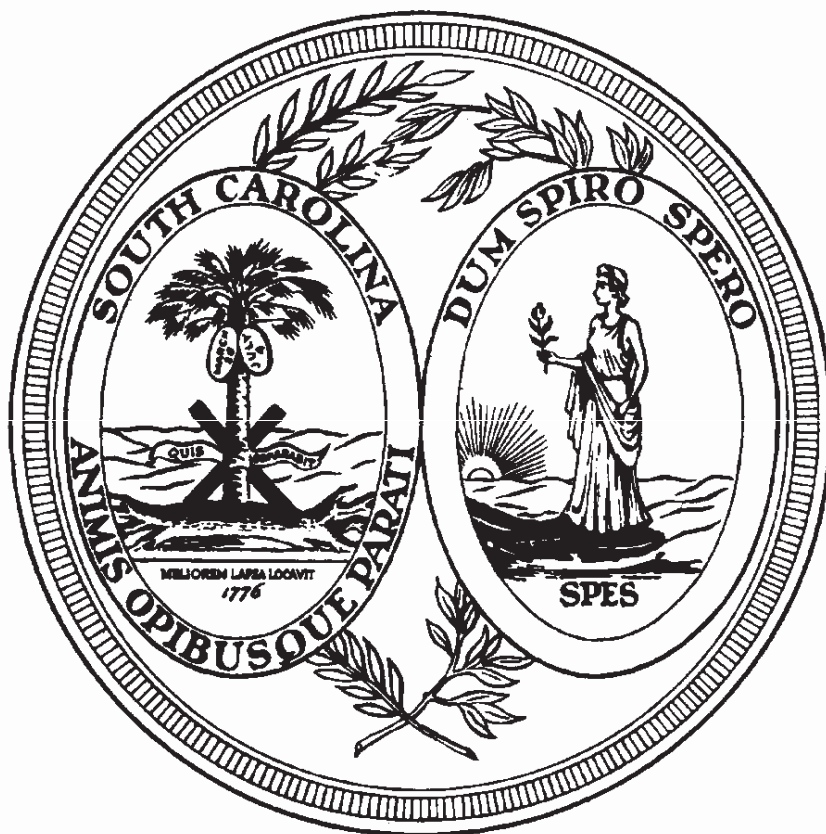


# South Carolina Residential Construction Standards



The Residential Builders Commission of the South Carolina Department of Labor, Licensing and Regulation adopted the Residential Standards as the Guidelines by which all investigations shall be conducted, as approved July 26, 1995 and revised October 29, 1997.

**Adopted by the Commission on February 18, 1998.**

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## APPLICABLE TIME LIMITS

**The Commission, under normal conditions, will inspect for code violations during the time limits shown below. Contractor responsibility does not extend to items, which have been subject to owner neglect, modification, or abnormal use.**

**Defects in appliances, fixtures and heating/air conditioning equipment, properly installed by the contractor, shall be limited to the manufacturer's warranty.**

**Nothing in this section creates a warranty or limits a warranty.**

The following classifications shall be open to inspection for code violations for the first twenty-four months:

1. Grading, fill and other site work
2. Masonry and concrete\*
3. Carpentry and wood products\*
4. Insulation
5. Moisture
6. Doors and windows
7. Finishes: paint, stain, wallpaper, carpet, tiles, flooring, etc.
8. Cabinets and countertops
9. Drywall and plaster
10. Roofing\*
11. Siding
12. Windows and skylights
13. Caulking and weatherstripping
14. Hardware

The following classifications shall be open to inspection for code violations for the first forty-eight months:

1. Heating and air conditioning
2. Plumbing
3. Electrical

Major structural damage, including structural damage to systems noted above by an asterisk\*, and building which are unsafe, unsanitary, do not provide adequate egress, constitute a fire hazard, or are otherwise dangerous to human life shall be inspected for code violations during the first eight years only.

Adopted by the Commission on June 8, 2005.  
Revised July 1, 2005

## APPLICABLE BUILDING CODES

Building codes change from time to time. For the purpose of these Standards, the building codes governing the structural, mechanical, plumbing, electrical, gas and energy requirements for new construction, that was adopted and in effect at the time the house was constructed, must be used to determine compliance. Inspection of specific components or systems by registered inspectors of the governmental authority having jurisdiction will provide evidence of presumed compliance.

If building codes were not adopted and in effect at the time the house was constructed, the following will apply to all structural, mechanical, plumbing, electrical, gas and energy systems:

1. If the house was constructed prior to July 1, 2002;
  - A. The 1995 edition of the CABO One and Two Family Dwelling and Model Energy Codes; or,
  - B. The 1997 edition of the Standard Building.
  - C. Mechanical, Plumbing and Gas Codes, the 1996 edition of the National Electrical Code and the CABO Model Energy Code.
2. If the house was constructed after July 1, 2002;
  - A. The edition of the International Residential Code adopted and in effect at the time construction was started.

Adopted by the Commission on June 8, 2005.  
Revised July 1, 2005

## INTRODUCTION TO CONSTRUCTION STANDARDS

The Construction Standards are intended to specify the minimum performance standards for construction of homes and to set forth the basis for determining the validity of all home buyer complaints related to defective materials and workmanship during the initial one-year warranty period.

Only the most frequent defects of concern to the industry have been addressed in the Construction Standards set forth in the following pages. It is not possible to discuss every conceivable situation that can occur in building. Because of the limitless combinations that can be incorporated into a home, infinite conditions can occur. This manual describes the most common and repetitive situations. Likewise, the validity of any homeowner's complaint for defects for which a standard has not yet been addressed herein shall be determined on the basis of good industry practice, which assures quality of materials and workmanship, and any conciliation or arbitration of such complaints shall be conducted accordingly.

The following Construction Standards are expressed in terms of performance standards. Noncompliance with the performance standard calls for corrective action by the Builder. The format is designed for easy comprehension by both layman and builder as follows:

1. Common Defect or Problem – a brief statement in simple terms of the problems to be considered.
2. Performance Standard – Performance Standards relating to a specific deficiency.
3. Builder Repair Responsibility – statement of the corrective action required of the builder to repair the deficiency or any other damage resulting from making the required repair. The method of correction to meet the industry standard is at the builder's discretion. Alternatives for making acceptable repairs exist in most cases.

**There are many items that are homeowner maintenance responsibilities. To assure themselves of long, comfortable use of their home and protection of their investment, homeowners should learn about and act on those maintenance responsibilities.**

## CARPENTRY STANDARDS - ROUGH

(Rough Carpentry, Lumber & Truss)

Framing or rough carpentry provides the skeletal structure which includes fabrication of wood portions of the floor systems, exterior walls, interior partitions and roof which are built on and supported by the foundation.

The exterior wall framing is designed to support the vertical load from the floors and roof and to resist lateral loads resulting from winds. Interior partitions may or may not be load bearing. The roof is designed to support its own weight plus that of anticipated loads from snow, ice and wind. The framing is quality controlled by the building code and subject to building inspection when the entire framed structure can be viewed.

Wood framing can be fabricated on or off a job site, or a combination of both. Even when most of the framing is done on site, there has been a trend to use premanufactured components, such as roof or floor trusses, in lieu of the more conventional joist and rafter construction. As a natural product, wood will respond to humidity and temperature conditions and can cause shrinking, twisting or warping of the framing material. Some of these conditions can be controlled or minimized; others are due to the nature of wood itself.

In single family construction, lumber type and grade, span, spacing and load bearing capacities are tightly controlled by code, while the carpentry foreman uses his own judgment in determining the exact layout. Hence, the accumulation of tolerances of several inches in overall dimension is not unusual.

1. Common Defect or Problem

Floors squeak.

Performance Standard

Floor squeaks are common to new construction and a squeak-proof floor cannot be guaranteed.

Builder Repair Responsibility

Builder should try to minimize the floor squeaks and must correct if caused by a construction defect. It should be noted that a second floor repair would be surface nailing in carpeted areas and impossible in vinyl or ceramic areas.

2. Common Defect or Problem

Uneven or unlevel floors

Performance Standard

Floors shall not be more than ¼” out of plane or level in wood, vinyl and ceramic areas or ½” out of plane in carpeted areas within any 32” measurement when measured parallel to the joists.

Builder Repair Responsibility

Builder to repair to meet performance standard

3. Common Defect or Problem

Crowned floor joist.

