

2016

HOUSING REHABILITATION MATERIAL APPLICATION STANDARDS

IMPORTANT

Please read material, application and performance standards carefully.

Contractor will obtain and pay for all necessary licenses, permits and privileges required in his work, and perform all work in strict accordance with the laws and ordinances in force in the State of Kansas, and in the locality in which this work is to be performed. Contractor will investigate what Federal, State or Municipal laws and requirements are applicable and comply with all in an approved manner.

Lead Safe Work Practices will be implemented on all homes built prior to 1978 that receive CDBG Housing Rehabilitation funds.

SHOULD THERE BE ANY CONFLICTS BETWEEN THESE SPECIFICATIONS AND THE WORK WRITE-UP, THE PROJECT INSPECTOR SHOULD BE CONTACTED FOR A FINAL DETERMINATION.

CARPENTRY SPECIFICATIONS

A. Concrete Work

1. The concrete mix shall be 3,000 pounds transit mix or with a 5 1/2 sack mix for both interior and exposed concrete.
2. No concrete shall be poured on frozen ground.
3. All concrete flat work must be over a 2" layer of gravel/sand on compacted earth and be reinforced properly.
4. All flat work concrete must be a minimum of 4" thick with 1/2" pre-molded asphalt or non-bituminous fiber-filled material expansion joints at entrance platforms, steps, intersections with driveways or walks, and in long runs at least every 50'.
5. Control joints must be provided at no more than 5' intervals for sidewalks and 20' intervals for floors, concrete drives, and parking slabs.
6. Footings must be below the freeze line, 8" thick, and reinforced properly with rebar.
7. Foundation walls must be 8" wide and reinforced properly with rebar.

CONTRACTOR MUST CALL FOR A SITE INSPECTION AFTER SITE IS READY FOR CONCRETE AND 24 HOURS PRIOR TO POURING. AFTER 24 HOURS HAS ELAPSED CONTRACTOR MAY PROCEED. NOTIFY THE PROJECT INSPECTOR.

B. Masonry Work

1. No masonry work shall be done when the temperature of the surrounding air is likely to cause freezing.
2. All joints must be completely filled with mortar.
3. All brick, stone, or block used should match, if possible, adjacent work. The owner(s) must approve samples before starting the work, unless the work is to be painted or covered.
4. Soft salmon type brick shall not be allowed.
5. Tuck-pointing shall only be done after the joints have been raked out to a minimum depth of 1/2" and wetted.
6. All damaged, loose, or salmon brick, in area to be rebuilt, must be removed until sound brickwork is encountered.
7. New brick patches must be toothed into and match in the existing work in site, joints, and bond.
8. Veneer brickwork must be tied to frame wall with galvanized wall ties on every third course, 32" on center, and shall conform to above specifications.
9. All new retaining walls over 24" high must have #4 steel dowels placed every 2' and be imbedded at least 6" into the footings.
10. Retaining wall footings shall be three times the thickness of the wall in width and 8" deep, containing three (3) #4 steel rebar.
11. All retaining walls over 24" high shall have weep holes at grade level at 8' intervals.
12. All block replacement foundation walls shall have a galvanized steel bed reinforcement (8" mesh) in 2nd course and 5th course of block. Concrete block or poured wall may be used for all foundation walls.

C. Grade

Shall mean backfill along foundation with topsoil and provide sufficient slope in finish grade to provide drainage away from house.

D. Framing Lumber

1. Must be No. 3 Southern Pine, SB, SPF, standard grade, or better.
2. Studs must be Stud Grade.
3. Allowable spans for floor, roof, and ceiling joists no greater than 24" centers.
4. Bearing partition stud walls may not be less than 2" x 4" studs with dimension perpendicular to the wall, 16" on center.
5. Floor joist spacing may be no more than 16" on center when 25/32" flooring is to be applied directly to the joist; or, 16" on center when any lesser thickness of finish flooring is to be laid over a sub-floor.
6. Gutting of structural members shall not be done without the approval of the Project Inspector.

E. Sub-Flooring

1. Plywood shall be Southern Yellow Pine (SYP), 1/2" minimum where 25/32" finished flooring is to be laid or 5/8" where resilient flooring is to be laid and joists are not over 16" on center.
2. Nail plywood sub-floor to joint at each bearing with No.8 cemented or galvanized, or No. 6 threaded nails spaced 6" on center along all edges, and 10" on center along intermediate members.
3. Install plywood with outer piles at right angles to the joists and staggered so that the end joists in adjacent panels bear on different joists.
4. Common boards used as sub-flooring shall not be over 11" wide or less than 3/4" thick when laid on joist spaced 10" on center, and shall be laid diagonally if hard wood flooring is laid.
5. Nail boards with No. 8 box nails or No. 6b threaded nails, as follows:
 - a. Two (2) nails in 3" boards.
 - b. Two (2) nails in 4" boards.
 - c. Three (3) nails in 6" boards.
 - d. Four (4) nails in 8" boards.
 - e. Five (5) nails in 12" boards.

F. Underlayment

1. Shall be 3/8" structural grade plywood or 1/4" underlayment.
2. Nail underlayment with cement coated, rosin coated, or ring shank nails placed on 4" centers on all edges and over the face of each piece.
3. Cement Board in high moisture area installed using Manufacturer Specifications

G. Finish Flooring

1. Strip Wood Flooring
 - a. Material must be softwood with 25/32" minimum thickness.

- b. Shall be 3 1/4" maximum width.
 - c. Nails shall be as recommended by flooring manufacturer. Blind nail tongue and groove flooring, driving nail at an approximate angle of 50 degrees. Space nails every 10" to 12" on center.
- 2. Sheet Vinyl Flooring:
 - a. Minimum 0.065" gauge overall thickness.
 - b. Shall be 0.025" gauge wear layer, 10' wide rolls.
 - c. The owner(s) shall be shown at least three (3) samples to select from a quality that will cost no more than \$20 per yard including installation.
 - d. Mastic shall be as recommended by flooring manufacturer. (No gluing only along the edges will be allowed).
 - e. All joints and cracks in base shall be filled, smoothed, and leveled.
 - f. Where irregular floor conditions exist, install underlayment to receive vinyl flooring.
 - g. Layout to minimize joints in vinyl flooring. Small strips or patching will not be allowed.
 - h. Owner(s) shall sign color sample.
- 3. Carpeting and Padding:
 - a. The owner(s) will select from at least three (3) carpet samples.
 - b. Based on a specified allowance, not to exceed more than \$20 per yard including installation.
 - c. Owner(s) shall sign color sample.
 - d. Where irregular floor conditions exist, install underlayment to receive carpet.
 - e. Carpet shall be stain and soil resistant treated, FHA approved, and installed in strict accordance with manufacturer's specifications.
 - f. Padding shall be, FHA approved, and installed according to manufacturer's specifications.

CARPET WILL NOT BE ALLOWED IN BATHROOMS, KITCHENS, AND UTILITY ROOMS.

H. Finish Lumber

- 1. Shall be free from tool marks and other objectionable defects.
- 2. *Solid lumber and miscellaneous trim for interior finish shall be vinyl or solid stock white pine, if stained. Finger joints, allowed if painted.*
- 3. All exterior solid lumber and trim shall be sealed against the weather. Exterior porches and all wood meeting the ground shall be treated lumber.
- 4. Porches shall have a top, intermediate, and bottom railing.

I. Exterior Doors

- 1. Doors:
 - a. Shall be new, wood flush, particle core, exterior grade, and standard entrance doors with window light. A pre-hung foam filled insulated steel door is preferred.
 - b. Shall conform to the thickness of the doorjamb and be hung on three (3) 3 1/2 x 3 1/2" butt hinges, flush mounted.
 - c. Shall have a glass window or peep hole (client to decide). If window is desired must be a minimum Low-E Argon gas filled, with a u-value of 0.32 or better as rated by NFRC, or approved equal.

- d. Replacement shall include weather stripping, installation of door sweeps, locksets, and hinges.
 - e. After installation, doors are to be neat in appearance and operate smoothly to insure an airtight seal.
 - f. Replacement doors are to be finished as per painting specifications.
2. Weather Stripping:
- a. All existing weather-stripping (W/S) is to be removed prior to the installation.
 - b. W/S shall be installed on both sides and top of doorjamb and shall be Q-lon (Vinyl clad foam) with aluminum back or equivalent.
 - c. The doorstop shall be caulked as needed to complete the airtight seal.
 - d. Adjust door as necessary to insure airtight seal with the W/S.
 - e. The installation is to be airtight, neat in appearance, without buckling or gaps, and installed in such a manner that it is considered permanent.
3. Sweeps:
- a. Sweeps are to be a metal strip with a vinyl or neoprene insert installed according to the manufacturer's instructions.
 - b. Install on the inside of doors that open inward or on the exterior of doors that open outward, so as not to interfere with the smooth operation of the door.
 - c. Must be installed with mounting screws no further than two inches (2") from each end.
 - d. Bottom edge of the sweep is to touch the threshold for proper seal.
4. Locksets:
- a. Locksets to be installed on exterior doors must be of a keyed type.
 - b. Install according to manufacturer's specifications.
 - c. Two (2) working keys are to be supplied to the client when the new lockset is installed.
5. Thresholds:
- a. Shall saddle try type with door bottom.
 - b. Are to fit snugly between the jambs and fasten with screws, and form an airtight seal between door and threshold.
6. Garage Door:
- a. Must be a 25 gauge galvanized Door.
 - b. Must be insulated Door.
- J. Storm Doors
- 1. Shall mean aluminum clad, solid core construction with baked-on finish, self-storing design to contain two glass panels and one, full-size screen panel. Similar in quality to the Cole Sewell "Solid Saver" Model 530.
 - 2. Shall have closures and hardware including stop springs.
 - 3. Adjust for proper tension and operation.
 - 4. Shall have corner bracing for additional support.

