be substituted for traditional hurricane straps if documented in engineering specifications and approved by a licensed structural engineer.
- 2) **Steel Lintels:** When specified for openings in masonry walls, shall be primed and painted, or galvanized.

3) Metal flashing materials shall be corrosion resistant and minimum nominal thickness of nineteen-thousandths inch (0.019”).

a) Corrosion resistant flashing in contact with pressure treated lumber, containing copper, shall not be aluminum material.

Division 06: Woods/Plastics/Rough Carpentry/Millwork

1) Wall Reinforcement:

a) Wall reinforcement for the toilet, tub, and/or shower shall be installed centered thirty-three to thirty-six inches (33” to 36”) above finished floor (AFF) and located behind and alongside these fixtures for bathrooms.

b) Reinforcement materials shall be constructed of nominal two by ten (2” x 10”) wood blocking, plywood, or other approved material capable of supporting installation of grab bars with loading of two-hundred pounds (200 lbs.) applied in any direction.

c) Americans with Disability Act (ADA) compliant reinforced tubs may be used.

2) Wood Exposed to Weathering Elements: All exterior wood exposed to weathering shall consist of naturally durable hardwoods, composite materials suitable for exterior exposure, or pressure treated wood having a minimum preservative retention rate of twenty-five percent (25%) for above ground applications, and a minimum preservative retention rate of forty percent (40%) for all wood in contact with the ground.

3) Wood Decking: Construction of exterior wood decks shall meet current Kentucky Building Code and/or the American Wood Council’s, Prescriptive Residential Wood Deck Construction Guide.

a) All structural posts below grade shall have the factory treated end of the post below grade.

4) Exterior Wood Stairs: Exterior wood stairs shall be constructed with properly treated dimensional lumber.

5) Exterior Guardrails and Handrails: All guardrails and handrails shall be constructed of any combination of treated lumber, approved naturally rot-resistant lumber, vinyl, metal, or composite materials. Materials shall be finished with a factory or field applied coating suitable for effective weather resistance.

Division 07: Thermal and Moisture Protection

1) Minimum masonry siding: Siding material of all newly constructed buildings shall consist of a minimum of fifty percent (50%) brick, stone, fiber cement, or other KHC approved materials. The masonry area calculation of fifty percent (50%) shall not include window and door areas, nor brick below finished grade. Elevation plans shall include calculations documenting the percent coverage of all siding types per building.

2) Weather Protection: All exposed wood shall be protected from weathering by a minimum of one or more of the following materials or methods.

a) Paint: Cover with one coat primer and two coats of exterior enamel.

b) Metal: Nineteen-thousandths inch 0.019" minimum thickness aluminum, manufacturer's finish (coil stock).

c) Naturally Durable Wood: When Redwood, Cedar, or other naturally durable woods may be exposed to weathering conditions without cladding or other protective coverings, stain or sealing exposed wood shall be required.

d) Composites: Cement fiber board or other durable material may be used as approved by KHC.

e) Pressure treated Lumber: All pressure-treated wood shall have a minimum preservative retention rate of twenty-five percent (25%) for above ground applications and a minimum preservative retention rate of forty percent (40%) for all wood in contact with the ground.

3) Roof Covering:

a) Shingles: Seal tab type over manufacturer recommended underlayment or better, with minimum twenty-five (25) year product warranty or better.

b) Metal: Twenty-nine (29) gauge minimum thickness galvalume or galvanized steel with manufacturer's finish installed over solid decking. Roof deck shall be covered with manufacturer recommended underlayment or better.

c) If purlin construction is used, then twenty-six (26) gauge minimum thickness aluminum or galvanized steel shall be used.

d) **Flat roofs:** Shall be completed per code and manufacturer's recommendations.

4) Gutters and Downspouts: All structures shall have gutters and downspouts and be appropriately designed per roof covering manufacturer with a minimum five inch (5") gutter and a minimum two inch by three inch (2"x 3") downspout.

a) All downspouts shall empty onto concrete or composite splash blocks or be piped to an appropriate location.

b) Downspouts shall not discharge directly onto sidewalks or other walking surfaces.