Performance Standard

Floors shall not be more than ¼” out of plane or level in wood, vinyl and ceramic areas or ½” out of plane in carpeted areas within any 32” measurement when measured parallel to the joists.

Builder Repair Responsibility

Builder to repair to meet performance standard

4. Common Defect or Problem

Seams or ridges appear in the resilient flooring due to subfloor irregularities.

Performance Standard

In the natural settling and shrinkage process, some mismatch of the subfloor may exhibit and mirror itself as ridges or depressions showing on the surface goods. This can be minimized by the customer in his selection of an embossed pattern in a darker color. In particular, lighter solid colors and/or smooth vinyl surfaces mirror any minor variations of the subsurfaces to which they are applied and emphasize this ridging. If the ridge or depression effect exceeds 1/8” and cannot be corrected from below, the resilient floor must be corrected. The ridge measurements should be made by measuring the gap created when a 6” straight edge is placed tightly 3” on each side of the defect and the gap measured between the floor and the straight edge at the other end.

Builder Repair Responsibility

If ridges exceeds standard, builder to remove the sheet goods in the minimum area where the joint will not be readily visible when repaired, re-nail the subflooring, sand smooth and/or fill gap and replace the sheet goods. Owner should note that there may be a mismatch in materials due to time or dye lot variations. If the material is unavailable due to discontinuation, unless the owner will accept a repair



with as closely matching materials as is currently available or correction by some other means, builder should credit the owner 1 ½” times the cost to repair if the material were available. This would be 1½ times the minimum service charge, plus the additional hourly labor charge and the material cost needed to make the repair.

5. Common Defect or Problem

Bowed walls.

Performance Standard

All interior and exterior walls have slight variances on their finished surfaces. Walls should not bow more than ¼” out of line within any 32” horizontal or vertical measurement.

Builder Repair Responsibility

Builder will repair to meet performance standard.

6. Common Defect or Problem

Out of plumb walls

Performance Standard

Walls should not be more than ¼” out of plumb for any 32” vertical measurement.

Builder Repair Responsibility

Builder will repair to meet performance standard.

7. Common Defect or Problem

Out of plumb windows or windows do not operate.

Performance Standard

Windows must operate with reasonable ease as designed.

Builder Repair Responsibility

Builder to repair to be operable

8. Common Defect or Problem

Truss lift

Performance Standard

Truss lift occurs during the heating season and normally returns back down in the summer months. Builder is not responsible for inadvertent cutting of tape where wallpapering may have been done.

Builder Repair Responsibility

This is to be corrected only during the summer months after the first heating season, only if first reported during year one. If the problem reoccurs in the next heating season, and gap exceeds 1", then additional methods must be taken to correct the problem.

9. Common Defect or Problem

Cracked trusses

Performance Standard

Builder to contact truss manufacturer to make sure truss conforms to its engineering.

Builder Repair Responsibility

Repair as per recommendation of truss manufacturer

10. Common Defect or Problem

Bowed ceilings

Performance Standard

All interior and exterior frame walls or ceilings have slight variations on the finished surfaces. Bowing should not be visible so as to detract from the finished surface. Ceilings, which are bowed more than 1/2 inch within a 36-inch measurement running parallel with ceiling joist, shall be excessive.

Builder Repair Responsibility

Ceiling bowed in excess of the performance standard shall be corrected.

## CARPENTRY STANDARDS - FINISH

(Finished Carpentry, Plumbing, Cabinetry, Millwork and Countertops)

Wood and wood-like products are the basic materials used in finished carpentry. Wood is a natural product with individual grain variations in each species of wood. The matching of grain is not a standard procedure and may possibly be accomplished only as a specific contractual agreement between the owner and builder and with the careful selection of matching panels by the supplier. The variations in wood separate it from man-made products. One of the wonderful characteristics of wood is the difference in each piece.

Over the past several years, a marked change has taken place in the area of finished carpentry, paneling and millwork. Considerably less of the labor is being done on the site. Almost all millwork, paneling, cabinetry, countertops and doors are purchased by the builder as a completed product and are warranted by the builder according to manufacturer's standards.

Scratches, chips, gouges or nicks should be noted by the owner at the time of the preoccupancy inspection. To maintain the beauty of the wood and wood products, wood should be cared for by the owner much like furniture. Builder should caution owner to only use products recommended by the manufacturers when cleaning and maintaining wood products and also in caring for countertops.

During the initial building stabilization period (first heating and cooling seasons), it is not unusual for doors to warp slightly or twist and alternately stick or not close. Warping, shrinking and swelling of wood and wood-like products can occur due to temperature and humidity changes.

If painting, varnishing and/or staining are to be done by the owner, it should be finished at the earliest possible opportunity. Their primary purpose is preservation, protecting the surfaces and edges from weather and moisture penetration. Owner should be made aware that all surfaces must be sealed on all six sides. If a door or drawer fails and if it was not sealed on all six sides and the owner did or contracted for his own staining, then the builder is not responsible to make the repair. Filling and sanding of minor imperfections, nail holes and splits are the responsibility of the painter. If the builder is responsible for the painting and/or staining, samples or names of the paint products should be left with the owner for minor touch-ups.

1. Common Defect or Problem

Interior doors, closet doors, cabinet doors, or drawers warp and cannot be closed or will not stay closed.

### Performance Standard

- a. The owner should note that during the initial building stabilization period, it is not unusual for doors to warp or twist and alternately stick or not close as the home goes through a settling and drying period, especially over the first heating season. The builder is obligated only to make replacements after this initial stabilization period, since often the door straightens during this process. Doors MUST be sealed on all six sides by the person contractually responsible for painting/staining.
- b. All interiors doors, closet doors, cabinet doors or drawers whose warpage exceeds the National Woodwork Manufacturers Association Standards (1/4" in most cases) and where the warp cannot be corrected by adjustment of either jambs, stops, and/or hinges and cabinet catches to properly latch after the initial stabilization period of the building, at the end of the first year, shall be replaced by the builder. Doors MUST be sealed on all six sides by the person contractually responsible for painting/staining.

### Builder Repair Responsibility

Adjust, upon request of the owner, one time only, preferably at the end of the warranty period, any doors and drawers that fail to operate properly. Replace any doors or drawers, which cannot be corrected to be within acceptable tolerance after stabilization. Refinish as necessary if staining was part of the builder's contract.

## 2. Common Defect or Problem

Garage to house solid core door warps

### Performance Standard

Garage to house doors are more subject to weather conditions and thus these doors may warp, but will tend to come back to their original state. This can be a continual occurrence with seasonal changes.

### Builder Repair Responsibility

If the door does not come back in summer to seal, builder to replace (provided door was sealed on all six sides if staining was owner's obligation). Refinish as necessary if staining was part of the builder's contract.

## 3. Common Defect or Problem

Warpage or non-closing of exterior doors (except storm doors)

### Performance Standard

Because of the security provided by these doors, the doors must be adjusted or corrected as required.

Builder Repair Responsibility

During the first year, if the security of the building is jeopardized, correct as requested by the owner to maintain the security of the building. Replace any exterior doors whose permanent warpage exceeds the standards referred to in item #1 after the stabilization period. Refinish as necessary if painting and staining was part of the builder's contract. If painting is part of owner's contract they are cautioned to finish doors on all six surfaces at the earliest possible opportunity to prevent weather deterioration and warpage of the doors and to maintain a warranty on the door.

4. Common Defect or Problem

Cabinet doors do not align properly or there is a gap between door and cabinet frame.

Performance Standard

Space between doors where doors butt should not exceed 1/8". Top or bottom alignment should not exceed 1/16". Separation between the door and the frame should not exceed 1/4".

Builder Repair Responsibility

Builder to repair if any of the above conditions exceed acceptable tolerance.

5. Common Defect or Problem

Loosening or separation of veneer on doors and cabinet doors

Performance Standard

Veneer should not crack or separate during the first year's warranty provided the doors have been properly finished. If painting is to be done by the owner, they are cautioned to finish all six surfaces of the veneer doors at the earliest possible opportunity to prevent weathering deterioration of the door which can lead to delamination or warpage.