K. Windows

1. Frames, sill, sash, trim, and hardware shall match existing work in design and dimension unless otherwise specified in the work write-up.
2. New windows shall be vinyl-wrapped single-hung Low-E Argon gas filled, with a u-value of 0.32 or better as rated by NFRC, or approved equal.
3. Positive locking devices ("cam action" sash locks) shall be provided on all windows, which are accessible from the exterior, and all existing interior finish hardware shall be made operative or replaced.
4. Finish per painting specifications.
5. Glass and Glazing (for glass replacement).
 - a. Windows shall be glazed or re-glazed, where required, with single strength clear grade B glass.
 - b. Window glazing shall be oil base and contain no asbestos or lead.
6. Putty shall consist of pure linseed oil, pure whiting, natural color, or standard commercial grade putty.
7. Prime all wood sashes before the placing of putty.
8. Glass shall be bedded in putty and secured in place with glazier points and face puttied. All excess putty shall be removed and all glass left clean.

L. Storm Windows

1. Are to be standard aluminum frames, self-storing, with removable sash and screen section similar in quality to the Columbia Series 400.
2. Adjust for proper tension and operation.
3. Shall have corner bracing for additional support.

M. Stucco

1. Mortar for all applications shall consist of one (1) part Portland cement to not less than three (3) or more than five (5) parts of damp loose aggregate by volume. Hydrate lime may be used but shall not exceed 10 percent by weight or more than 25 percent by volume of the cement used.
2. The temperature of the surrounding air shall not be less than 40 degrees F. during application and for at least 48 hours thereafter.
3. Surfaces to receive stucco shall be covered with 3.40 pounds per square yard metal lath lapped at end and sides a minimum of 1", and nailed 10" on center vertically and 6" on center horizontally.
4. Apply a minimum of two (2) or three (3) coats. The final coat shall not be applied sooner than seven (7) days after the preceding coat. Before applying the final coat, the surface shall be dampened evenly to obtain uniform suction.
5. Apply two (2) coats on masonry to a minimum thickness of 5/8".
6. Apply three (3) coats over wood surfaces to a minimum thickness of 7/8".
7. Prior to stucco being painted, it shall be washed down with 5 percent muriatic acid solution and rinsed clean with clear water.

8. Patching of stucco, when called for in the Work Write-Up, shall include the removal of all loose material encountered until sound construction is reached, including the removal of rotted or deteriorated lath.

N. Plastering

1. Gypsum plaster materials shall be standard commercial brands.
2. Mixing and application of gypsum plasters shall be in accordance with American Standard Specifications for Gypsum Plastering.
3. Apply plaster in three (3) coats and in two (2) coats double up work-minimum thickness 1/2".
4. Gypsum lath shall be applied with long dimension across supports and with end joints staggered.
5. Nail gypsum lath with 12 or 13 gauge lathing nails having approximately 3/8" heads spaced not more than 4" on center with a minimum of four (4) nails in each lath. Use six (6) nails for 24" wide lath. Length of nail shall be that which shall provide at least 1" penetration in horizontal supports and 3/4" penetration in vertical supports.
6. Gypsum lath shall not be used as a base for Portland cement plaster.
7. Wood lath shall be securely nailed and wetted down prior to applying plaster.
8. Metal lath shall be applied according to manufacturer's directions whether used for patching or new work.
9. Patching of plaster, when called for in the Work Write-Up, shall include the removal of all loose material encountered until sound construction is reached, including the removal of rotted or deteriorated lath. Crack repair in plaster walls shall be cut out to a depth of not less than 1/4" and a width of 1/4". All areas are to be wetted thoroughly before applying plaster filler.

O. Wallboard (Screws are the preferred method)

1. Shall be tape joint gypsum board, carefully fitted and sized prior to nailing in place. Minimum thickness is to be 1/2".
2. Water resistant gypsum board is to be installed on bathroom walls, or any high moisture area.
3. All joints are to be staggered.
4. Nails or sheetrock screws shall be driven with their shanks perpendicular to the face of the board and seated below the surface of the board without breaking the paper, in accordance with the following:

<u>Thickness</u>	<u>Ceiling</u>	<u>Side Walls</u>	<u>Type of Nail</u>
1/2"	5" O.C.	7" O.C.	No. 4 glue coated
5/8"	6" O.C.	7" O.C.	1-7/8 6d cement coated

5. Perforated Tape Mix:
 - a. Shall comply with the recommendation of the manufacturer. A minimum temperature of 55 degrees F. shall be maintained in the room where the work is done until the cement is completely dry. Follow manufacturer's directions for application.

- b. Over joints, the tape shall be embedded in cement and covered with a thin layer of cement. A second and third coat shall be applied. Each coat shall be dry before applying the next coat. Each coat shall be feather-edged and extended beyond the previous coat, approximately 2". The finish coat shall be sanded lightly and imperfections filled in prior to any painting or decorating.
 - c. Check to see that all nails have been driven so that their heads are below the surface without breaking the paper. Cover nails with three (3) applications of cement, allowing time to dry between each coat painted or other decoration.
 - d. The final coat shall be sanded lightly before application of inside corners and shall be reinforced with tape imbedded in cement and finished the same as b. over joints.
 - e. Outside wood molding, metal molding, or metal corner reinforcement shall protect corners. Metal corner re-enforcement shall be finished with two (2) coats of cement, as specified.
 - f. Provide metal edge trim where wallboard edge abuts dissimilar material.
6. Finish to match existing texture.

P. Ceilings

- 1. Acoustical tile or 2' x 4' drop grid ceilings may be used.
- 2. Furring strips, when called for, shall be a minimum of 3/4" x 2" and attached with #8 nails driven through to ceiling joists at 10" intervals.
- 3. Suspended Ceilings
 - a. Exposed T-Bar, as specified, installed in strict accordance with manufacturer's recommendations.
 - b. Unexposed T-Bar, as specified, installed in strict accordance with manufacturer's recommendations.
- 5. Plaster/Drywall
 - a. Use a heavy textured spray finish, when required, to repair cracked plaster and/or cracks in ceiling board.

Q. Siding Repairs/Replacement

- 1. Repairs of siding shall match material of existing siding.
- 2. Installation of siding shall be 12" lap hard board and/or Smart Siding, unless otherwise noted on the Work Write-Up. Paint as called for in the painting specifications.
- 3. Remove siding only when called for in Work Write-Up.
- 4. Vinyl Siding:
 - a. Shall be 46 mills (.046") thick or better.
 - b. Colored completely through.
 - c. Siding shall be installed over a minimum 1/4" fan fold foam core, and all seams must be sealed per manufactures specifications.
 - d. Shall carry a lifetime warranty for defects in material and color fading.
 - e. Warranty shall be placed in the owner(s) name and the contractor shall send all documentation to the company with a copy to the client.
 - f. Installation shall include wrapping all windows, soffit, fascia, porch ceiling, and pillars, et al.
 - g. Any exterior painted surfaces (including window sash) not wrapped shall be painted according to the painting specifications.

- h. Owner(s) shall pick one siding color and one trim color from samples of siding and a complimentary trim color.
 - i. Owner(s) shall sign sample of color choice. No bright or "hot" colors allowed.
 - j. Install according to vinyl siding institute. www.vinylsiding.org
- R. Caulking
 - 1. Caulk shall be appropriate for materials being sealed. All caulk shall have a material life of at least 15 years.
 - 2. Fully caulk around the following areas:
 - a. Window and door frames - all sides.
 - b. Where different materials meet.
 - c. Inside and outside corner trim boards.
 - d. Between foundation and wall plates or siding.
 - e. Around vents, fans, and window air conditioners.
- S. Interior Doors
 - 1. Shall be 1-3/8" hollow core.
 - 2. Must be stained or painted to owner's option.
 - 3. Complete with hardware and latch set.
- T. Wallpapering - Not Allowed
- U. Water Resistant Paneling
 - 1. Install FRP paneling, per manufacturing specifications for high moisture areas.
 - 2. Secure to sound backing using adhesive as recommended by manufacturer.
 - 3. Owner(s) to select color and pattern from manufacturer's standard items. Owner(s) to sign sample selection.
- V. Wood Paneling
 - 1. Shall be 3/32" minimum thickness.
 - 2. APA A-D interior paneling.
 - 3. Furnish and install wood trim as required for a complete installation. Stain trim to match paneling.
 - 4. Paneling to be selected by owner(s) based on specified allowance.
 - 5. Owner(s) to sign sample of selection.
- W. Kitchen Cabinets
 - 1. Job Built:
 - a. Shall be 3/4" fir or birch plywood with solid wood band on all exposed edges.
 - b. Stain a minimum of two (2) coats of lacquer (selected by owner(s)).
 - 2. Factory Built:
 - a. Residential grade, standard construction for wood cabinets.
 - b. Standard stain finish (selected by owner(s)).
 - c. Laminated (heat and stain resistant) counter top and edge trim with back splash.

3. Upper Cabinets:
 - a. Two (2) adjustable shelves.
 - b. Doors complete with hardware.
 4. Base Cabinets:
 - a. Continuous drawers with standard glides across top section of all cabinets except sink area.
 - b. One (1) adjustable shelf behind doors - all areas below drawer sections.
 - c. Laminated (heat and stain resistant) counter top and edge trim with back splash.
 - d. Cabinets complete with hardware.
- X. Insulation - All insulation material shall be cellulose, unless otherwise specified in the Work Write-Up. All attics must be insulated to an R-38, where possible.
1. Insulation Barrier:
 - a. Install insulation barriers specifically manufactured for use with the type of insulation installed.
 - b. Installation is to be in accordance with manufacturer's recommendations.
 - c. All chimneys, flues, recessed lights, and heat producing sources are to have insulation barriers around them.
 2. Gable Vents:
 - a. Openings are to be cut with close tolerance to insure a watertight fit.
 - b. Vent is to be nailed or screwed into the frame.
 - c. All damaged siding is to be repaired or replaced. Siding without sheathing behind it is to have the vent framed in and mounted on the frame to insure a tight fit.
 - d. Ventilation ratio shall be not less than 1/300.
 3. Roof Vents:
 - a. Roof vents are to be prepared and cut to close tolerance to insure a watertight fit.
 - b. The hole in the roof shall be no smaller than the throat size of the vent being installed so as not to restrict airflow.
 - c. Discarded materials are not to be dropped into the attic area. The Contractor shall remove discarded materials from the work site.
 - d. Vents (galvanized or aluminum NAS) are to be sealed and nailed with galvanized or aluminum nails.
 - e. If the high/low method is used in installing roof vents, 50 percent of the vents must be located in the upper portion to be ventilated at least 3' above lower vents, with the remaining 50 percent of the required ventilation provided by eave, soffit, or roof vents.
 - f. In the case of the high/low method of ventilation, a ratio shall not use less than 1\150.
 - g. Vents are to appear evenly spaced from the ground and be neat in appearance.
 4. Soffit Vents:
 - a. Vents are to be installed to insure free ventilation space to the attic area.
 - b. Vents are to be evenly spaced and a uniform distance from the sidewall.
 - c. Vents are to be screwed to the soffit.
 5. Attic Access:
 - a. R-19 batt insulation is to be stapled or nailed to the top of the door.