5) Siding: Exterior siding shall consist of one or more of the following materials or other materials approved by KHC.

a) **Composite:** Fiber cement siding, primed, with two-coat minimum finish or manufacturer's finish.

b) **Metal:** 26-gauge (0.0179 inches) minimum thickness aluminum or galvanized steel with manufacturer's finish.

c) **Vinyl:** Forty-two thousandths inch (0.042") minimum thickness, ultraviolet (UV) protected.

d) **Wood:** Cedar, redwood, or approved naturally durable wood stained or primed once with two (2) coat minimum finish.

e) **Artificial stone or brick:** installed to manufacturer's instructions.

6) Foundation Water Management: Exterior surface of foundation walls of basements & crawlspaces shall be finished with damp-proofing coating.

7) Air Infiltration:

a) **New construction structures** shall be air sealed to prevent air exchange between conditioned and unconditioned spaces by the following means.

i) Exposed penetrations of floor, walls, and ceilings, such that occur at access openings, electrical wiring and outlet boxes, plumbing piping, and ducts, shall be sealed to prevent free passage of air between conditioned and unconditioned spaces or the exterior.

- ii) Exposed walls in attics, separating the conditioned space of the dwelling unit from the unconditioned space in the attic, shall have an approved air barrier installed on the attic side of the wall.
 - iii) Access doors from conditioned spaces to unconditioned spaces, such as attics and crawl spaces, shall be weather-stripped and insulated to a level equivalent to the insulation on the surrounding surfaces.
 - iv) Recessed luminaires installed in the building thermal envelope, shall be sealed to limit air leakage between conditioned and unconditioned spaces.
 - v) All recessed luminaires shall be Insulation Contact (IC)-rated and labeled as meeting ASTM E 283, when tested at 1.57 psf (75 Pa) pressure differential; with no more than 2.0 cfm (0.944 L/s) of air movement from the conditioned space to the unconditioned space.
- b) **Rehabilitated** structures shall be air sealed to the extent cavities are exposed.

Division 08: Doors, Windows, and Glazing

- 1) **Exterior Doors:** Exterior Doors shall be a minimum of one and three-quarters inch (1 ¾") thick, made of steel or other equally durable material, insulated unless of solid wood (not particleboard) and be appropriately finished as recommended by the manufacturer.
- a) **Dwelling Unit entry door hardware:** All unit entry doors shall have a lever key-lock latch, doorknocker or wired doorbell, security accessories (eyelet and deadbolt), and kick plate.
- 2) **Interior Doors:** New or replacement doors shall be solid wood, composite, or hollow core panel doors.
- a) **Interior doors** shall be a minimum of one and three-eighths inch (1 ⅜") thick.
 - b) **Interior Hardware:** All interior doors shall be equipped with brass-plated, or other durable metal finished lever handles. (Sliding, bypass, and pocket doors are exempt from the lever handle requirement.).
 - i) **All bedrooms and bathrooms** shall be equipped with privacy locks.

- 3) **Windows:** All new construction and replacement windows shall meet the following requirements:
- a) **All window frames** must be of vinyl, thermally broken aluminum, fiberglass, wood, or wood clad.
 - b) **The vapor seal** on the glazing must have a minimum ten (10) year warranty.
 - c) **The operation** of all windows shall have a minimum one (1) year warranty.

Division 09: Finishes

1) **Exterior Ceiling:** When using vinyl or aluminum material for porch ceilings, provide a rigid, solid backing such as Oriented Strand Board (OSB), plywood, or furring strips per manufacturer's instructions.

2) **Exterior Finishes:** Exterior building elements shall be properly finished.

a) Posts and Columns:

i) **New construction** exterior posts and columns at deck level and above shall be constructed of any combination of treated lumber, approved naturally rot-resistant lumber, vinyl, metal, or composite materials. Materials shall be finished with a factory or field applied coating suitable for effective weather resistance.

ii) **Rehabilitation projects** may repair in kind to the existing construction methods or replace as to meet current building codes.

b) Guardrails:

i) **New Construction:** All guardrails and handrails shall be constructed of any combination of treated lumber, approved naturally rot-resistant lumber, vinyl, metal, or composite materials. Materials shall be finished with a factory or field applied coating suitable for effective weather resistance.

ii) **Rehabilitation projects** may repair in kind to the existing construction methods or replace as to meet current building codes.

c) **Fiber Cement Siding:** Shall be factory finished or be painted with at least two coats of exterior grade paint.

3) Entry Door Floor Finish: On the interior side of the main entry door within each dwelling unit, there shall be an uncarpeted, finished floor area.

a) This area shall be no less than a minimum of five foot (5') x five foot (5').