Builder Repair Responsibility

Builder should repair or replace any doors where the veneer has separated or delaminated during the first year of occupancy. Door replacement due to delamination is the owner's responsibility if the owner has not promptly followed through on his responsibility to finish the door or has not finished all six sides of the

doors. Builder to refinish only if painting or staining was part of the builder's contract.

6. Common Defect or Problem

Shrinkage or swelling of paneled doors, panels in cabinet doors and/or paneling.

Performance Standard

Panels will, due to the nature of wood products, shrink and expand and may expose unpainted or unstained surfaces.

Builder Repair Responsibility

None.

7. Common Defect or Problem

Panels or door graining and/or color do not match.

Performance Standard

Since wood is a natural product and the grain structure is unique for each piece of wood, the builder is only responsible for supplying the grades and types of lumber and millwork and paneling specified in the contract. Grain and color matching is not the industry standard.

Builder Repair Responsibility

None, unless matched lumber was specifically stated in the contract.

8. Common Defect or Problem

Scratches on glass in doors.

Performance Standard

Scratching is inherent in the added safety features that are mandated in glass doors.

Builder Repair Responsibility

None.

9. Common Defect or Problem

Millwork trim graining or color does not match.

Performance Standard

See #7

Builder Repair Responsibility

See#7

10. Common Defect or Problem

Gaps in miter joints.

Performance Standard

Gaps in miter joints should not exceed 1/16”.

Builder Repair Responsibility

Builder should repair any gaps exceeding 1/16”. If the owner is responsible for the staining portion of the contract, the owner is responsible for restaining. If staining was part of the builder’s contract, builder must restrain, if necessary.

11. Common Defect or Problem

Gouges, cracks, nicks or other material or workmanship imperfections.

Performance Standard

Nail pops, blisters and other such blemishes at the time the owner closes or takes occupancy of the home that are readily visible from a distance of six (6’) under normal lighting conditions are unacceptable.

Builder Repair Responsibility

Builder to replace millwork components with the above listed defects where the defect cannot be easily corrected through the use of sanding or filling, so long as these items were noted prior to occupancy. It should be noted that if the owner is responsible for the painting portion of the contract, the finishing work becomes the owner’s responsibility.

12. Common Defect or Problem

Splices of millwork material within the length of a wall.

Performance Standard

Splicing is permissible.

Builder Repair Responsibility

None.

13. Common Defect or Problem

Cabinets separate from wall or loosen.

Performance Standard

Provided the cabinet installation is secure, some shrinkage may occur which may appear to indicate a gap between the cabinets and their mounting surface. This is normal and requires no correction. However, if the cabinet is actually loose, the builder shall correct.

Builder Repair Responsibility

Correct any loose cabinetry from the mounting surface, except those due to shrinkage.

14. Common Defect or Problem

Countertops separate from wall.

Performance Standard

Acceptable tolerance is 1/8" in width.

Builder Repair Responsibility

Builder to caulk if gap is over 1/8".

15. Common Defect or Problem

Seams in laminate countertops raise.

Performance Standard

This will occur occasionally. Owner should keep seams sealed as water can penetrate.

Builder Repair Responsibility

None.

16. Common Defect or Problem

Exposed plastic laminate surfaces, laminate cabinetry and molded marble crack, chip, delaminate or are burned or scratched.



### Performance Standard

There should be no imperfections in exposed plastic laminate surfaces at the time the owner takes occupancy of the home. Any defects must be noted by the owner in writing at the preoccupancy inspection and should be corrected by the builder. In some rare cases there may be some latent defects in laminates, which would require adjustments by manufacturer.

### Builder Repair Responsibility

Correct defects noted at occupancy inspection. Defects occurring after that time are the owner's responsibility for correction since these surfaces are subject to owner's damage.

## CAULKING & WEATHER-STRIPPING STANDARDS

### Background

Weather stripping of doors and windows helps keep the home properly heated or cooled. Metal stripping should be free of dents and loose sections, and plastic or rubber, stripping should be glued tightly. The junction between windows, doors and exterior wall material (i.e. siding, brick) will need to be caulked to minimize air infiltration. Caulking will need to be maintained by the homeowner throughout the life of the home. It should be noted that some air infiltration is normal during high winds.

1. Common Defect or Problem

Caulking cracks.

Performance Standard

All types of caulk will dry out. Builder to remove old caulk and replace with new caulk at cracked areas one time during the first year. After the one repair, caulking becomes an owner maintenance responsibility.

Builder Repair Responsibility

Builder to repair to performance standard one time during the first year.

2. Common Defect or Problem

Caulking is missing.

Performance Standard

Builder is responsible to caulk all wood, wood to masonry, aluminum to wood and aluminum to masonry to local codes.

Builder Repair Responsibility

Repair to meet performance standard.

3. Common Defect or Problem

Air infiltration around doors and windows.

Performance Standard

Doors and windows are cold spot sources and some infiltration of air must be expected. Proper weatherstripping and insulating around these areas can minimize air passage. However, depending on the type of window (i.e. double hung and sliding windows will have more air infiltration than casement or stationary windows) and under certain temperature and wind conditions, some infiltration will be observed by the homeowner.

#### Builder Repair Responsibility

Builder to inspect and adjust poorly fitted weatherstripping. If draft comes around casings, builder to make sure insulation is in place around window wherever possible.

## DRYWALL AND PLASTER STANDARDS

### Background

In reviewing drywall and plaster problems, which occur during the first year of warranty, it is necessary to include some explanatory material on the nature of the material and its performance during and after the initial stages of construction.

Drywall is a relatively inflexible gypsum material, which is applied to the interior surfaces. Drywall and plaster are applied in sheets, which are nailed to the stud or joists for application. The sheets are then taped and the entire surface is sprayed and textured to produce a finished surface. In plaster, the final coats are trowelled on.

Because the drywall or plaster has been placed on lumber surfaces which are subject to shrinkage and warpage and which are not perfectly level and plumb, problems occur through stress and strain placed on drywall during the drying of the lumber which is inherent in the construction of a home.

In evaluating the need for drywall and plaster repairs, the general rule to be applied is, if the defect is readily noticed by visual inspection, it should be repaired. However, due to the initial shrinkage problem, which exists with the new home, it is impossible to correct each individual defect as it occurs, and for that matter is essentially useless to do so. The entire house will tend to stabilize itself near the end of the warranty period, and one repair should be made when necessary, preferably near the end of the 12<sup>th</sup> month after occupancy upon request by the homeowner. Repairs will be made no more than one time during the warranty period. All repairs should be made to within industry standards. Any reoccurrence beyond the warranty period becomes a homeowner's maintenance item.

Since drywall and plaster are finish materials, repairs will be slightly visible due to a color or texture mismatch after they have been made. The mismatch will be even more visible when a special textured finish has been employed. Repairs do not require repainting when they are applied on unpainted surfaces such as unpainted ceiling or when the builder did not contract for the painting. The builder will attempt to match the repair as closely as possible but the exact color match of the unpainted surface is impossible to achieve. Where the repair has been made on a painted surface, the builder will not be responsible for paint touch-up, provided color samples are left by the painter at the home, otherwise the builder shall be responsible to touch up the repair, but the owner should be cautioned that the color match will not be perfect.

1. Common Defect or Problem

Visual defects caused by normal shrinkage or nail pops, cracks, seam lines, ridging or cracked corner beads.

Performance Standard

Any of the above defects which can be readily determined by visual inspection (without lighting the defect from one direction) shall be repaired by the builder except where normal repainting will cover the defect as in the case of a hairline crack. Cracks not exceeding 1/16 inch in width are common in gypsum wallboard installations and are considered acceptable.

Builder Repair Responsibility

Repair to original finish as closely as possible. Repairs will be made no more than one time during the first year.

2. Common Defect or Problem

Defects caused by workmanship during installation such as blisters in the tape, excess compound in joints, or trowelling marks.

Performance Standard

Defects, which can be readily observed by visual inspection (without lighting the defect from one direction), are beyond the standard of industry except where normal repainting will cover in the defect.

Builder Repair Responsibility

Correct such defects as in (1) above.

3. Common Defect or Problem

Photographing of mudded areas (tape lines, nails, corners).

Performance Standard

The paint on the wallboard surface has a different texture than on the taped and mudded areas.

Builder Repair Responsibility

Photographing is not common, but when it is readily visible (without lighting the defect from one direction), it is the builder's obligation to repair.

4. Common Defect or Problem

Uneven texturing.