- b. Insulated manufactured doors may also be used. Insulation dams are to be constructed from 1" x 10" or better and are to be used to hold back attic insulation.
 - c. All attic accesses are to be weather-stripped using foam, tubular, or metal flap weather strip, nailed, or placed on the jamb.
 - d. When rebuilding an attic access, use 1" x 4" for the jamb and doorstop to form the flange. The door itself can be made of 3/4" plywood and insulated with R-19 batt insulation. 1" x 4", or smaller, is to be used as casing. The door and surrounding area is to be airtight. Damaged ceiling area is to be repaired with like materials, all wood installed is to be sealed against moisture.
- 6. Floor Insulation:
 - a. R-13 batt insulation is to be installed between floor joists, unless otherwise specified.
 - b. Insulation is to be secured with nails, staples, or wire.
 - c. The vapor barrier shall be towards the conditioned side.
- 7. Duct Insulation:
 - a. All loose joints on hot air ducts (also air conditioning ducts in attics) shall be sealed to prevent air leakage.
 - b. The ducts are to be wrapped using a standard R-5 or better vinyl wrapped fiberglass batt or standard duct wrap.
 - c. Cellulose can be blown against the ductwork to hold the insulation.
 - d. Duct insulation installed in a basement or crawl space is to have a vapor barrier installed to the outside.
- 8. Wall Insulation:
 - a. Walls shall be insulated to a minimum of R-13.
 - b. Building codes shall be considered regarding knob and tube wiring situations.
 - c. All exterior walls are to be insulated.
 - d. Siding is to be removed and replaced.
 - e. Damaged siding is to be replaced.
 - f. All sidewall insulation shall be densely packed cellulose.
- 9. Perimeter Insulation:
 - a. R-13 faced fiberglass is to be securely fastened to the underside of the floor, extending down the boxing area, unless otherwise specified.
 - b. Covers the inside foundation wall and then out into the crawlspace at least 2'.
 - c. Vapor barrier, shall be 6 mil plastic with 2' overlapped seams.
- 10. Insulation Material (Mineral):
 - a. Fiber Material or Product:
 - (1) Blanket batt conformance to F.5. HH-1-521E and ASTM C665-70.
 - (2) Board conformance to F.5. HH-1-526C and ASTM C612-70 or C726-72.
 - (3) Duct Material Conformance to F.5. HH-1-558B.
- 11. Insulation Material (Organic Fiber):
 - a. Cellulose conformance to HH-1-515D dated April 1988.
 - b. Block and Board conformance to F.S. LLL-12-525A and ASTM C208-72 and fire safety requirements.

12. Water Heater Blanket:
 - a. Specifically manufactured for the purpose.
 - b. Minimum R-5.
 - c. Capable of meeting a flame spread classification not to exceed 150 (per ASTM E-84).

PLUMBING AND HEATING SPECIFICATIONS

A. Water Piping

1. Above ground shall be type L copper tubing with copper solder joint fittings made up with 95-5 solder as recommended by manufacturer or PEX.
2. Connections to valves shall be made with N.P.T. to solder adapters.
3. Schedule 40 PVC cold plastic water pipe may also be used for water piping and Schedule 40 CPVC for hot plastic water piping.
4. All plastic water pipe shall be supported every 4'.
5. The site of new pipes shall be in conformance with the Uniform Plumbing Code. Valves shall be 150# brass with ends similar to fittings. Valves shall be provided at each piece of equipment to permit removal without shutting off service. Unions will be provided to permit removal of equipment without cutting pipe.
6. Supply lines to faucets shall be flex lines or copper tubing.
7. Shut-offs is required on all supply lines.

B. Plumbing Fixtures

1. Trim shall be chrome plated and supplies to each water closet shall be provided with stop valves to permit removal without shutting off service.
2. All plumbing fixtures and trim called for in the Work Write-Up shall be of standard grade equal to American Standard, Crane, or Kohler.
3. Shower shall have a rod and shower curtain installed, at minimum.
4. Bath Fans
 - a. Maximum sone rating of 1.5.
 - b. Fans to be installed according to manufactures specs.
 - c. Ductwork shall be insulated. Short straight runs if possible.
 - d. Use hard duct elbows, sealed and insulated, if turns are 90 degree or greater.
 - e. All connections on ductwork shall be mechanically fasten and sealed.
 - f. Fans must vent to exterior through roof or wall cap with termination to keep animals out.

C. Kitchen Equipment

1. Sink shall be double compartment stainless steel or enameled steel with self-sealing edge.
2. Refrigerator shall be a minimum 18 cu. ft., self-defrosting, 2-door unit appliance. Must be energy star rated.
3. White, Black or Almond (major brand mid priced model).
4. Ranges shall be electric or gas, with oven and oven light, and timer. White, Black, or Almond (major brand mid-priced range).
5. Gas ranges shall be attached to the gas supply with a steel flex gas line and shut off.

D. Heating Systems and Air Conditioners (AC)

1. Every heater that is existing or installed must be equipped with the following:
 - a. One hundred percent safety.
 - b. Code approved, metalbestos vent.
 - c. Proper gas piping and stops, installed in accordance with recommendations of the Uniform Plumbing Code.
 - d. Shut-off valves.
 - e. All transite vents are to be removed.
 - f. Blower.
 - g. New Thermostat.
2. If no local codes, must meet National Gas Code (NGC).
3. All new heating and AC units shall be sized and installed to provide sufficient heating and proper distribution for the size using manual J or equivalent sizing procedure requirements of the individual house. HVAC systems shall not be oversized by more than 15 percent.
4. New furnaces shall be a minimum of 92 or better percent efficient, sealed combustion. Must have five year warranty of parts and lifetime heat exchanger warranties.
5. No outside units or attic units shall be installed or units in crawl space unless specified in the Work Write-Up.
6. No flexible ductwork is allowed unless approved by inspector at the bid conference.
7. No open return air is allowed. All ductwork is to be included in bid.
8. All ductwork shall be sealed using mastic (example RCD #6).
9. All ductwork in unconditioned spaces shall be insulated.
10. Furnace and/or air conditioner shall be on separate circuits.
11. All appliances must be installed in accordance with manufacturer's specifications.
12. Must have easy access to filter.
13. If furnace is in basement, it must be raised a minimum of 2".
14. Plenum must be installed to receive future A-coil, if not doing AC.
15. AC must be 14 seer with matching A-coil, cased.

NOTE: Installer must be Master Mechanical Certified and for AC must have EPA Approved Certification.

E. Water Heaters

1. Water heaters, existing or installed, shall have the following:
 - a. Pressure and temperature relief valve.
 - b. Proper vent, gas piping, and shut off.
 - c. All transite vents to be replaced with code approved vent.
 - d. Must have Energy Factor (EF) of .62 or greater.
2. Pressure and temperature relief valves shall be extended within 2' of the floor, but no closer than 6".

NOTE: All cutting of walls, floors, ceilings, partitions, etc., for the purpose of rehabilitation work and the air sealing of openings around same, including the removal of all debris caused thereby, shall

be performed by the contractor performing the work. Repairs shall match existing materials, be finished to a smooth condition, and painted. (Refer to applicable Specifications for details.)

ALL EQUIPMENT REPLACED WITH NEW MATERIALS MUST BE REMOVED FROM THE PROPERTY AND DISPOSED OF PROPERLY.

SHOULD THERE BE ANY CONFLICTS BETWEEN THESE SPECIFICATIONS AND THE WORK WRITE-UP, THE PROJECT INSPECTOR SHOULD BE CONTACTED FOR A FINAL DETERMINATION.

ELECTRICAL SPECIFICATIONS

All electrical work shall be in conformance with the National Electrical Code (NEC)

If work write-up includes; change breaker box, service entrance, re-wire house or electrical components exceed \$1,000 –ALL electrical work must be performed by licensed electrician.

A. Wiring Devices

1. Single pole room lighting switches and three-way and four-way switches shall be UL approved.
2. Plug-ins shall be standard grounded receptacles except for plug-ins within 6' from water source and shall be GFI.
3. Plates for all switches and receptacles shall be non-conducting type (including screws) and UL approved.
4. Dryer shall have separate 220 circuit.
5. Furnace, air conditioner, refrigerator, dishwasher, and stove shall have separate circuit.
6. Garbage disposal shall have separate circuit(s) and wall switched receptacle.

B. Lighting Fixtures

1. Contractor shall provide all lighting fixtures complete with lamps, glassware, mounting hardware, frames and trim, stems, ballasts, sockets, etc., to provide a complete operating UL approved fixture at each location, as called for in the Work Write-Up. Energy efficient compact fluorescents bulb(s) are required in all replaced fixtures.
2. Porcelain lamp-holders are prohibited unless approved by the Project Inspector.

C. Panel Boards

1. Shall be UL approved, with the minimum components as listed:
 - a. NEMA 1 enclosure for indoor and NEMA 3R for exterior use.
 - b. 200A mains (minimum) unless noted otherwise.
 - c. 200A 2-pole main breaker (minimum) unless otherwise noted.
 - d. Seven (7) 1-pole branch breakers (minimum).
 - e. 2-pole breakers as required.
 - f. Separate/Neutral.
 - g. Separate ground bar.
 - h. Additional equipment as required meeting the National Electrical Code (NEC).