4) Finished Floor Treatments: New construction or replacement interior floor finishes shall meet one or more of the following standards:

a) Sheet Carpet: Twenty five ounce (25 oz.) minimum, one hundred percent (100%) nylon. Other options include Berber type with blended fiber. In high traffic areas, thirty ounce (30 oz.) minimum is required.

b) Carpet Padding: Minimum seven-sixteenths inch (7/16") thick, six pound (6-lb.) re-bond polyurethane.

c) Sheet Vinyl: Shall be minimum 10 mil (0.010 inches) wear layer.

i) Provide product adhesive and underlayment as recommended by the manufacturer.

ii) All sub surfaces shall be clean, dry, and appropriate temperature during installation.

iii) Vinyl sheet flooring shall conform to the requirements of ASTM F 1303, Type I.

d) Vinyl Tile: Shall be Vinyl Composition Tile or other approved equal, 1/8" x 12" x 12".

i) Provide product adhesive and underlayment as recommended by the manufacturer.

ii) All sub surfaces shall be clean, dry, and appropriate temperature during installation.

iii) Follow manufacture's recommendation for pattern layout.

e) Wood Flooring: Flooring shall be tongue and groove hardwood, factory finish or have a minimum of three coats site-applied, UV protective polyurethane.

f) Other Flooring Products: Ceramic tile, laminates, Carpet tiles, and other approved products shall be installed in accordance with manufacturer's specifications.

5) Interior Doors: New construction or replacement interior doors shall be factory finished, painted, or stained as follows:

a) Paint: Primed once, with two-coat satin, or semi-gloss finish on all sides and faces including tops and bottoms.

b) Stain: Stain or oil on all sides and faces including tops and bottoms, with three- coat varnish, polyurethane finish

- c) **Moisture-Resistant Drywall:** For new construction and areas where drywall is replaced during rehabilitation, Moisture-resistant gypsum board (commonly called “green board”) or equivalent shall be used on all walls in the bathroom and within six feet in any direction of water sources, such as kitchen sink, icemaker line, next to water heater, and/or clothes washer.
- d) **For new construction,** Water-resistant gypsum board or equivalent shall be provided behind any tub/shower unit located on an exterior wall.
- e) Water-resistant gypsum, when used on ceilings must be rated for the span.

6) Interior Wall Finishes:

- a) Dwelling units, common areas, offices, laundries, meeting rooms, storage areas, and similar spaces intended for use by the residents shall have the interior wall surfaces properly finished with appropriate materials such as drywall or plaster.
 - i) Exposed framing and insulation are not considered a proper finish in these spaces.
- b) Unless factory finished, all interior walls shall be covered with one prime coat and two coats Low Volatile Organic Compounds (VOC) interior latex finish paint.

Division 10: Specialties

- 1) **Bath Accessories:** Dwelling unit bathrooms shall be equipped with the following:
 - a) A mirror twenty inches (20”) wide by thirty inches (30”) tall (minimum)
 - b) Wall hung toilet paper dispenser.
 - c) Towel Bar: Eighteen inches (18”) minimum length.
 - d) Shower rod.

- 2) **Trash Collection:** Provisions for dumpsters or trash cans are required.
 - a) Screening of trash cans and/or dumpsters shall be provided. Gates are optional.

- 3) **Common Laundry Facilities:** Unless individual units are supplied with laundry hookups, all projects including rehabilitation projects consisting of four (4) or more units shall provide common laundry facilities meeting the following washers and dryers per unit ratios.
- a) SRO, efficiency, and one (1)-bedroom, units must have a minimum of one (1) set (washer/dryer) for every twenty (20) units.
 - b) Two (2)- and three (3)-bedroom units must have a minimum of one (1) set (washer/dryer) for every twelve (12) units.
 - c) All calculations must be rounded up to a whole number.
- 4) **Dwelling Unit Laundry Connection Facilities:** All newly constructed dwelling units including adaptive reuse shall be equipped with washer and dryer **hookups**.
- a. Exposed dryer ducting is prohibited.
 - b. **EXCEPTION:** SROs and efficiencies are not required to provide this hook up within the dwelling unit.
- 5) **Roof Offsets:** Projects of four (4) or more attached units shall incorporate varying the roof line with offsets, gable porch roofs, etc.
- 6) **Entries:** The main common entry to each group of newly constructed dwellings or each main exterior entry to individual dwellings shall have concrete, treated wood, or other hard surface exterior stoop, porch or deck, a minimum of five foot (5') x five foot (5').
- a) **All main entries** shall have a roof or awning over the minimum five foot (5') x five foot (5') entry area.