Performance Standard

As textures are composed of natural materials, there will be some variation. Blemishes should not be visually apparent.

Builder Repair Responsibility

Repair finish to be uniform to standard.

5. Common Defect or Problem

Separation at ceiling due to trusses lifting.

Performance Standard

Truss lift occurs during the heating season and normally returns back down in the summer months. Builder is not responsible for inadvertent cutting of tape where wallpapering may have been done by the homeowner.

Builder Repair Responsibility

This is to be corrected only during the summer months after the first heating season. If the problem reoccurs in the next heating season and gap exceeds 1", then additional methods must be taken to correct the problem (i.e. the use of a molding at the ceiling).

6. Common Defect or Problem

Uneven angular joints or corners.

Performance Standard

Defects, which can be readily determined by visual inspection, are to be repaired by builder only prior to decorating. The use of a rounded corner is acceptable at angles.

Builder Repair Responsibility

Builder to repair to be visually acceptable.

7. Common Defect or Problem

Texturing on repairs is uneven.

Performance Standard

Since drywall and plaster are finish materials, repairs will be slightly visible due to a color or texture mismatch after they have been made.

Builder Repair Responsibility

Every attempt should be made to uniformly match the texture.

## ELECTRICAL STANDARDS

### Background

Electrical system installation is performed by licensed contractors and in accordance with state and national electrical codes. The electrical code dictates safety requirements predominantly to prevent fires and minimize the chance of personal injury.

The builder cannot be responsible for what an owner plugs into an electrical outlet. Builder is also not responsible for what an owner has added to the electrical system.

1. Common Defect or Problem

Outlets and switches do not work.

Performance Standard

All outlets and switches must be operative.

Builder Repair Responsibility

Repair or replace wiring or replace defective outlets and switches to make units work properly.

2. Common Defect or Problem

Lights and fans do not work.

Performance Standard

Wiring to fixture must be operative.

Builder Repair Responsibility

Builder to repair defective wiring to lights and fans. If it is found that the fixture is inoperative, it would fall under a manufacturer's warranty. If the fixture was builder supplied, the builder would be responsible for the service call. If the fixture was owner supplied, the owner would pay the service call.

3. Common Defect or Problem



Lights dim or flicker in parts of building.

Performance Standard

Lights may dim or flicker during starting of some motor driven equipment.

Builder Repair Responsibility

Check wiring for installation per standards of State Electrical Code. If flickering/dimming does not occur when motor driven equipment is turned off, the owner should notify the builder to check if the wiring is per Code. If nothing is found, the owner should contact the electric power company for possible defects in supply source.

4. Common Defect or Problem

Lights dim/flicker in entire building.

Performance Standard

Lights should not flicker throughout entire building at one time.

Builder Repair Responsibility

Builder should first check internal wiring as necessary. If internal wiring is proper, owner should then notify the electric power company for possible defects in supply source.

5. Common Defect or Problem

Circuit breakers trip out.

Performance Standard

Circuit breakers should not disengage under normal usage except in cases where they may be an overload of portable appliances. (See #6 re: GFI circuits).

Builder Repair Responsibility

If it is determined that there is not an overload of portable appliances, builder to repair or replace breaker.

6. Common Defect or Problem

Ground fault interruptor (GFI) circuit trips frequently.

Performance Standard

Ground fault interruptors are sensitive safety devices installed into the electrical system to provide protection against electrical shock. These sensitive devices can be tripped very easily.

Builder Repair Responsibility

Builder shall install ground fault interruptor in accordance with approved electrical code. Tripping is to be expected and is not covered, unless due to a construction or product defect.

7. Common Defect or Problem

Fluorescent lights hum.

Performance Standard

Some fluorescent ballast will hum.

Builder Repair Responsibility

Excessive hum must be checked by an electrician.

8. Common Defect or Problem

Door bells/chimes do not work.

Performance Standard

Door bells/chimes carry a one-year warranty and should operate.

Builder Repair Responsibility

Builder to repair or replace if door bell/chimes supplied by builder. Owner is responsible if owner supplied.

9. Common Defect or Problem

Drafts from electrical outlets.

Performance Standard

Electrical junction boxes on exterior walls may produce airflow whereby the cold air can be drawn through the outlet into a room.

Builder Repair Responsibility

None. Owner can place a foam type insulation behind cover plate to cut down the infiltration.

10. Common Defect or Problem

Water leaks into basement at builder installed conduits going through walls.

Performance Standard

Water leaks into basement should not occur at conduits assuming owner has properly graded around foundation.

Builder Repair Responsibility

Builder to repair, providing grading is not at fault.

## FIREPLACE STANDARDS

### Background

Fireplaces fall into two categories. The first being “full masonry.” This type of fireplace is constructed with a masonry flue, exterior veneer and interior firebox. The second is “prefabricated”, having a metal pipe chimney and a manufactured metal firebox

1. Common Defect or Problem

Fireplace or chimney does not draw properly.

Performance Standard

A properly designed and constructed fireplace and chimney shall function properly. It is normal to expect that high winds can cause temporary negative draft situations. Similar negative draft situations can also be caused by obstructions such as large branches of trees too close to the chimney.

Builder Repair Responsibility

Builder will determine the cause of malfunction and correct, if the problem is one of design or construction of the fireplace.

2. Common Defect or Problem

Firebox paint changed by fire.

Performance Standard

Heat from fires can alter finish.

Builder Repair Responsibility

None.

3. Common Defect or Problem

Cracked firebrick and mortar joints in firepot.

Performance Standard

Expansion and contraction will cause cracking.

Builder Repair Responsibility

None, unless crack exceeds 1/8" width. Builder will then tuckpoint.

4. Common Defect or Problem

Rust on the exterior of the fireplace or rust on the damper.

Performance Standard

As rust can form from condensation or moisture within a home, the owner should use a rust-removing product to remove rust.

Builder Repair Responsibility

None.

5. Common Defect or Problem

Cracks in chimney and fireplace caps.

Performance Standard

Chimney and fireplace caps should be checked periodically by the owners for hairline cracks in the concrete and brick, and especially next to the flue. These cracks are caused by shrinkage and severe weather conditions and should be caulked with an elastic type caulking compound or tuckpointed with mortar or cement. Failure to do this could result in moisture getting into the chimney, freezing and cracking the flue material or the face of the brick or stone.

Builder Repair Responsibility

None, unless crack exceed 1/8" in width. Builder will then tuckpoint.

6. Common Defect or Problem

Fireplace fans are noisy.

Performance Standard

Fans will make some noise due to the location of their installation but should not be excessively noisy. Fireplace fans are covered by a one-year manufacturer's warranty. Noise level is not to exceed manufacturer's acceptable noise level.

Builder Repair Responsibility

Builder to inspect and repair if fan is touching any party of fireplace.

7. Common Defect or Problem

Cracks in mortar joints of brick or other masonry walls or veneers.

Performance Standard

Small hairline cracks due to shrinkage are common in mortar joints in masonry construction. Cracks greater than 1/8" in width are considered excessive.

Builder Repair Responsibility

Builder will repair cracks in excess of Performance Standard by pointing or patching. These repairs shall be made at the end of the first year of the warranty period. Owner should be aware that some variation between old and new mortar color will occur.

8. Common Defect or Problem

Chimney separation from structure to which it is attached.

Performance Standard

Newly built fireplaces will often incur slight amounts of separation. Separation shall not exceed 1/2" from the main structure in any 10' vertical measurement.

Builder Repair Responsibility

Builder will determine the cause of separation and correct if standard is not met.

## FLOORING FINISH STANDARDS

### Background

Finished flooring work is subject to the same phenomena during construction of a home that applies to drywall and plaster, namely shrinkage and warpage of the surface to which it is applied, settling of the home, expansion and contraction of the subsurface to which it is applied with moisture and temperature variations. Most of the problems which occur affecting flooring are a result of these natural phenomena occurring during the stabilization of the home during the initial warranty period and are mirrored in the floor coverings.

Resilient flooring is a manufactured bought as a finished product, either in the form of squares or sheet goods, which is applied by the appropriate trade, predominantly with mastic directly over the surface prepared to accept it.