* Unless specified differently by inspector.

D. Wire

1. Wire and cables shall be copper.

2. All wire and cable shall comply with the standardization rules of the AIEE as to conductivity and shall be free from kinks, splices, and defects when installed. Conductors shall be in accordance with the requirements of IPCEA Publication's latest edition.
 3. All wire used in this project shall be new and shall be identified by type and by manufacturer.
 4. Branch circuit wiring shall be non-metallic sheath Type NM.
 5. Service conductors shall be Type XHHW.
 6. All wiring shall be concealed in wall, ceiling, or floor cavities. Wiring required to be exposed shall, be installed in intermediate grade metal conduct.
 7. All receptacles and other electrical equipment, except light fixtures, shall have a separate equipment ground conductor bonded to their metal cases, frames, etc. (except as noted).
- E. Lightning Arresters
1. 175 v., 2-pole lightning arresters shall be installed per NEC.
 2. Rewiring of house shall meet NEC.
- F. Smoke Alarms
1. Install a 10-year sealed Lithium battery smoke alarms unless rewiring house.
 2. If rewiring, install hardwired smoke alarms.

Note: All cutting of walls, floors, ceilings, partitions, etc., for the purpose of rehabilitation work and the air sealing of openings around same, including the removal of all debris caused thereby, shall be performed by the contractor performing the work. Repairs shall match existing materials, be finished to a smooth condition and painted. (Refer to applicable Specifications for details.)

ALL EQUIPMENT REPLACED WITH NEW MATERIALS MUST BE REMOVED FROM THE PROPERTY AND DISPOSED UP PROPERLY.

PAINTING AND VARNISHING SPECIFICATIONS

Preparation and painting of all surfaces containing Lead Base Paint shall be completed in accordance with HUD's "Safe Work Practices".

- A. Preparation of Surface
1. Exterior:
 - a. Wood surfaces to be painted or varnished shall be prepared in accordance with HUD's Safe Work Practices in the removal of loose, chipping and peeling paint, rough spots, and any obvious oil and/or grease that may be covering existing wood or paint.
 - b. All paint chips and residue from the preparation must be REMOVED from the site.
 - c. Where previous coats have chipped and peeled, the edge shall be wet scraped and puttied to obtain a smooth surface before new paint is applied.
 - d. Exterior painting shall include painting all doors and windows, removing all storm windows, repairing windows, replacing all broken or cracked glass, and re-glazing and caulking all joints and seams with paintable caulk. Clean and reinstall all storm windows upon completion.

- e. All nail holes shall be puttied and all defects in the surface shall be eliminated by the repair or complete replacement of the defective part, this includes siding, sills, casings, etc.
- 2. Interior:
 - a. Wood surfaces to be painted or varnished shall be prepared in accordance with HUD's Safe Work Practices in the removal of loose, chipping and peeling paint, rough spots, and any obvious oil and/or grease that may be covering existing wood or a paint.
 - b. Plaster or wallboard surfaces shall be sound, smooth, and free from holes, cracks, or irregularities.
 - c. All old wallpaper shall be entirely removed or covered with sheetrock, taped, then painted.
 - d. No paint or varnish shall be applied until all nail holes have been puttied and all defects in woodwork have been eliminated by the insertion of dutchmen or complete replacement of the damaged part.
- B. Materials – Lead based paint is in violation of HUD Lead-Based Paint Regulations and shall not be used.
- 1. Exterior:
 - a. All exterior paint must meet or exceed Sherwin Williams 15 year # A-100 and shall be delivered to site in manufacturer's sealed containers.
 - b. Each container shall be labeled giving type of paint color and application specification.
 - c. Before proceeding with exterior painting, samples of colors shall be shown to the owner(s) for selection. The owner(s) is limited to one (1) base color and one (1) trim color. Owner(s) shall sign the chosen color sample. Color options will be in a neutral color range, no bright or "hot colors" are allowed.
 - d. The primer coat shall be Alkyd oil tinted to match topcoat, produced by the same manufacturer as the finish coat.
 - 2. Interior:
 - a. Interior paint shall meet or exceed Sherwin William's Classic #99 for flat, semi-gloss, or satin gloss, and shall be delivered to the site in the manufacturer's sealed containers.
 - b. Primer for new sheetrock shall meet or exceed Sherwin William's Pro-Mar #400 latex primer.
 - c. Before proceeding with painting or varnishing, color samples shall be shown to the owner(s) for selection. The owner(s) is limited to one (1) base color and one (1) trim color. Owner(s) shall sign the chosen color sample.
 - d. Texture finish sample shall be submitted to the owner(s) for approval before application. Owner(s) shall sign sample choice.
 - e. The finish coat in kitchens and bathrooms shall be semi-gloss enamel and provide a durable and washable surface.
 - f. The primer shall be tinted to match topcoat, produced by the same manufacturer as the finished coat.
 - g. Varnish shall be polyurethane varnish.

2. Application:

a. Exterior:

- (1) All paint, unless specifically approved otherwise, shall be applied by brush or roller.
- (2) Apply each material at manufacturer's recommended spreading rate.
- (3) Do not apply exterior paint when temperature is 50° F. and falling, or when temperature is below 40° F. and steady, or in rainy, damp, or frosty weather until surface is thoroughly dry. Contact the Project Inspector if considering the Sherwin Williams product "Low Temp 35".
- (4) The Contractor shall be responsible for protecting all areas and surfaces that are not to receive paint and shall clean and repair or replace any such areas, surfaces, or items so damaged.
- (5) Finish work shall be uniform, of approved color, smooth, and free from runs, sags, and defective brushing and rolling. Edges of paint adjoining other materials or colors shall be sharp and clean.

b. Interior:

- (1) New paint applied on walls that are painted with a glossy paint or has a shine must be first prepared to remove glossy surface and cleaned prior to painting.
- (2) The Contractor shall be responsible for protecting all areas and surfaces that are not to receive paint and shall clean and repair or replace any such areas, surfaces, or items so damaged.
- (3) Finish work shall be uniform, of approved color, smooth, and free from runs, sags, and defective brushing and rolling. Edges of paint adjoining other materials or colors shall be sharp and clean.
- (4) Ceiling paint will be allowed when applying to ceilings.

c. Required Coatings:

- (1) Exterior wood, etc. (previously painted).
 - i. One (1) coat of exterior wood primer, tinted same as topcoat.
 - ii. Two (2) coats exterior latex house paint.
 - iii. Warranty is void if not followed.
- (2) Exterior wood and hardboard (bare):
 - i. One (1) coat exterior wood primer; tinted same as topcoat.
 - ii. Two (2) coats exterior latex house paint.
 - iii. Warranty is void if not followed.
- (3) Interior drywall:
 - i. Two (2) coats latex satin-gloss enamel wall paint.
 - ii. New drywall (1) coat of latex primer, (2) coats of satin-gloss enamel wall paint.
- (4) Wood porch floors and wood steps:
 - i. Two (2) coats porch floor enamel.
 - ii. Redwood and CCA does not need to be painted.
- (5) Spray textured drywall ceilings:
 - i. One (1) coat latex flat wall paint.
 - ii. One (1) coat spray texture.

SHOULD THERE BE ANY CONFLICTS BETWEEN THESE SPECIFICATIONS AND THE WORK WRITE-UP, THE PROJECT INSPECTOR SHOULD BE CONTACTED FOR A FINAL DETERMINATION.

ROOFING SPECIFICATIONS

Replacement of roof, when called for on the Work Write-Up, shall be defined as removing all existing shingles, flashings, valley tin, drip edge, and felt; then providing all new felt, valley tin, flashing, metal drip edge, and shingles, et al. Damaged sheathing or areas without solid sheathing shall have 15/32" construction grade plywood or 7/16" OSB Louisiana Pacific Interseal installed for sheathing.

A. Sheathing

1. Shall be 15/32" construction (CDX) grade plywood or 7/16" OSB Louisiana Pacific Interseal, APA Exposure #1 criteria or equal (THIS PRODUCT IS NOT "NORBOARD").
2. Nail sheathing with cement coated, rosin coated, or ring shank nails placed on 4" centers on all edges and over the face of each piece.

B. Underlayment

1. Shall be asphalt saturated felt, minimum 30#, which has low vapor resistance. Coated felts or laminated waterproof papers, which act as vapor barriers, should not be used.
2. Underlayment should be applied over the entire roof as soon as the roof sheathing has been completed.
3. Underlayment should be lapped 1' from both sides over all hips and ridges.
4. Only sufficient fasteners are to be used to hold the underlayment securely in place until shingles are applied.
5. Shingles are not to be applied over wet underlayment.

C. Shingles

1. Shall be new Heritage (equal to or better than 30-year), asphalt shingle squares, (nominal weight, installed according to manufacturer's specifications, using nails only.
3. Cut shingles at valleys (2" each side of valley center to expose a minimum of 4"). Woven valleys are not allowed.
4. Owner(s) to select shingle color by signing a sample of the chosen shingle. Contractor is to keep signed shingle until final completion certificate is signed.

D. Metal Roofing

1. Shall be 29 gauge painted metal roofing equal to or better than Metal Sales Pro Panel II.
2. All metal roofing shall be attached with the proper length metal to wood screws with seal washers.
3. Owners shall sign sample of color choice. Color options will be a neutral color range, no bright or "hot colors" are allowed.

E. Flashing

Shall be 30 nominal gauge galvanized steel securely fastened and tarred to watertight and water-shedding condition.

F. Gutters/Downspouts/Splash Blocks

1. Standard, 5" Ogee, galvanized, white, steel, or 26 gauge aluminum gutters, securely fastened at 4' maximum intervals. Owner(s) to chose color to compliment house.
2. Downspouts may be round or square, corrugated and anchored at top and bottom.
3. All joints are to be watertight.
4. Install 3' splash blocks at all downspout locations. If not concrete, the splash blocks shall be anchored. 3' gutter extensions, can be used.
5. Install blocking and/or fascia board where necessary between gutter and eaves to properly align gutter to receive run-off from roof.
6. Owner(s) shall sign sample of color choice. No bright or "hot" colors allowed.