Division 11: Equipment

- 1) **Refrigerator:** A refrigerator shall be provided in all dwelling units.
 - a) All new and replacement refrigerators must be Energy Star qualified or approved equal. The Energy Star mark must be clearly marked on the product, clearly displayed in product literature, or listed on the manufacturer's Internet site.

- 2) **Range:** A range shall be provided in all dwelling units.

- 3) **Dishwasher:** A dishwasher shall be provided in all newly constructed units and those resulting from adaptive reuse. Dishwashers shall also be provided in units resulting from rehabilitation activities where they had either previously existed or if dwelling units were newly created due to structural change.
 - a) A dishwasher, if provided, shall be Energy Star qualified or approved equal.
 - b) **EXCEPTION:** No dishwasher is required if the unit is an efficiency or only one-bedroom.

- 4) **Clothes Washers:**
 - a) **All clothes washers** provided in individual dwelling units shall be Energy Star qualified or approved equal.
 - b) **Washers and dryers** provided in accessible units must meet accessible requirements. Equipment provided in common laundry rooms must meet ADA requirements.
 - c) **All laundry facilities** located above any habitable space shall be equipped with a properly installed washer overflow pan piped to carry the overflow into the drain/waste/vent (DWV), positive outside drain, or an approved floor drain.

Division 12: Furnishings

- 1) **New Construction and Replacement Cabinets and Drawers:** Base and wall cabinets shall be provided in all dwelling units.
 - a) **Cabinet fronts** shall be made of solid wood (not particleboard); doors, drawers, and fronts shall be factory finished and shall perform to current American National Standards Institute (ANSI) A161.1 standard.

- b) Cabinet ends** shall be finished with appropriate veneer.
- c) Cabinet doors and drawers** shall incorporate milled edges for a hand hold or handles to aid in operating the door or drawer. Accessible pulls or handles are required in all accessible units.
- d) All cabinets** shall be tested for compliance and certified as complying with ANSI A161.1 standards. Each sink base and vanity base shall be marked with:
- i)** The manufacturer's name or registered trademark.
 - ii)** The certifying entity's certification mark.
 - iii) EXCEPTION:** Cabinets made in Kentucky do not require an ANSI/KCMA A161.1 label when pre-approved by KHC.
 - (1) All cabinet fronts, doors, and drawer fronts shall be solid wood.
 - (2) All cabinets shall have backs, bottoms, and sides when exposed.
 - **EXCEPTIONS:**
 - Cabinets to house ovens and refrigerators are not required to have backs.
 - Cabinets to house ovens or refrigerators and cabinets with only drawers are not required to have bottoms.
 - (3) All cabinets shall be provided with a minimum toe kick three inches (3") high and two inches (2") deep.
 - (4) Cabinet corners shall have interior bracing to provide rigidity.
 - (5) Cabinet doors and drawers shall be properly aligned with cabinet front.
 - (6) Cabinet hardware shall function without excessive binding or looseness and installed per manufacturer's instructions. All hardware except stops, rollers, and bearings shall be solid metal construction.
 - (7) Cabinet doors and drawers shall incorporate milled edges for a hand hold or pulls or handles to aid in operating the door or drawer. Accessible pulls and handles are required in all accessible units.
- e)** Cabinet boxes for vanities, sink bases or other wet area cabinet bases shall be constructed of cabinet grade plywood and braced at points where necessary to ensure rigidity and proper joining of various components.
- f)** All hardware shall perform to ANSI/BHMA A156.9 standard.

- 2) Countertops:** Laminate countertops shall be molded with a minimum four inch (4") integrated splash where feasible, with finished ends and moisture sealed at the cut out for sink and above dishwasher area if applicable.
- a) Other appropriate materials** may be used such as solid surface, quartz, ceramic, recycled glass, or similar as approved by consulting with the KHC Department of Design and Construction Review.
- 3) Closet Storage/Accessories:** Clothes closets shall contain a twelve inch (12") deep shelf, including a coat rod. Shelves with integrated hangar hooks may also be used.
- 4) Mailboxes:** All units shall have a United States Postal Service (USPS) approved mailbox either at each individual unit or in a common area.