The following finished flooring standards are contained separately in this section:

1. Carpeting
2. Ceramic or Quarry Tile
3. Resilient Flooring
4. Wood Flooring

## CARPETING STANDARDS

### Background

Carpet installation may often be contracted assumed by the owners or may be done by the builder as an allowance item. A standard carpet installation will use seaming techniques to join the material and these seams will be somewhat visible. Carpeting is subject to normal manufacturing tolerance and most particularly to lot variations affecting color, texture and pattern. From time to time, patterns are discontinued, which makes it impossible to exactly duplicate the material; hence it is recommended that the owner save any scrap material from the carpet installation for any future repairs that may be required because of burns, spots, etc.

1. Common Defect or Problem

Open carpet seams.

Performance Standard

Carpet seams will show. However, no visible gap is acceptable.

Builder Repair Responsibility

Builder will correct any open gaps.

2. Common Defect or Problem

Carpeting becomes loose, seams separate or stretching occurs.

Performance Standard

Wall to wall carpeting, installed as the primary floor covering, when stretched and secured properly, shall not come up, become loose, or separate from its point of attachment.

Builder Repair Responsibility

Builder will re-stretch or re-secure carpeting as needed, if original installation was performed by the builder.

3. Common Defect or Problem

Spots on carpet, minor fading

Performance Standard



Exposure to light may cause spots on carpet and/or minor fading. Spots, if noted prior to occupancy in writing, would be the builder's responsibility.

Builder Repair Responsibility

None, unless noted prior to occupancy in writing. Builder would then clean or repair.

## CERAMIC AND QUARRY STANDARDS

### Background

Ceramic or quarry tile is also used as a finished flooring surface and in some counter and wall applications. Hard tile is supplied as a finished product and is subject to lot variations. The tiles may be attached to the subfloor, finish floor, or wall surface with mastic (glue) or directly set into a mud base (special concrete mix). After the tile is set, grout is applied to fill the joints. Grouting will be affected by the natural settling and shrinkage of the home. Regrouting will be required by the homeowner as normal maintenance throughout the life of the home. With colored grout, it is virtually impossible to match colors should a repair of grout be desired.

Ceramic tile installation may be performed as an allowance item. Installation and tile costs may vary with tile size, shapes and patterns selected by the homeowner.

In all cases of finished floor covering materials, the owner is advised to follow the manufacturer's suggested recommendations for maintenance and cleaning.

Narrow tipped or stiletto high heels will damage ceramic and quarry tile flooring and would not be the builder's responsibility for repair. Because of this and the wear and tear caused by normal use of the floor, no reasonable repair can be expected to restore perfectly the flooring to a new, unused condition.

1. Common Defect or Problem

Cracks appear in grouting of ceramic tile joints or at junctions with other materials such as a bathtub.

Performance Standard

Cracks at the joints of ceramic tile are commonly due to the settling process, especially between the horizontal and vertical surfaces or the butting of dissimilar materials. As such, they require repointing.

Builder Repair Responsibility

Ceramic tile should be repointed when necessary, only once during the warranty period, preferably near the end of the warranty period. After one repointing, it becomes an item of owner's maintenance.

2. Common Defect or Problem

Ceramic tile cracks or become uncemented

Performance Standard

Tile should not crack or become loose during warranty period under normal wear. It should be noted that ceramic tile can crack if something is dropped on the floor and type of cracking is not warranted.

Builder Repair Responsibility

Replace any cracked tiles and recement any loose tiles, unless the defects were caused by owner's negligence. (Owner is cautioned that there may be a color mismatch if no extra tiles are available).

3. Common Defect or Problem

Ceramic tile grout discolors.

Performance Standard

Normal efflorescence is a condition, which can be cleaned with a special solution or will disappear in time. Grout is porous and can be sealed by the homeowner to prevent dirt penetration.

Builder Repair Responsibility

None.

4. Common Defect or Problem

Mildew forms on tile or grout.

Performance Standard

This is a homeowner's maintenance responsibility.

Builder Repair Responsibility

None.

5. Common Defect or Problem

Color variations in tile.

Performance Standard

Color variations are inherent in all ceramic glazes fixed clay products.

Builder Repair Responsibility

None.

6. Common Defect or Problem

Tile style or pattern no longer available when repair called for.

Builder Repair Responsibility

Unless owner will accept a repair with as closely matching materials as is currently available or correction by some other means, builder should credit the owner 1 ½ times the cost to repair if the material were available. This would be 1 ½ time the minimum service charge, plus the additional hourly charge and material cost estimate.

7. Common Defect or Problem

Floors squeak.

Performance Standard

Floor squeaks are common to new construction and a squeak-proof floor cannot be guaranteed.

Builder Repair Responsibility

Builder should try to minimize the floor squeaks and must correct if caused by a construction defect. It should be noted that second floor repair would be a surface nailing in carpeted areas and impossible in vinyl or ceramic areas.

## RESILIENT FLOORING STANDARDS

### Background

Resilient flooring includes inlaid, roto-vinyl, seamless sheet vinyl, and resilient vinyl composition tile.

All resilient flooring is subject to normal manufacturing tolerances and most particularly to dye lot variation affecting color, texture, and pattern. From time to time, patterns are taken off the market, which makes it impossible to exactly duplicate a material when none is available. The most common problem occurring when partial replacement is called for in repair is the inability to match closely in color due to variation from dye lot to dye lot. In the replacement or correction of resilient flooring, the owner must be prepared to accept a variation in dye lot, when the pattern is still in existence and is cautioned that a seam may show. When a repair is made, the smallest possible area should be repaired. Although the builder will attempt to match colors as closely as possible, the owner should note that the wax or vinyl dressing build-up on the existing areas, light variations, atmospheric conditions and other chemical reactions will produce a color variation, even within within the same dye lot. The owner can minimize this variation by removing any build-up and thoroughly cleaning the floor according to the flooring manufacturer's recommendations. Likewise, the color variations will become less noticeable with subsequent dressings and use of the floor.

The nature of resilient flooring makes possible permanent deformation of the surface when subject to high loads which can be exerted by furniture with improper floor protectors or no protectors at all. Manufacturer recommended protectors are a necessity. The protectors must rest flat on the floor, not at an angle. The maximum surface load per square inch must not exceed 75lbs. Narrow tipped or stiletto high heels will damage vinyl tile and all sheet vinyl flooring and would not be the builder's responsibility for repair. Because of this and the wear and tear caused by normal use of resilient flooring, no reasonable repair can be expected to restore perfectly the resilient flooring to a new, unused condition.

Resilient flooring is a manufactured product bought as a finished product, either in the form of squares or sheet goods, which is applied by the appropriate trade, predominantly with mastic directly over the surface prepared to accept it.

1. Common Defect or Problem

Nail pops appear on the surface of resilient flooring.

Performance Standard

All nail pops should be repaired.

Builder Repair Responsibility

Correct all nail pops which have not broken the surface of the goods by driving the nails back into place. Replace any areas where the nail pop has broken the surface. Replace sheet goods in the minimum area where the joint will not be readily noticeable where the nail pop broke the surface.

2. Common Defect or Problem

Seams or ridges appear in the resilient flooring due to subfloor irregularities.

Performance Standard

In the natural settling and shrinkage process, some mismatch of the subfloor may exhibit and mirror itself as ridges or depressions showing on the surface goods. This can be minimized by the customer in his selection of an embossed pattern in a darker color. In particular, lighter solid colors and/or smooth vinyl surfaces mirror any minor variations of the subsurfaces to which they are applied and emphasize this ridging. If the ridge or depression effect exceeds 1/8 " and cannot be corrected from below, the resilient floor must be corrected. The ridge measurements should be made by measuring the gap created when a 6" straight edge is placed tightly 3" on each side of the defect and the gap measured between the floor and the straight edge at the other end.

Builder Repair Responsibility

If ridge exceeds standard, builder to remove the sheet goods in the minimum area where the joint will not be readily visible when repaired, re-nail the subflooring, sand smooth and/or fill gap and replace the sheet goods. Owner should note that there may be a mismatch in materials due to time difference or dye lot variations. If the material is unavailable due to discontinuation, unless the owner will accept a repair with as closely matching materials as is currently available or correction by some other means, builder should credit the owner 1 1/2 times the cost to repair if the material were available. This would be 1 1/2 times the minimum service charge, plus the additional hourly labor charge and material cost need to make the repair.

3. Common Defect or Problem

Resilient flooring lifts, bubbles, or becomes unglued at joint.