NOTE: SHOULD THERE BE ANY CONFLICTS BETWEEN THESE SPECIFICATIONS AND THE WORK WRITE-UP. THE PROJECT INSPECTOR SHOULD BE CONTACTED FOR A FINAL DETERMINATION.

DEMOLITION SPECIFICATIONS

A. Structures, Trees, and Site Clearance

1. The removal and proper disposal of the dilapidated structure(s). Check with the landfill operator prior to beginning demolition for instructions on "proper disposal".
2. Cap off all sewer and waterlines.
3. The complete removal of all concrete, cement or blocks, back-fill any basement to grade. Level site to be mowed. Seeding is the responsibility of the property owner.
4. Only remove trees that are within 6' of structure to be demolished.

B. Abandoned Septic Systems

1. Remove all liquid contents and the top of the tank. If the pit begins to fill with water, puncture the floor.
2. Fill the cavity with earth, sand, or gravel. Pack the fill to 5' below the surface, knock down sides 2' below grade, and then complete the fill with subsoil, packing as fill is being installed. The structure is now ready for the plug.
3. A minimum of a 6" of bentonite clay or 24" reinforced cement plug is to be applied. The plug must extend beyond the lining of the original diameter of the hole.

C. Abandoned Wells

1. Remove any pumping equipment.
2. Disinfect the water prior to filling by adding 1 gallon of chlorine bleach for every 10' of water.
3. Fill the well with sand and gravel mix to the water level.
4. Fill the remainder of the well above the water level with natural clay material (subsoil low in organic matter) compacted to form a solid column.
5. Six feet from top of casing, pour a 3' plug of cement or neat cement or sodium bentonite clay.
6. Excavate around the casing to the top of the plug, cut off casing, and backfill the excavation with compacted earth material.

Note: Contractor may be instructed to cut the casing at 4' below grade to allow the plug to extend beyond the edge of the casing. This mushroom plug will help provide extra protection from water movement along either side of the casing.

SAFE WORK PRACTICES

All work must be conducted in a lead safe work practice manner according to HUD Approved Lead Safe Work Practices Training by someone who has received HUD Approved Lead Safe Work Practices Training, is a Kansas Department of Health & Environment certified Lead Based Paint Worker, or is supervised by a Kansas Department of Health & Environment Lead Based Paint Supervisor.

Reference Lead Paint Safety, A Field Guide for Painting, Home Maintenance, and Renovation Work, U.S. Department of Housing & Urban Development Office of Healthy Homes and Lead Hazard Control.

A. Prohibited Methods of Lead Based Paint Removal

1. Open flame burning or torching.
2. Machine sanding or grinding without a high-efficiency particulate air (HEPA) local exhaust control.
3. Abrasive blasting or sandblasting without a HEPA local exhaust control.
4. Heat guns operating above 1100° F. or charring the paint.
5. Dry sanding or dry scraping, except dry scraping in conjunction with heat guns or within 1' of electrical outlets.
6. Paint stripping in a poorly ventilated space using a volatile stripper that is a hazardous substance in accordance with regulations of the Consumer Product Safety Commission.

B. Occupant Protection and Worksite Preparation

1. Occupants and their belongings shall be protected.
2. The worksite must be prepared according to safe work practice standards.

C. Cleaning for Clearance

After rehabilitation/hazard reduction activities have been completed, the worksite shall be cleaned using cleaning methods, products, and devices that are successful in cleaning up dust-lead hazards, such as a HEPA vacuum or other method of equivalent efficacy, and lead specific detergents or equivalent.

D. Safe Work Practices Are Not Required

1. On a home built after 1978.
2. On housing exclusively for the elderly (62 years of age or older) or people with disabilities unless a child under six is expected to reside there.
3. On zero-bedroom dwellings.
4. On property that has been found to be free of lead-based paint by a certified lead-based paint inspector/risk assessor.
5. On property where all lead-based paint has been removed.
6. On unoccupied housing that will remain vacant until it is demolished.
7. On non-residential property.
8. On any rehabilitation or housing improvement that does not disturb a painted surface.

Glossary of Housing Terms

Air-Dried Lumber: Lumber that has been piled in yards or sheds for any length of time. For the United States as a whole, the minimum moisture content of thoroughly air-dried lumber is 12 to 15 percent and the average is somewhat higher. In the South, air-dried lumber may be no lower than 19 percent.

Airway: A space between roof insulation and roof boards for movement of air.

Alligatoring: Coarse checking pattern characterized by a slipping of the new paint coating over the old coating to the extent that the old coating can be seen through the fissures.

Anchor Bolts: Bolts to secure a wooden sill plate to concrete or masonry floor or wall.

Apron: The flat member of the inside trim of a window placed against the wall immediately beneath the stool.

Areaway: An open subsurface space adjacent to a building used to admit light or air or as a means of access to a basement.

Asphalt: Most native asphalt is a residue from evaporated petroleum. It is insoluble in water but soluble in gasoline and melts when heated. Used widely in building for waterproofing roof coverings of many types, exterior wall coverings, flooring tile, and the like.

Astragal: A molding attached to one of a pair of swinging doors, against which the other door strikes.

Attic Ventilators: In houses, screened openings provided to ventilate an attic space. They are located in the soffit area as inlet ventilators and in the gable end or along the ridge as outlet ventilators. They can also consist of power-driven fans used as an exhaust system. (See also Louver.)

Backbands: A simple molding sometimes used around the outer edge of plain rectangular casing as a decorative feature.

Backfill: The replacement of excavated earth into a trench around and against a basement foundation.

Balusters: Usually small vertical members in a railing used between a top rail and the stair treads or a bottom rail.

Balustrade: A railing made up of balusters, top rail, and sometimes bottom rail, used on the edge of stairs, balconies, and porches.

Barge Board: A decorative board covering the projecting rafter (fly rafter) of the gable end. At the cornice, this member is a fascia board.

Base or Baseboard: A board placed against the wall around a room next to the floor to finish properly between floor and plaster.

Base Molding: Molding used to trim the upper edge of interior baseboard.

Base Shoe: Molding used next to the floor on interior baseboard. Sometimes called a carpet strip.

Batten: Narrow strips of wood used to cover joints or as decorative vertical members over plywood or wide boards.

Batter Board: One of a pair of horizontal boards nailed to posts set at the corners of an excavation, used to indicate the desired level, also as a fastening for stretched strings to indicate outlines of foundation walls.

Bay Window: Any window space projecting outward from the walls of a building, either square or polygonal in plan.

Beam: A structural member transversely supporting a load.

Bearing Partition: A partition that supports any vertical load in addition to its own weight.

Bearing Wall: A wall that supports any vertical load in addition to its own weight.

Bed Molding: A molding in an angle, as between the overhanging cornice, or eaves, of a building and the sidewalls.

Blind Nailing: Nailing in such a way that the nailheads are not visible on the face of the work - usually at the tongue of matched boards.

Blind Stop: A rectangular molding, usually 3/4 by 1-3/8 inches or more in width, used in the assembly of a window frame. Serves as a stop for storm and screen or combination windows and to resist air infiltration.

Blue Stain: A bluish or grayish discoloration of the sapwood caused by the growth of certain moldlike fungi on the surface and in the interior of a piece, made possible by the same conditions that favor the growth of other fungi.

Bodied Linseed Oil: Linseed oil that has been thickened in viscosity by suitable processing with heat or chemicals. Bodied oils are obtainable in a great range in viscosity from a little greater than that of raw oil to just short of a jellied condition.

Boiled Linseed Oil: Linseed oil in which enough lead, manganese, or cobalt salts have been incorporated to make the oil harden more rapidly when spread in thin coatings.

Bolster: A short horizontal timber or steel beam on top of a column to support and decrease the span of beams or girders.

Boston Ridge: A method of applying asphalt or wood shingles at the ridge or at the hips of a roof as a finish.

Brace: An inclined piece of framing lumber applied to wall or floor to stiffen the structure. Often used on walls as temporary bracing until framing has been completed.

Brick Veneer: A facing of brick laid against and fastened to sheathing of a frame wall or tile wall construction.

Bridging: Small wood or metal members that are inserted in a diagonal position between the floor joists at midspan to act both as tension and compression members for the purpose of bracing the joists and spreading the action of loads.

Buck: Often used in reference to rough frame opening members. Door bucks used in reference to metal door frame.

Built Up Roof: Roofing composed of three to five layers of asphalt felt laminated with coal tar, pitch, or asphalt. The top is finished with crushed slag or gravel. Generally used on flat or low-pitched roofs.

Butt Joint: The junction where the ends of two timbers or other members meet in a square-cut joint.

Cant Strip: A triangular-shaped piece of lumber used at the junction of a flat deck and a wall to prevent cracking of the roofing that is applied over it.

Cap: The upper member of a column, pilaster, door cornice, molding, and the like.

Casement Frames and Sash: Frames of wood or metal enclosing part or all of the sash, which may be opened by means of hinges affixed to the vertical edge.

Casing: Molding of various widths and thicknesses used to trim door and window openings at the jambs.

Cement, Keene's: A white finish plaster that produces an extremely durable wall. Because of its density, it excels for use in bathrooms and kitchens and is also used extensively for the finish coat in auditoriums, public buildings, and other places where walls may be subjected to unusually hard wear or abuse.

Checking: Fissures that appear with age in many exterior paint coatings at first superficial, but which in time may penetrate entirely through the coating.

Checkrails: Meeting rails sufficiently thicker than a window to fill the opening between the top and bottom sash made by the parting stop in the frame of double-hung windows. They are usually beveled.

Collar Beams: Nominal 1- or 2-inch thick members connecting opposite roof rafters. They serve to stiffen the roof structure.

Column: In architecture: A perpendicular supporting member, circular or rectangular in section, usually consisting of a base, shaft, and capital. In engineering, a vertical structural compression member that supports loads acting in the direction of its longitudinal axis.

Combination Doors or Windows: Combination doors or windows used over regular openings. They provide winter insulation and summer protection and often have self-storing or removable glass and screen inserts. This eliminates the need for handling a different unit each season.