Division 13: Special Construction

- 1) Storage areas:** Storage areas are required on all newly constructed units and adaptive reuse projects, excluding SROs and efficiency units.
- a)** The storage area shall be a minimum of twenty-five (25) net square feet of floor space.
- b)** Structures must satisfy applicable building code requirements.
- c)** Shall provide a three foot by six foot, eight inch (3' x 6'8") access door.
- d)** Storage area within the dwelling unit shall be a designated room or space and cannot encroach on clear space requirements for any equipment or appliance.
- e)** Exterior storage areas shall match exterior building veneer, trim, and possess identical roofing.
- i)** Exterior storage units must be lockable.
- ii)** Exterior storage may be located at separate areas away from occupied dwelling units.
- iii)** Lockable Storage cages within the building are acceptable.
- f)** Prefabricated plastic structures are prohibited.

2) Ramps: All newly constructed residential ramps shall meet the following specifications:

- a) Ramps shall be constructed a minimum of forty-two inches (42") wide. Handrails and guardrails may encroach up to four and one-half inches (4-1/2") either side on the required width.
- b) Ramps with a rise greater than six inches (6") shall have a handrail on both sides of ramp.
- c) Each landing shall have five foot (5') turning areas at change of direction.
- d) Ramps shall not exceed a maximum slope of 1:12 and a maximum rise of thirty inches (30").
- e) Ramps and landings shall have a minimum load capacity of three hundred pounds (300 lbs.) concentrated load applied in a four (4) square inch area and a uniform live load of one-hundred pounds (100 lbs.) per square foot.
- f) Ramps may be constructed of the following materials:
 - i) Composite: Polyvinyl Chloride (PVC) or other with non-skid surface.
 - ii) Concrete: with non-skid surface.
 - iii) Metal: galvanized steel, or aluminum with non-skid surface.
 - iv) Wood: All exposed exterior structural wood shall meet the finish requirements of Division 6. Use of chromated-copper-arsenate (CCA) treated lumber is prohibited.
 - v) Posts, guard and handrails shall meet the finish requirements of Division 6.
- g) **Portable or temporary ramps** are prohibited and may not substitute for locations requiring a permanent ramp

2) Playgrounds: Playgrounds, if provided, shall meet the following current standards and be approved by KHC prior to installation.

- a) ASTM F1487, Standard Consumer Safety Performance Specification for Playground Equipment for Public Use
- b) ASTM F1292, Standard Specification for Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment
- c) ASTM F1951, Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment
- d) ASTM F2223, Standard Guide for ASTM Standards on Playground Surfacing
- e) ASTM F2479, Standard Guide for Specification, Purchase, Installation and Maintenance of Poured-in-Place Playground Surfacing

- f) ASTM F2049, Standard Guide for Fences/Barriers for Public, Commercial, and Multi-Family Residential Use Outdoor Play Areas
- g) ASTM F2075, Standard Specification for Engineered Wood Fiber for Use as a Playground Safety Surface Under and Around Playground Equipment
- h) DOJ 2010 ADA Standard for Accessible Design

Division 22: Plumbing

1) Required Fixtures: Fixtures must be provided in all dwelling units. The following specifications shall be the minimum size and/or quality for plumbing fixtures.

- a) Bathtub:** Tubs shall be sixty inches by thirty inches (60" x 30") minimum; made of fiberglass, acrylic, porcelain, or approved equal.
- b) Shower:** Showers shall be thirty-six inches by thirty-six inches (36" x 36") minimum or sixty inches by thirty inches (60" x 30") minimum; made of fiberglass, acrylic, ceramic, or cultured marble.
- c) Water Closets:** Water closets shall be maximum one and twenty-eight hundredths' Gallons Per Flush (1.28 GPF) and made of porcelain.
- d) Faucets:** Single-lever faucets or ADA-compliant faucets shall be installed at all sinks, showers and tubs. Faucets containing plastic material for exterior housing are prohibited.
- e) Lavatories:** Sinks shall be fifteen inches (15") minimum diameter.
- f) Kitchen Sink:** When no dishwasher is provided with the unit, sinks shall be a minimum eight inches (8") deep, stainless steel double bowl. Otherwise, the kitchen sink specifications may be market driven.
 - i) EXCEPTION:** Roll under sinks required in mobility impaired dwelling units shall meet accessibility requirements.