Performance Standard

Resilient flooring should not loosen during the normal warranty period unless caused by the owner's negligence or excessive use of water.

Builder Repair Responsibility

Providing edges are still intact, resecure the material. If not replace the minimum area as per standard #2.

4. Common Defect or Problem

Shrinkage gaps show in resilient flooring

Performance Standard

Gaps shall not exceed 1/16" in width in vinyl to vinyl joints. However, where dissimilar materials abutt, larger gaps may appear.

Builder Repair Responsibility

Correct to meet standard.

5. Common Defect or Problem

Flooring discoloration.

Performance Standard

Certain conditions and substance such as heat, oil, fertilizers, asphalt from driveways and driveway sealers with an asphalt or coal tar base, and some carpet dyes can cause permanent stains especially in traffic areas. The owners are also cautioned that the use of certain latex or rubber back throw rugs can cause discoloration of the resilient flooring due to a chemical reaction that occurs.

Builder Repair Responsibility

This is not a manufacturing defect nor the builder's responsibility, but is the owner's responsibility to protect these areas with doormats or proper rugs at each entrance. There are certain instances in which discoloration may be warranted by the manufacturer. Owner should contact the manufacturer for a determination under their warranty.

6. Common Defect or Problem

Fading of color of resilient flooring.

Performance Standard

Exposures to excessive direct sunlight through glass sliding doors, for example, can cause fading or discoloration.

Builder Repair Responsibility

This is not a manufacturing defect nor the builder's responsibility, but is the owner's responsibility to protect these areas by the use of drapes or blinds during times of direct sunlight exposure. Resilient flooring is no different in this instance than any drapes, furniture or carpeting in the home.

7. Common Defect or Problem

Heel marks, burns, scratches, scuffs and indentations on resilient flooring.

Performance Standard

All of the above items are caused by the owner use and abuse.

Builder Repair Responsibility

None, unless problems are relayed to the builder in writing prior to occupancy or noted during walk-through. If builder is notified prior to occupancy or at walk-through, it is builder's responsibility to repair. If it occurs after that time, it is the responsibility of the homeowner.

8. Common Defect or Problem

Wear on surface or loss of sheen on resilient flooring.

Performance Standard

Depending on the type of product, owner to refer to manufacturer's warranty.

Performance Standard

Builder Repair Responsibility

None

9. Common Defect or Problem

Floors squeak

Performance Standard

Floor squeaks are common to new construction and a squeak-proof cannot be guaranteed.

Builder Repair Responsibility

Builder should try to minimize the floor squeaks and must correct if caused by a construction defect. It should be noted that second floor repair would be surface nailing in carpeted areas and impossible in vinyl and ceramic areas.



## WOOD FLOORING STANDARDS

### Background

Wood flooring, as a finished surface, is applied directly over the subfloor. Wood flooring, while predominantly hardwood, may occasionally be softwood. Hardwood is generally preferred because of its better wearing qualities and the resistance to abrasions. Wood floorings may be either pre-finished or job-finished. All wood floors are subject to shrinkage, as a natural occurrence. Both stains and sealers on job-finished floors may require maintenance different from that of pre-finished floors. It should be noted that due to climate and humidity changes, wood floors may be subject to gapping.

1. Common Defect or Problem

Gaps in wood floor.

Performance Standard

It must be understood that gapping is a normal occurrence during the heating season. Repairs should then be made during the summer so a proper correction can be made because warm, humid weather will cause the floor to expand. Gaps in excess of 1/8" in summer are to be corrected.

Builder Repair Responsibility

Builder to repair gaps in excess of 1/8"

2. Common Defect or Problem

Wearing of finish on wood floor.

Performance Standard

Elements of nature, moisture, and driveway materials may cause the finish on wood floors to wear faster. The homeowner should maintain their flooring to prevent this condition.

Builder Repair Responsibility

None

3. Common Defect or Problem

Finish is uneven on wood floors

Performance Standard

Slight variations may appear in the finish, but must not be readily visible.

Builder Repair Responsibility

Builder to repair/replace if visibly uneven

4. Common Defect or Problem

Cupping of hardwood floors.

Performance Standard

Cups in strip hardwood floorboards shall not exceed 1/16 inch in height in a 3-inch maximum span measured perpendicular to the long axis of the board.

Builder Repair Responsibility

Builder to repair or replace any boards that have cupped in excess of the performance standard on hardwood floors. The Builder is not responsible for cupping caused by moisture beyond the control of the Builder. There is no warranty for cupping on a pine or soft wood floor.

5. Common Defect or Problem

Dents in wood floors

Performance Standard

This is a normal occurrence in wood floors due to high heels, etc., and must be noted to builder in writing at preoccupancy inspection.

Builder Repair Responsibility

None, unless noted in writing prior to occupancy, then builder to repair.

6. Common Defect or Problem

Fading of wood floors.

Performance Standard

Exposures to excessive direct sunlight through glass sliding doors, for example, can cause fading or discoloration.

Builder Repair Responsibility

This is not a manufacturing defect nor the builder's responsibility, but is the owner's responsibility to protect these areas by the use of drapes or blinds during times of direct sunlight exposure. This is no different than other fabrics such as furniture or carpeting in the home.

7. Common Defect or Problem

Floors squeak

Performance Standard

Floors squeaks are common to new construction and a squeak-proof floor cannot be guaranteed.

Builder Repair Responsibility

Builder should try to minimize the floor squeaks and must correct if caused by a construction defect. It should be noted second floor repair would be surface nailing in carpeted areas and impossible in vinyl and ceramic areas.

## GARAGE DOOR STANDARDS

### Background

The surface of hardboard used on garage doors is ideal for field applied coatings, since hardboard does not have any knots, grain raise, or other defects that typically shorten the coatings life. Hardboard used on garage doors is made from wood. As such, it must be properly coated initially and maintained if satisfactory performance is to be achieved from the hardboard door as well as the field applied coating.

If the homeowner does his own painting and staining, for the warranty to be effective, paint must be applied to inside and outside surfaces and on all edges, immediately after installation.

An inherent characteristic of flush doors is the possibility of bowing (either inward or outward). This is not considered a defect. Proper painting of the door, plus the use of paint other than a dark color, will minimize this possibility. (Dark paint does not deflect the heat of the sun as well as lighter paints do).

1. Common Defect or Problem

Bottom of overhead door does not fit to the floor.

Performance Standard

Door weather-stripping should fit flush to the floor.

Builder Repair Responsibility

Builder to scribe the bottom of the door to conform to the level of the concrete so Weather-stripping on bottom of door affects a seal.

2. Common Defect or Problem

Garage doors allow entrance of snow or water.

Performance Standard

Garage doors allow shall be installed as recommended by the manufacturer. Some entrance of the elements can be expected under severe weather conditions, if the door is not weatherstripped.

Builder Repair Responsibility

Builder will adjust or correct garage doors to meet manufacturers recommendations. If weatherstripped, door must seal out the elements.

3. Common Defect or Problem

Door does not fit tightly at the sides and top.

Performance Standard

A. If it is an unweatherstripped door, there may be some small gaps.

B. If the door is weather-stripped, the door should fit tight.

Builder Repair Responsibility

A. If the door is unweather-stripped; the builder has no repair responsibility.

B. If the door is weather-stripped; the builder is to repair.

4. Common Defect or Problem

Garage doors fail to operate under normal use.

Performance Standard

Garage doors shall operate properly.

Builder Repair Responsibility

Builder will correct or adjust garage doors as required, except where the cause is determined to result from homeowner abuse or negligence.

5. Common Defect or Problem

Garage doors sag.

Performance Standard

Due to the excessive weight of a panel door, some sagging may occur.

Builder Repair Responsibility

None, as long as it is within manufacturer's tolerance.

6. Common Defect or Problem

Split in door panel.

Performance Standard

Split panels shall not allow light to be visible through the door.

Builder Repair Responsibility

Builder will, if light is visible, fill split and match paint or stain as closely as possible if they did painting originally. This will be done only one time in the warranty period, preferably at the end of the first year.

## GRADING, GROUND REMOVAL, GRAVEL, AND FILL STANDARDS

### Background

It is the intention of this standard to assist in obtaining a uniform acceptable understanding of grading and related problems. The standard is not meant to supersede or substitute for other restrictions placed by agencies or communities. It is for this reason no mention is made as to FHA requirements or disputes that may arise as a result of similar agencies. Such agencies have written manuals or means of arbitrating such disputes.