Concrete Plain: Concrete either without reinforcement, or reinforced only for shrinkage or temperature changes.

Condensation: In a building: Beads or drops of water (and frequently frost in extremely cold weather) that accumulate on the inside of the exterior covering of a building when warm, moisture-laden air from the interior reaches a point where the temperature no longer permits the air to sustain the moisture it holds. Use of louvers or attic ventilators will reduce moisture condensation in attics. A vapor barrier under the gypsum lath or dry wall on exposed walls will reduce condensation in them.

Conduit, Electrical: A pipe, usually metal, in which wire is installed.

Construction Dry-Wall: A type of construction in which the interior wall finish is applied in a dry condition, generally in the form of sheet materials or wood paneling, as contrasted to plaster.

Construction Frame: A type of construction in which the structural parts are wood or depend upon a wood frame for support. In codes, if masonry veneer is applied to the exterior walls, the classification of this type of construction is usually unchanged.

Coped Joint: See Scribing.

Corbel Out: To build out one or more courses of brick or stone from the face of a wall to form a support of timbers.

Corner Bead: A strip of formed sheet metal, sometimes combined with a strip of metal lath, placed on corners before plastering to reinforce them. Also, a strip of wood finish three-quarters-round or angular placed over a plastered corner for protection.

Corner Boards: Used as trim for the external corners of a house or other frame structure against which the ends of the siding are finished.

Corner Braces: Diagonal braces at the corners of frame structure to stiffen and strengthen the wall.

Cut-in Brace: Nominal 2-inch members, usually 2 by 4's, cut in between each stud diagonally.

Cornerite: Metal-mesh lath cut into strips and bent to a right angle. Used in interior corners of walls and ceilings on lath to prevent cracks in plastering.

Cornice: Overhang of a pitched roof at the eave line, usually consisting of a fascia board, a soffit for a closed cornice, and appropriate moldings.

Cornice Return: That portion of the cornice that returns on the gable end of a house.

Counterflashing: A flashing usually used on chimneys at the roofline to cover shingle flashing and to prevent moisture entry.

Cove Molding: A molding with a concave face used as trim or to finish interior corners.

Crawl Space: A shallow space below the living quarters of a basementless house, normally enclosed by the foundation wall.

Cricket: A small drainage-diverting roof structure of single or double slope placed at the junction of larger surfaces that meet at an angle, such as above a chimney.

Cross-Bridging: Diagonal bracing between adjacent floor joists, placed near the center of the joist span to prevent joists from twisting.

Crown Molding: A molding used on cornice or wherever an interior angle is to be covered.

D: See Penny.

Dado: A rectangular groove across the width of a board or plank. In interior decoration; a special type of wall treatment.

Decay: Disintegration of wood or other substances through the action of fungi.

Deck paint: An enamel with a high degree of resistance to mechanical wear designed for use on such surfaces as porch floors.

Density: The mass of substance in a unit volume. When expressed in the metric system, it is numerically equal to the specific gravity of the same substance.

Dewpoint: Temperature at which a vapor begins to deposit as a liquid. Applies especially to water in the atmosphere.

Dimensions: See Lumber dimension.

Direct Nailing: To nail perpendicular to the initial surface or to the junction of the pieces joined. Also termed face nailing.

Doorjamb Interior: The surrounding case into which and out of which a door closes and opens. It consists of two upright pieces, called side jambs, and a horizontal head jamb.

Dormer: An opening in a sloping roof, the framing of which projects out to form a vertical wall suitable for windows or other openings.

Downspout: A pipe, usually of metal, for carrying rainwater from roof gutters.

Dressed and Matched (Tongued and Grooved): Boards or planks machined in such a manner that there is a groove on one edge and a corresponding tongue on the other.

Drier Paint: Usually, oil-soluble soaps of such metals as lead, manganese, or cobalt, which, in small proportions, hasten the oxidation and hardening (drying) of the drying oils in paints.

Drip: (a) A member of a cornice or other horizontal exterior finish course that has a projection beyond the other parts for throwing off water. (b) A groove in the underside of a sill or drip cap to cause water to drop off on the outer edge instead of drawing back and running down the face of the building.

Drip Cap: A molding placed on the exterior top side of a door or window frame to cause water to drip beyond the outside of the frame.

Dry-Wall: Interior covering material, such as gypsum board or plywood, which is applied in large sheets or panels.

Ducts: In a house, usually round or rectangular metal pipes for distributing warm air from the heating plant to rooms, or air from a conditioning device or as cold air returns. Ducts are also made of asbestos and composition materials.

Eaves: The margin or lower part of a roof projecting over the wall.

Expansion Joint: A bituminous fiber strip used to separate blocks or units of concrete to prevent cracking due to expansion as a result of temperature changes. Also used on concrete slabs.

Facia or Fascia: A flat board, band, or face, used sometimes by itself but usually in combination with moldings, often located at the outer face of the cornice.

Filler (Wood): A heavily pigmented preparation used for filling and leveling off the pores in open-pored woods.

Fire-Resistive: In the absence of a specific ruling by the authority having jurisdiction, applies to materials for construction not combustible in the temperatures of ordinary fires and that will withstand such fires without serious impairment of their usefulness for at least 1 hour.

Fire-Retardant Chemical: A chemical or preparation of chemicals used to reduce flammability or to retard spread of flame.

Fire Stop: A solid, tight closure of a concealed space, placed to prevent the spread of fire and smoke through such a space. In a frame wall, this will usually consist of 2 by 4 cross blocking between studs.

Fishplate: A wood or plywood pieces used to fasten the ends of two members together at a butt joint with nails or bolts. Sometimes used at the junction of opposite rafters near the ridge line.

Flagstone (Flagging or Flags): Flat stones from 1 to 4 inches thick, used for rustic walks, steps, floors, and the like.

Flashing: Sheet metal or other material used in roof and wall construction to protect a building from water seepage.

Flat Paint: An interior paint that contains a high proportion of pigment and dries to a flat or lusterless finish.

Flue: The space or passage in a chimney through which smoke, gas, or fumes ascend. Each passage is called a flue, which together with any others and the surrounding masonry make up the chimney.

Flue Lining: Fire clay or terra-cotta pipe, round or square, usually made in all ordinary flue sizes and in 2-foot lengths, used for the inner lining of chimneys with the brick or masonry work around the outside. Flue lining in chimneys runs from about a foot below the flue connection to the top of the chimney.

Fly Rafters: End rafters of the gable overhang supported by roof sheathing and lookouts.

Footing: A masonry section, usually concrete, in a rectangular form wider than the bottom of the foundation wall or pier it supports.

Foundation: The supporting portion of a structure below the first-floor construction, or below grade, including the footings.

Framing, Balloon: A system of framing a building in which all vertical structural elements of the bearing walls and partitions consist of single pieces extending from the top of the foundation sill plate to the roofplate and to which all floor joists are fastened.

Framing, Platform: A system of framing a building in which floor joists of each story rest on the top plates of the story below or on the foundation sill for the first story, and the bearing walls and partitions rest on the subfloor of each story.

Frieze: In house construction; a horizontal member connecting the top of the siding with the soffit of the cornice.

Frost Line: The depth of frost penetration in soil. This depth varies in different parts of the country. Footings should be placed below this depth to prevent movement.

Fungi Wood: Microscopic plants that live in damp wood and cause mold, stain, and decay.

Fungicide: A chemical that is poisonous to fungi.

Furring: Strips of wood or metal applied to a wall or other surface to even it and normally to serve as a fastening base for finish material.

Gable: In house construction; the portion of the roof above the eaveline of a double-sloped roof.

Gable End: An end wall having a gable.

Girder: A large or principal beam of wood or steel used to support concentrated loads at isolated points along its length.

Gloss Enamel: A finishing material made of varnish and sufficient pigments to provide opacity and color, but little or no pigment of low opacity. Such an enamel forms a hard coating with maximum smoothness of surface and a high degree of gloss.

Gloss (Paint or Enamel): A paint or enamel that contains a relatively low proportion of pigment and dries to a sheen or luster.

Grain: The direction, size, arrangement, appearance, or quality of the fibers in wood.

Grain, Edge (Vertical): Edge-grain lumber has been sawed parallel to the pith of the log and approximately at right angles to the growth rings, i.e., the rings form an angle of 45 degrees or more with the surface of the piece.

Grain, Flat: Flat-grain lumber has been sawed parallel to the pith of the log and approximately tangent to the growth rings, i.e., the rings form an angle of less than 45 degrees with the surface of the piece.

Grain, Quartersawn: Another term for edge grain.

Grounds: Guides used around openings and at the floorline to strike off plaster. They can consist of narrow strips of wood or of wide subjambes at interior doorways. They provide a level plaster line for installation of casing and other trim.

Grout: Mortar made of such consistency (by adding water) that it will just flow into the joints and cavities of the masonry work and fill them solid.

Gusset: A flat wood, plywood, or similar type member used to provide a connection at intersection of wood members. Most commonly used at joints of wood trusses. They are fastened by, nails, screws, bolts, or adhesives.

Gutter or Eave Trough: A shallow channel or conduit of metal or wood set below and along the eaves of a house to catch and carry off rainwater from the roof.

Gypsum Plaster: Gypsum formulated to be used with the addition of sand and water for base-coat plaster.

Header: (a) A beam placed perpendicular to joists and to which joists are nailed in framing for chimney, stairway, or other opening. (b) A wood lintel.

Hearth: The inner or outer floor of a fireplace, usually made of brick, tile, or stone.

Heartwood: The wood extending from the pith to the sapwood, the cells of which no longer participate in the life processes of the tree.

Hip: The external angle formed by the meeting of two sloping sides of a roof.

Hip Roof: A roof that rises by inclined planes from all four sides of a building.

Humidifier: A device designed to increase the humidity within a room or a house by means of the discharge of water vapor. They may consist of individual room-size units or larger units attached to the heating plant to condition the entire house.

I-Beam: A steel beam with a cross section resembling the letter “I”. It is used for long spans as basement beams or over wide wall opening, such as a double garage door, when wall and roof loads are imposed on the opening.