2) Water Supply Piping: Water Supply Lines shall be of approved material.

- a) Installation in exterior walls or ceilings (except for hose bibs) is prohibited.**
 - i) Where necessary to install water supply lines on an outside wall the lines may be stubbed up from the floor near the wall or other required location in the floor to serve the fixture.**
- b) All new construction and replacement hot water lines shall be insulated equal to or greater than R-3.**

3) Overflow Protection Accessories: New and replacement water heaters located above any habitable space shall have an overflow pan properly plumbed into DWV, positive drain to exterior, or an approved floor drain.

4) Water Heater Efficiency for dwelling units:

- a) **New construction electric water heaters** shall have a minimum Energy Factor (EF) rating of 0.95 or Uniform Energy Factor (UEF) rating of 0.92.
- b) **Rehabilitation replacement water heaters** shall be the maximum efficiency attainable if space limitations restrict larger water heater insulation jackets.
- c) **Gas fired water heaters** shall have an EF equal to or greater than 0.67.
- d) **Instantaneous gas water heaters** shall have an EF equal to or greater than 0.82.

Division 23: Heating Ventilating and Air Conditioning

1) Heating Ventilating and Air Conditioning Equipment: All units shall be heated and cooled using high-efficiency equipment.

- a) **Heat pump systems** shall have a minimum Seasonal Energy Efficiency Rating (SEER2) rating of 14.3 with a minimum Heating Seasonal Performance Factor (HSPF2) rating of 7.7.
- b) **Fuel oil, gas fired furnaces and boilers** shall have an Annual Fuel Utilization Efficiency (AFUE) equal to or greater than ninety-five percent (95%).
- c) **Central Air Conditioning** systems shall have a minimum SEER2 rating of 15.2
- d) **Electric-resistance-only** heat systems are prohibited.
- e) **Packaged Terminal Heat Pump (PTHP)** units shall have a minimum eleven Energy Efficiency Ratio (11 EER) rating and a minimum of three Coefficient of Performance (3.0 COP) rating.
- f) **Vertical Terminal Air Conditioner Heat Pump (VTAC)** units shall have a minimum eleven Energy Efficiency Ratio (11 EER) rating and a minimum of three Coefficient of Performance (3.0 COP) rating.
- g) Alternative HVAC systems may be considered for approval by KHC.

2) Duct Insulation: All supply air, return air, and exhaust air ducts installed in unconditioned spaces shall be sealed and insulated with a minimum R-8 insulation wrap and installed free of restrictions.

- 3) Programmable Thermostats:** All new and replacement individual HVAC systems shall be controlled by a programmable thermostat.
- 4) Range Hoods:** All dwelling units shall be equipped with an Energy Star qualified or approved equal, minimum one-hundred-fifty cubic feet per minute (150 CFM) range hood or combination range hood/microwave oven non-vented or vented to the exterior.
- a) Use ducting sized and ducting material per manufacturer recommendation.
 - b) Exposed ducting is prohibited and when installed above cabinets, ducts shall have a finished cover.
 - c) Recirculation hoods shall be equipped with an activated charcoal filter.
 - i) Note: Recirculating hood ventilation rates must be made up with whole unit ventilation. See ASHRAE / IMC standards.
- 5) Exhaust and Ceiling Paddle Fans:** All ventilation and paddle fans shall be Energy Star qualified or approved equal.

Division 26: Electrical

- 1) Common Area Lighting:** Luminaries shall be located at all entrances and common areas.
- a) The electrical supply for all common areas, stairways, and walkways shall not originate from an individual unit.
- 2) Parking Lot Lighting:** All onsite parking areas shall be lighted.
- a) The electrical supply for all parking areas shall not originate from an individual unit.
- 3) Dwelling Unit Lighting:** Each room, hall, stair, walk in closet, and storage room shall have a minimum of one (1) switch-operated overhead light.
- a) Kitchens shall include adequate switch-operated lighting over the cooking area, sink and the general or dining area.
 - b) Bathrooms shall be equipped with switch-operated lighting over the lavatory area and the general area.