Because this phase of construction dealing with the movement of earth is so broad and ambiguous, since each site is unique unto itself and subject to the most diverse contractual relationships, it is thus necessary to establish certain “ground rules” or definitions for phases of work.

If finished grading or landscaping is not included in the building contract, it is of absolute necessity the owner promptly follow through with his grading and landscaping responsibilities and maintain a positive slope away from the foundation, including refilling any settled backfilled and trenched areas. The lack of proper maintenance in this area may cause foundation failure that will not be covered by the builder.

### **Excavation**

To remove soil to the level and outline of the proposed footings in such a way as to permit material delivery for the mason to commence work. Excavated soil is normally cast (dropped on the property) around the foundation except where lot size, site conditions and/or elevation requires its removal. Trucking costs are the responsibility of the owner.

### **Hauling (Trucking)**

Hauling away excess ground or supplying and hauling in required fill, unless otherwise specified in the contract, is the responsibility of the owners.

### **Backfilling**

To fill the exterior around a foundation or in a trench using a bulldozer or other necessary mechanical equipment utilizing only the ground which was available from such excavation or trench. The purpose of backfilling is to improve working conditions for further construction; attempt to protect the foundation from the elements such as frost, water etc., reduce the hazards inherent to open basements or foundations and get the process of ground settlement started which could take three or more years depending upon the type of soil. Builder is not responsible for settling.

### **Rough Grading**

Using mechanical equipment, the grader provides drainage away from the foundation, in such a way to indicate approximate grades at the building, walks, patios, and driveways. This is normally done on an allowance specified in the contract. Builder is not responsible for settling.

### **Finish Grading**

Using mechanical equipment and the dirt on the site, the grader establishes the yard grade within two inches of final landscaped grade with respect to the building, walks, drive and adjoining properties. Depending on the terms of the contract this would ordinarily include the entire lot. This is normally contracted for by the owner and is the step just prior to landscaping.

### **Landscaping**

Using light machinery or hand labor the grader finishes establishment of final grade, sodding or seeding, and provides ornamental shrubbery, trees and other planting. This is normally contracted for by the owner.

### **Site, Drainage and Erosion**

Site drainage must comply with all applicable building codes in jurisdiction. All sites must be prepared initially to prevent or reduce erosion from excessive water run off. All contractual agreements made between parties will take precedents over guidelines. Homeowner maintenance is required after the possession of site.

#### 1. Common Defect or Problem

Settling of ground foundation, sewer or septic trenches and gravel-fill-in garage area after backfill operations.

#### Performance Standard

Backfilled ground will settle. In fact, it is the intent to permit settling before further grading is done.

#### Builder Repair Responsibility

To the extent provided in the building contract, the builder is to perform the initial backfilling.

Where the builder is not responsible by contract for finish grade or landscaping, the builder shall not be responsible for normal settling of backfilled or trenched areas.

Lines installed by the Builder that settle excessively shall be repaired by the builder during the first year.



## Owner's Responsibility

Unless otherwise specified by contract, fill in such depression as they occur or as soon as possible to avoid other related problems.

### 2. Common Defect or Problem

Wet basement walls after backfilling, due to insufficient slope away from the foundation when builder is responsible for backfill and/or rough grading only. "Wet" shall be defined as actual water running or trickling from, through or under the basement wall and onto the floor thus puddling or eventually finding the floor drain. Dampness of the walls particularly at the upper two (2) and lower (1) foot are common to new construction and should not be construed as "wet".

#### Performance Standard

Wet walls are usually a result of sunken areas around the foundation since the owner's grading hasn't been done. But even if there are no depressions, this is still not a builder responsibility since he is only doing the backfilling and/or rough grading. The subsequent proper grading and landscaping should eliminate damp or wet basements.

#### Builder Repair Responsibility

Backfill in accordance to item #1.

### 3. Common Defect or Problem

Wet basement walls due to insufficient slope and drainage away from foundation when builder has contracted for finish grading.

#### Performance Standard

While some dampness is normal, wall should not be wet as defined in item #2 above.

#### Builder Repair Responsibility

If landscaping is owner's contractual responsibility and not completed within 30 days of finished grading, there is no builder responsibility. Otherwise, builder should correct slope as needed, other costs incidental to such correction are borne by the builder.

#### Owner Responsibility

Fill in depressions, as they occur, due to settling. Direct downspouts and sump pump discharge from foundation and use extensions as needed. The owner's proper landscaping should eliminate a wet basement.

4. Common Defect or Problem

Improper drainage of the site.

Performance Standard

The builder, to insure proper drainage away from the home, shall have established the necessary preliminary grades and swells. Standing or ponding water shall not remain for periods in excess of 48 hours in the immediate area after a rain, except that in swales which drain other areas, or in areas where sump pumps discharge, a longer period can be anticipated. Consideration must be given to the type of soil present and to the relationship to surrounding terrain. The possibility of standing water after an unusually heavy rainfall should be anticipated. No grading determination shall be made while there is frost or snow on the ground, or while the ground is saturated.

Builder Repair Responsibility

The builder will try to establish the proper grades and swales based on soil conditions, site, and weather conditions. The homeowner is responsible for maintaining such grades and swales once they have been established.

5. Common Defect or Problem

Heavy rains will cause erosion where grass and sod has not had time to be permanently established.

Additional landscaping by homeowner or his agent can change the topography of site.

Performance Standard

The defects or problems can be determined by visual inspection or by additional information gathered at site inspection.

Builder Repair Responsibility

Repair to original finish as closely as possible.

Repairs, if required by inspection, will be made no more than one time during first year.

6. Common Defect or Problem

Grass, ornamental shrubbery, trees and other plantings die

Performance Standard

These are items of nature and are subject to homeowner care and maintenance.

Builder Repair Responsibility

None, unless noted in writing at a preoccupancy inspection prior to move-in and agreed to by builder that it would be taken care of.

7. Common Defect or Problem

Water appears on interior crawl space surfaces.

Performance Standard

Crawl spaces should be graded and drained properly to prevent water from accumulating deeper than  $\frac{3}{4}$  inch and larger than 36 inches in diameter in crawl space area. Standing or ponding water shall not remain for extended periods after a rain (generally, no more than 48 hours) except in surfaces that drain other areas where sump pumps discharge. In these areas a longer period can be anticipated. The possibility of standing water after an unusually heavy rainfall should be anticipated by the owner.

Builder Repair Responsibility

The Builder will take the necessary corrective measures to create positive flow within the crawl space to discharge to exterior of the structure.

# HARDWARE AND LIGHTING FIXTURE STANDARDS

## Background

All hardware and lighting fixtures are finished products and care should be taken to protect them, especially during painting and staining. Homeowner maintenance is required. The homeowner should make sure not to use abrasive products (i.e. laquer thinner, solvents, cleaners and cleaning solutions, etc.) to clean the hardware and light fixtures.

It should be understood that the natural chemicals in your body will cause a breakdown of the finish in time. It should be understood that there will be color variations within finishes.

Any hardware or light fixtures with a protective coating will gradually tarnish and eventually take on an antique appearance. Atmospheric conditions, direct sunlight, caustic agents such as cleaners, or scratches from contact with sharp objects may cause the protective coating to crack or peel, exposing the natural material, causing spotting and discoloration. The integrity of the surface under such conditions of exposure is not warranted. Initial care for these products requires only periodic cleaning with mild non-abrasive soap and light buffing with a soft cloth.

Regarding breakage of glass in light fixtures, it should be noted that such breakage is the responsibility of the manufacturer only until acceptance of delivery. Upon delivery, it is the owner's responsibility.

### 1. Common Defect or Problem

Finish on hardware or lighting fixture wears off.

#### Performance Standard

If the defect is caused by products such as lacquer, stain or varnish that was applied by the builder's subcontractor, the builder would be responsible for correcting.

#### Builder Repair Responsibility

If the defect was caused by the builder's subcontractor, the builder is to replace or repair. If due to natural causes or negligence on the part of the homeowner, the builder would not be responsible.

### 2. Common Defect or Problem

Locks do not work.

Performance Standard

All locks must work.