IIC: A new system utilized in the Federal Housing Administration recommended criteria for impact sound insulation.

INR (Impact Noise Rating): A single figure rating which provides an estimate of the impact sound-insulation performance of a floor-ceiling assembly.

Insulation Board, Rigid: A structural building board made of coarse wood or cane fiber in 1/2 and 25/32-inch thicknesses. It can be obtained in various size sheets, in various densities, and with several treatments.

Insulation, Thermal: Any material high in resistance to heat transmission that, when placed in the walls, ceiling, or floors of a structure, will reduce the rate of heat flow.

Interior Finish: Material used to cover the interior framed areas, or material of walls and ceilings.

Jack Rafter: A rafter that spans the distance from the wallplate to a hip, or from a valley to a ridge.

Jamb: The side and head lining of a doorway, window, or other opening.

Joint: The space between the adjacent surfaces of two members or components joined and held together by nails, glue, cement, mortar, or other means.

Joint Cement: A powder that is usually mixed with water and used for joint treatment in gypsum-wallboard finish. Often called “spackle”.

Joist: One of a series of parallel beams, usually 2 inches in thickness, used to support floor and ceiling loads, and supported in turn by larger beams, girders, or bearing walls.

Kiln Dried Lumber: Lumber that has been kiln dried often to a moisture content of 6 to 12 percent. Common varieties of softwood lumber, such as framing lumber are dried to a somewhat higher moisture content.

Knot: In lumber, the portion of a branch or limb of a tree that appears on the edge or face of the piece.

Landing: A platform between flights of stairs or at the termination of a flight of stairs.

Lath: A building material of wood, metal, gypsum, or insulation board that is fastened to the frame of a building to act as a plaster base.

Lattice: A framework of crossed wood or metal strips.

Leader: See Downspout.

Ledger Strip: A strip of lumber nailed along the bottom of the side of a girder on which joists rest.

Let-in Brace: Nominal 1-inch thick boards applied into notched studs diagonally.

Light: Space in a window sash for a single pane of glass: Also, a pane of glass.

Lintel: A horizontal structural member that supports the load over an opening such as a door or window.

Lookout: A short wood bracket or cantilever to support an overhang portion of a roof or the like, usually concealed from view.

Louver: An opening with a series of horizontal slats so arranged as to permit ventilation but to exclude rain, sunlight, or vision. See also Attic ventilators.

Lumber: Lumber is the product of the sawmill and planing mill not further manufactured other than by sawing, resawing, and passing lengthwise through a standard planing machine, crosscutting to length, and matching.

Lumber Boards: Yard lumber less than 2 inches thick and 2 or more inches wide.

Lumber, Dimension: Yard lumber from 2 inches to, but not including, 5 inches thick and 2 or more inches wide. Includes joists, rafters, studs, plank, and small timbers.

Lumber, Dressed Size: The dimension of lumber after shrinking from green dimension and after matching to size or pattern.

Lumber, Matched: Lumber that is dressed and shaped on one edge in a grooved pattern and on the other in a tongued pattern.

Lumber, Shiplap: Lumber that is edge dressed to make a close rabbeted or lapped joint.

Lumber, Timbers: Yard lumber 5 or more inches in least dimension. Includes beams, stringers, posts, caps, sills, girders, and purlins.

Lumber, Yard: Lumber of those grades, sizes, and patterns, which are generally intended for ordinary construction, such as framework and rough coverage of houses.

Mantel: The shelf above a fireplace. Also used in referring to the decorative trim around a fireplace opening.

Masonry: Stone, brick, concrete, hollow-tile, concrete-block, gypsum-block, or other similar building units or material or a combination of the same, bonded together with mortar to form a wall, pier, buttress, or similar mass.

Mastic: A pasty material used as a cement (as for setting tile) or a protective coating (as for thermal insulation or waterproofing).

Metal Lath: Sheets of metal that are slit and drawn out to form openings. Used as a plaster base for walls and ceilings and as reinforcing over other forms of plaster base.

Millwork: Generally all building materials made of finished wood and manufactured in millwork plants and planing mills are included under the term "millwork." It includes such items as inside and outside doors, window and doorframes, blinds, porchwork, mantels, panelwork, stairways, moldings, and interior trim. It normally does not include flooring, ceiling, or siding.

Miter Joint: The joint of two pieces at an angle that bisects the joining angle. For example, the miter joint at the side and head casing at a door opening is made at a 45° angle.

Moisture Content of Wood: Weight of the water contained in the wood, usually expressed as a percentage of the weight of the oven-dry wood.

Moldings: A wood strip having a curved or projecting surface used for decorative purposes.

Mortise: A slot cut into a board, plank, or timber, usually edgewise, to receive tenon of another board, plank, or timber to form a joint.

Mullion: A vertical bar or divider in the frame between windows, doors, or other openings.

Muntin: A small member that divides the glass or openings of sash or doors.

Natural Finish: A transparent finish that does not seriously alter the original color or grain of the natural wood. Natural finishes are usually provided by sealers, oils, varnishes, water-repellent preservatives, and other similar materials.

Newel: A post to which the end of a stair railing or balustrade is fastened. Also, any post to which a railing balustrade is fastened.

Nonbearing Wall: A wall supporting no load other than its own weight.

Nosing: The projecting edge of a molding drip. Usually applied to the projecting molding on the edge of a stair tread.

Notch: A crosswise rabbet at the end of a board.

O.C. on Center: The measurement of spacing for studs, rafters, joists, and the like in a building from the center of one member to the center of the next.

O.G. or Ogee: A molding with a profile in the form of a letter “S”, having the outline of a reversed curve.

Outrigger: An extension of a rafter beyond the wall line. Usually a smaller member nailed to a larger rafter to form a cornice or roof overhang.

Paint: A combination of pigments with suitable thinners or oils to provide decorative and protective coatings.

Panel: In house construction, a thin flat piece of wood, plywood, or similar material, framed by stiles and rails as in a door or fitted into grooves of thicker material with molded edges for decorative wall treatment.

Paper Building: A general term for papers, felts, and similar sheet materials used in buildings without reference to their properties or uses.

Paper Sheathing: A building material, generally paper or felt, used in wall and roof construction as a protection against the passage of air and sometimes moisture.

Parting Stop or Strip: A small wood piece used in the side and head jambs of double-hung windows to separate upper and lower sash.

Partition: A wall that subdivides spaces within any story of a building.

Penny: As applied to nails, it originally indicated the price per hundred. The term now serves as a measure of nail length and is abbreviated by the letter “d”.

Perm: A measure of water vapor movement through a material (grains per square foot per inch of mercury difference in vapor pressure).

Pier: A column of masonry, usually rectangular in horizontal cross section, used to support other structural members.

Pigment: A powdered solid in suitable degree of subdivision for use in paint or enamel.

Pitch: The incline slope of a roof or the ratio of the total rise to the total width of a house, i.e., an 8-foot rise and 24-foot width is a one-third pitch roof. Roof slope is expressed in the inches of rise per foot of run.

Pitch Pocket: An opening extending parallel to the annual rings of growth that usually contains, or has contained, either solid or liquid pitch.

Pith: The small, soft core at the original center of a tree around which wood formation takes place.

Plaster Grounds: Strips of wood used as guides or strike-off edges around window and door openings and at base of walls.

Plate: Sill plate: A horizontal member anchored to a masonry wall. Sole plate: bottom horizontal member of a frame wall. Top plate: Top horizontal member of a frame wall supporting ceiling joists, rafters, or other members.

Plough: To cut a lengthwise groove in a board or plank.

Plumb: Exactly perpendicular; vertical.

Ply: A term to denote the number of thicknesses or layers of roofing felt, veneer in plywood, or layers in built-up materials, in any finished piece of such material.

Plywood: A piece of wood made of three or more layers of veneer joined with glue, and usually laid with the grain or adjoining plies at right angles. Almost always an odd number of plies are used to provide balanced construction.

Pores: Wood cells of comparatively large diameter that have open ends and are set one above the other to form continuous tubes. The openings of the vessels on the surface of a piece of wood are referred to as pores.

Preservative: Any substance that, for a reasonable length of time, will prevent the action of wood-destroying fungi, borers of various kinds, and similar destructive agents when the wood has been properly coated or impregnated with it.

Primer: The first coat of paint in a paint job that consists of two or more coats; also the paint used for such a first coat.

Putty: A type of cement usually made of whiting and boiled linseed oil, beaten or kneaded to the consistency of dough, and used in sealing glass in sash, filling small holes and crevices in wood, and for similar purposes.

Quarter Round: A small molding that has the cross section of a quarter circle.

Rabbet: A rectangular longitudinal groove cut in the corner edge of a board or plank.

Radiant Heating: A method of heating, usually consisting of a forced hot water system with pipes placed in the floor, wall, or ceiling; or with electrically heated panels.

Rafter: One of a series of structural members of a roof designed to support roof loads. The rafters of a flat roof are sometimes called roof joists.

Rafter, Hip: A rafter that forms the intersection of an external roof angle.

Rafter Valley: A rafter that forms the intersection of an internal roof angle. The valley rafter is normally made of double 2-inch thick members.

Rail: Cross members of panel doors or of a sash. Also, the upper and lower members of a balustrade or staircase extending from one vertical support, such as a post, to another.

Rake: Trim members that run parallel to the roof slope and form the finish between the wall and a gable roof extension.

Raw Linseed Oil: The crude product processed from flaxseed and usually without much subsequent treatment.

Reflective Insulation: Sheet material with one or both surfaces of comparatively low heat emissivity, such as aluminum foil. When used in building construction the surfaces face air spaces, reducing the radiation across the air space.

Reinforcing: Steel rods or metal fabric placed in concrete slabs, beams, or columns to increase their strength.

Relative Humidity: The amount of water vapor in the atmosphere, expressed as a percentage of the maximum quantity that could be present at a given temperature. (The actual amount of water vapor that can be held in space increases with the temperature.)

Resorcinol Glue: A glue that is high in both wet and dry strength and resistant to high temperatures. It is used for gluing lumber or assembly joints that must withstand severe service conditions.