Division 27: Communications

- 1) **Help/Call for Aid:** Where installed, or included in the scope of work, Help/ Call for Aid systems shall at a minimum, alert persons outside the dwelling unit by visual and/or audible means.
 - a) Audible systems shall produce sound at a level of at least fifteen (15) decibels above ambient noise levels near the dwelling unit.
 - i) The notification sound shall **not** be similar to a fire alarm notification.
 - b) Visual notification systems shall be a flashing strobe a flashing strobe and visible to persons within two-hundred (200) feet from the dwelling.
 - c) An activation device shall be installed in all bedrooms, bathrooms, and living rooms of the dwelling unit.

- 2) **Units designed for the hearing and visually impaired** shall be equipped with audible and visual notification devices for the benefit of the occupant to know when someone is at the entry door, and when there is smoke (or carbon monoxide, if applicable) detected within the dwelling or building.

Division 28: Electronic Safety and Security

- 1) **Fire Detection and Alarm:** Installation of smoke alarms is required in all new construction, adaptive reuse, and rehabilitation projects.
 - a) All local ordinances shall be observed.
 - b) Written manufacturer specifications for the proper installation of individual alarms shall be observed and maintained on site throughout construction.
 - i) Instructions for specific locations and other installation details shall be strictly observed.
 - ii) Individual smoke alarms shall be installed on all floors and in all bedrooms and hallways no more than eight (8) feet from any bedroom door within the dwelling unit.

- 2) **Carbon Monoxide Alarms:** Underwriters Laboratories (UL) listed carbon monoxide alarm(s) shall be installed outside each sleeping area no more than eight (8) feet from any bedroom door within the dwelling unit if the unit / building contains fuel burning appliances or has an attached garage. A combination Hardwired Smoke & Carbon Monoxide Detector with ten (10) year Battery Backup may be used.

3) Audible and Visual notification alarms: Where required, dwellings shall provide audible and visual notification of smoke and carbon monoxide detection in all rooms within the dwelling.

a) Audible alarms shall provide minimum noise pressure fifteen (15) decibels above ambient noise levels in all rooms of the dwelling including bathrooms and kitchens and where a room may be isolated by closure of a door.

b) Visual alarms shall be installed in locations where the alarm's flashing strobe may be seen from any location within the dwelling including bathrooms and kitchens and where a room may be isolated by closure of a door.

Division 32: Exterior Improvements

1) Landscaping: Adequate landscaping is required on all multifamily projects.

a) Installation: Landscaping shall be installed according to the approved landscape plan submitted to KHC as part of final plans and specifications.

b) Turf:

i) All side and rear lawn areas shall have sod or shall be seeded with the seed variety, lime, and fertilizer, and covered with straw or straw-blanket, which is appropriate for soil conditions to establish a good lawn cover.

ii) Sod (or established lawn at time of final inspection) is required in building front yards and common areas for all projects requiring establishment of new grass.

iii) All slopes in excess of 33.3% (1:3) within ten (10) feet of the building, driveway, and/or walkway shall receive sod or other approved erosion control materials which will enhance the establishment of a permanent ground cover.

2) Parking/Driveways: All multifamily projects shall have adequate parking as determined by local jurisdiction or market driven when not specified by a local jurisdiction.

a) All on-site parking lots and access drives shall be paved.

b) Asphalt parking/driveways: Asphalt shall consist of a hot mix asphaltic concrete pavement, manufactured by plants and be placed a minimum of two inch (2") thick over a compacted four inch (4") crushed stone base.

c) Concrete parking lots and access drives shall be six inches (6") thick.

- d) **Pervious concrete parking surfaces** shall be properly drained to prevent accumulation of water.
- e) **Parking spaces** shall have wheel stops or curbs
- f) If walkways are used as wheel stops, the walkway shall be a minimum of six feet (6') wide.

3) Walkways: All dwelling units and common use facilities shall have a paved walkway from the parking area to the main entrance and connecting dwelling units to common use areas and public sidewalks.

- a) All public walks shall be a minimum of forty-two inches (42") wide.

Division 33: Utilities Services

1) Availability: Required building utility services shall be available before construction begins at the building site in sufficient size to adequately provide sufficient power, flow, volume, pressure, and drainage during and after construction to allow for safe, dependable service of construction equipment, appliances, and fixtures.

- a) **Septic or sewage treatment systems** may be constructed onsite as construction progresses and shall be capable of performing intended functions prior to occupancy.

- b) **Provide temporary onsite sanitary facilities during construction.**

2) Electric: Electrical service to newly constructed units shall be installed underground except in cases when deemed structurally infeasible.