Ribbon (Girt): Normally a 1- by 4-inch board let into the studs horizontally to support ceiling or second-floor joists.

Ridge: The horizontal line at the junction of the top edges of two sloping roof surfaces.

Ridge Board: The board placed on edge at the ridge of the roof into which the upper ends of the rafters are fastened.

Rise: In stairs, the vertical height of a step or flight of stairs.

Riser: Each of the vertical boards closing the spaces between the treads of stairways.

Roll Roofing: Roofing material, composed of fiber and saturated with asphalt that is supplied in 36-inch wide rolls with 108 square feet of material. Weights are generally 45 to 90 pounds per roll.

Roof Sheathing: The boards or sheet material fastened to the roof rafters on which the shingle or other roof covering is laid.

Rubber-Emulsion Paint: Paint, the vehicle of which consists of rubber or synthetic rubber dispersed in fine droplets in water.

Run: In stairs, the net width of a step or the horizontal distance covered by a flight of stairs.

Saddle: Two sloping surfaces meeting in a horizontal ridge, used between the back side of a chimney, or other vertical surface, and a sloping roof.

Sand Float Finish: Lime mixed with sand, resulting in a textured finish.

Sapwood: The outer zone of wood, next to the bark. In the living tree it contains some living cells (the heartwood contains none), as well as dead and dying cells. In most species, it is lighter colored than the heartwood. In all species, it is lacking in decay resistance.

Sash: A single light frame containing one or more lights of glass.

Sash Balance: A device, usually operated by a spring or tensioned weather-stripping designed to counterbalance double-hung window sash.

Saturated Felt: A felt that is impregnated with tar or asphalt.

Scratch Coat: The first coat of plaster, which is scratched to form a bond for the second coat.

Screed: A small strip of wood, usually the thickness of the plaster coat, used as a guide for plastering.

Scribing: Fitting woodwork to an irregular surface. In moldings, cutting the end of one piece to fit the molded face of the other at an interior angle to replace a miter joint.

Sealer: A finishing material, either clear or pigmented, that is usually applied directly over uncoated wood for the purpose of sealing the surface.

Seasoning: Removing moisture from green wood in order to improve its serviceability.

Semigloss Paint or Enamel: A paint or enamel made with a slight insufficiency of nonvolatile vehicle so that its coating, when dry, has some luster but is not very glossy.

Shake: A thick handsplit shingle, resawed to form two shakes; usually edge-grained.

Sheathing: The structural covering, usually wood boards or plywood, used over studs or rafters of a structure. Structural building board is normally used only as wall sheathing.

Sheathing Paper: See Paper, sheathing.

Sheet Metal Work: All components of a house employing sheet metal, such as lashing, gutters and downspouts.

Shellac: A transparent coating made by dissolving lac, a resinous secretion of the lac bug (a scale insect that thrives in tropical countries, especially India), in alcohol.

Shingles: Roof covering of asphalt, asbestos, wood, tile, slate, or other material cut to stock lengths, widths, and thicknesses.

Shingles Siding: Various kinds of shingles, such as wood shingles or shakes and nonwood shingles that are used over sheathing for exterior sidewall covering of a structure.

Shiplap: See Lumber, shiplap.

Shutter: Usually lightweight louvered or flush wood or nonwood frames in the form of doors located at each side of a window. Some are made to close over the window for protection and others are fastened to the wall as a decorative device.

Siding: The finish covering of the outside wall of a frame building, whether made of horizontal weatherboards, vertical boards with battens, shingles, or other material.

Siding, Bevel (Lap Siding): Wedge-shaped boards used as horizontal siding in a lapped pattern. This siding varies in butt thickness from 1/2 to 3/4 inch and in widths up to 12 inches. Normally used over some type of sheathing.

Siding, Dolly Varden: Beveled wood siding that is rabbeted on the bottom edge.

Siding, Drop: Usually 3/4 inch thick and 6 and 8 inches wide with tongued-and-grooved or shiplap edges. Often used as siding without sheathing in secondary buildings.

Sill: The lowest member of the frame of a structure, resting on the foundation and supporting the floor joists or the uprights of the wall. The member forming the lower side of an opening, as a door sill, window sill, etc.

Sleeper: Usually, a wood member embedded in concrete, as in a floor, that serves to support and to fasten subfloor or flooring.

Soffit: Usually the underside of an overhanging cornice.

Soil Cover (Ground Cover): A light covering of plastic film, roll roofing, or similar material used over the soil in crawl spaces of buildings to minimize moisture permeation of the area.

Soil Stack: A general term for the vertical main of a system of soil, waste, or vent piping.

Sole or Sole Plate: See Plate.

Solid Ridging: A solid member placed between adjacent floor joists near the center of the span to prevent joists from twisting.

Span: The distance between structural supports such as walls, columns, piers, beams, girders, and trusses.

Splash Block: A small masonry block laid with the top close to the ground surface to receive roof drainage from downspouts and to carry it away from the building.

Square: A unit of measure--100 square feet--usually applied to roofing material. Sidewall coverings are sometimes packed to cover 100 square feet and are sold on that basis.

Stain Shingle: A form of oil paint, very thin in consistency, intended for coloring wood with rough surfaces, such as shingles, without forming a coating of significant thickness or gloss.

Stair Carriage: Supporting member for stair treads. Usually 2-inch plank notched to receive the treads, sometimes called a “rough horse.”

Stair Landing: See Landing.

Stair Rise: See Rise.

STC (Sound Transmission Class): A measure of sound stopping of ordinary noise.

Stile: An upright framing member in a panel door.

Stool: A flat molding fitted over the window sill between jambs and contacting the bottom rail of the lower sash.

Storm Sash or Storm Window: An extra window usually placed on the outside of an existing one as additional protection against cold weather.

Story: That part of a building between any floor and the floor or roof next above.

Strip Flooring: Wood flooring consisting of narrow, matched strips.

String, Stringer: A timber or other support for cross members in door or ceilings. In stairs; the support on which the stair treads rest also, stringboard.

Stucco: Most commonly refers to an outside plaster made with Portland cement as its base.

Stud: One of a series of slender wood or metal vertical structural members placed as supporting elements in walls and partitions. (Plural: studs or studding.)

Subfloor: Boards of plywood laid on joists over which a finish floor is to be laid.

Suspended Ceiling: A ceiling system supported by hanging it from the overhead structural framing.

Tail Beam: A relatively short beam or joist supported in a wall on one end and by a header at the other.

Termites: Insects that superficially resemble ants in size, general appearance, and habit of living in colonies; hence, they are frequently call “white ants.” Subterranean termites establish themselves in buildings not by being carried in with lumber, but by entering from ground nests after the building has been constructed. If unmolested, they eat out the woodwork, leaving a shell of sound wood to conceal their activities, and damage may proceed so far as to cause collapse of parts of a structure before discovery. There are about 56 species of termites known in the United States; but the two major ones, classified by the manner in which they attack wood, are ground-inhabiting or subterranean termites (the most common) and dry-wood termites, which are found almost exclusively along the extreme southern border and the Gulf of Mexico in the United States.

Termite Shield: A shield, usually of noncorrodible metal, placed in or on a foundation wall or other mass of masonry or around pipes to prevent passage of termites.

Terneplate: Sheet iron or steel coated with an alloy of lead and tin.

Threshold: A strip of wood or metal with beveled edges used over the finished floor and the sill of exterior doors.

Toenailing: To drive a nail at a slant with the initial surface in order to permit it to penetrate into a second member.

Tongued and Grooved: See Dressed and matched.

Tread: The horizontal board in a stairway on which the foot is placed.

Trim: The finish materials in a building, such as moldings, applied around openings (window trim, door trim) or at the floor and ceiling of rooms (baseboard, cornice, and other moldings).

Trimmer: A beam or joist to which a header is nailed in framing for a chimney, stairway, or other opening.

Truss: A frame or jointed structure designed to act as a beam of long span, while each member is usually subjected to longitudinal stress only, either tension or compression.

Turpentine: A volatile oil used as a thinner in paints and as a solvent in varnishes. Chemically, it is a mixture of terpenes.

Undercoat: A coating applied prior to the finishing or top coats of a paint job. It may be the first of two or the second of three coats. In some usage of the word it may become synonymous with priming coat.

Under Layment: A material placed under finished coverings, such as flooring, or shingles, to provide a smooth, even surface for applying the finish.

Valley: The internal angle formed by the junction of two sloping sides of a roof.

Vapor Barrier: Material used to retard the movement of water vapor into walls and prevent condensation in them. Usually considered as having a perm value of less than 1.0. Applied separately over the warm side of exposed walls or as a part of batt or blanket insulation.

Varnish: A thickened preparation of drying oil or drying oil and resin suitable for spreading on surfaces to form continuous, transparent coatings, or for mixing with pigments to make enamels.

Vehicle: The liquid portion of a finishing material; it consists of the binder (nonvolatile) and volatile thinners.

Veneer: Thin sheets of wood made by rotary cutting or slicing of a log.

Vent: A pipe or duct that allows flow of air as an inlet or outlet.

Vermiculite: A mineral closely related to mica, with the faculty of expanding on heating to form lightweight material with insulation quality. Used as bulk insulation and also as aggregate in insulating and acoustical plaster and in insulation concrete floors.

Volatile Thinner: A liquid that evaporates readily and is used to thin or reduce the consistency of finishes without altering the relative volumes of pigments and nonvolatile vehicles.

Wane: Bark, or lack of wood from any cause, on edge or corner of a piece of wood.

Water-Repellent Preservative: A liquid designed to penetrate into wood and impart water repellency and a moderate preservative protection. It is used for millwork, such as sash and frames, and is usually applied by dripping.

Weather-Strip: Narrow or jamb-width sections of thin material or other metal to prevent infiltration of air and moisture around windows and doors. Compression weather stripping prevents air infiltration, provides tension, and acts as a counter balance.

Wood Rays: Strips of cells extending radially within a tree and varying in height from a few cells in some species to 4 inches or more in oak. The rays serve primarily to store food and to transport it horizontally in the tree.