Builder Repair Responsibility

Builder to view lock to verify if it was installed properly. A faulty lock is covered by the manufacturer's one-year warranty. Builder is responsible for installation.

3. Common Defect or Problem

Lights or fans do not work.

Performance Standard

Wiring to fixture must be operative.

Builder Repair Responsibility

Builder is to repair defective wiring to lights and fans. If it is found that the fixture is inoperative, it would fall under a manufacturer's warranty. If the fixture was owner supplied, the owner will be responsible for the cost of the service call.

## HEATING & SHEET METAL STANDARDS

### Background

The heating and cooling systems are specified by code, with the equipment selection (size and capacity) being dependent upon the size of the home, outside design temperatures, and anticipated heat loss due to the home design. It should be noted that temperatures in the home may vary due to wind direction, windows, doors, etc. If parts of the home are colder than others, running the blower of the furnace constantly may help.

Cleaning of furnace filters is a homeowner's responsibility.

1. Common Defect or Problem

Noisy ductwork.

Performance Standard

When metal is heated it expands and when cooled it contracts. The result is "ticking" or "crackling" which is generally to be expected and shall be considered acceptable.

Builder Repair Responsibility

Installation to comply with codes.

2. Common Defect or Problem

Oilcanning.

Performance Standard

The stiffening of the ductwork and the gauge of the metal used shall be such that ducts do not "oilcan". The booming noise caused by "oilcanning" is not acceptable.

Builder Repair Responsibility

Builder will correct to eliminate this sound.

3. Common Defect or Problem

Furnace not placed as per plan.

Performance Standard

Due to heating design, venting and layout, the furnace location is to be determined by a heating contractor.

Builder Repair Responsibility

None.

4. Common Defect or Problem

Inadequate heating.

Performance Standard

Heating system shall be capable of producing an inside temperature of 70 degrees, as measured in the center of each room at a height of 5 feet above the floor, under local outdoor winter design conditions of -10 degree specified in ASHRAE handbook. Federal, state, or local energy codes shall supersede this standard where such codes have been locally adopted.

Builder Repair Responsibility

Builder will correct heating system to provide the required temperatures. However, the homeowner shall be responsible for balancing dampers, registers and other minor adjustments.

Builder shall not be responsible when installation follows guidelines of special rate Programs offered by utility companies if utility standards are lower than manufacturers recommendations.

Common Defect or Problem

Inadequate cooling.

Performance Standard

Where air-conditioning is provided, the cooling system shall be capable of maintaining a temperature of 78 degrees, as measured in the center of each room at a height of 5 feet above the floor, under local outdoor summer design conditions as specified in ASHRAE handbook. In the case of outside temperatures exceeding 95 degrees, a differential of 15 degrees from the outside temperature will be maintained where there is excessive glass, this may not be attainable. Owner should be advised on the use of shading in that area. Federal, state, or local energy codes shall supersede this standard where such codes have been locally adopted.

Builder Repair Responsibility

Builder will correct system to meet temperature conditions, in accordance with specifications. Builder shall not be responsible for changes when installation follows

guidelines of special rate programs offered by utility companies if utility standards are lower than manufacturer's recommendations.

6. Common Defect or Problem

Temperature in house is different than temperature set on the thermostat.

Performance Standard

If thermostat is properly calibrated according to equipment specs, temperature should not differ more than 4 degrees.

Builder Repair Responsibility

Builder to repair if there is a difference of more than 4 degrees.

Common Defect or Problem

Kitchen or hood fan lets cold air into home.

Performance Standard

All exhaust fans should have dampers, but drafts may develop during cold or windy weather. Because code requires boring through the outside wall, there also may be some condensation.

Builder Repair Responsibility

None. Owner should check to make sure damper operates and notify builder to repair if it does not operate.

8. Common Defect or Problem

Moisture runs back in at bath vent fan.

Performance Standard

See #11.

Builder Repair Responsibility

See #11.

9. Common Defect or Problem

Furnace is noisy.

Performance Standard



New furnaces are noisier due to design and blower size.

Builder Repair Responsibility

Builder to have manufacturer's representative determine if noise is excessive.

10. Common Defect or Problem

Condensation lines clog up.

Performance Standard

Condensation lines may clog eventually under normal use. This is a homeowner maintenance item. Builder shall provide unobstructed condensation lines at time of first occupancy.

Builder Repair Responsibility

None if installed properly. Builder shall provide unobstructed condensation lines at time of first occupancy.

11. Common Defect or Problem

Excessive humidity in home.

Performance Standard

See Moisture Standards.

17. Common Defect or Problem

Settling of air conditioning slab.

Performance Standard

Owner is required to maintain a proper slope and fill in dirt underneath slab.

Builder Repair Responsibility

Builder shall level within the first year.

## INSULATION STANDARDS

### Background

Insulating is the process by which a fire resistant material is installed at the perimeter or outer envelope of the structure to act as a barrier - to create a resistance to heat flow. This produces a more controlled interior comfort climate and conserves energy. The primary characteristic that is desired in an insulating material is the ability to trap a gas to increase the resistance to heat flow. Physically, the efficiency of the insulating material increases as either the bulk of the air entrapped is increased or the movement of the gas is decreased within a given volume of insulating material.

The measurement of insulating effectiveness is called "resistance to heat flow" and is expressed as "R Value". Each manufacturer is required to label his materials with its resistance to heat flow at 75 degrees mean temperature (R Value). R Value is a number rating system. As R increases, the overall effectiveness of the insulating material increases. Caution – Insulation may not cover an entire surface. Its R Value must be averaged with other assembly material to give a true total average R value.

Minimum R value are established by the State Energy Code.

The commonly used fibrous insulating materials are mineral wool, fiberglass and cellulose. These materials are selected for their large ration of surface area to mass of the material in order to better entrap air. The normal form of the insulating material is either the blown loose material, as is most often used in the ceiling, or the batt form. Other forms are rigid materials such as polyurethane or polystyrene, which are usually supplied in panel form or are sprayed in their application.

Air infiltration can be further minimized by the installation of weatherstripping and caulking. Both require owner maintenance throughout the life of the home. Some infiltration will occur under certain temperature and wind conditions.

The system of electric boxes and wiring on exterior walls produces an air flow passage whereby the cold or outside air can be drawn through the outlet into the room under most heating conditions, since the outside of the home is at a higher pressure than the inside. Also, venting for fans will produce some air flowage. With acceptable building practices, this situation is virtually unpreventable, as are certain other situations resulting from many openings that do not exist in the home under normal construction.

Moisture in insulation causes it to lose its insulating value. Therefore, vapor barriers are put on the inside to keep moisture from entering into the walls and ceilings. It is also

important to properly vent the attic to create airflow. This can be accomplished with roof vents, gable louvers, ridge vents and soffit vents. Cathedral ceiling areas, where there is no attic, requires proper ventilation. Year round ventilation is necessary.

Insulation and ventilation performance standards in some locations are specified by Code.

You may wish to refer to the Moisture Standard for additional information.

With the above background on the insulation material in mind, the following are the most common problems occurring in the area of insulation:

1. Common Defect or Problem

Pipes freeze.

Performance Standard

Drain, waste and vent, and water pipes shall be adequately protected, as required by applicable code, during normally anticipated cold weather, and as defined in accordance with ASHRAE design temperatures, to prevent freezing.

Builder Repair Responsibility

Builder will correct situations not meeting the code. It is the homeowner's responsibility to drain or otherwise protect lines and exterior faucets and hose bibs (even if they have an anti-siphon valve attached) exposed to freezing temperatures.

2. Common Defect or Problem

Moisture condensation on windows.

Performance Standard

Moisture condenses on the window since it is the coldest object in any given room with the glass having a much higher rate of heat transmission and hence, being the colder surface during the normal heating season. Moisture condensation on windows is an indication of either too much moisture in the room, or poor circulation of the moisture that is present. The owner can minimize this condition by merely opening a window to permit the excess moisture to escape or by installing a dehumidifying system if the condition persists. It should be noted that in homes with humidification equipment, the formation of moisture on the windows is an indication that the humidifying equipment is set too high and producing too much moisture. It is also recommended that screens be removed from casement windows during the heating season.

Builder Repair Responsibility

None, except to explain to the owner more thoroughly how this condition is caused.

3. Common Defect or Problem

Drafts at baseboards.

Performance Standard

The juncture of the floor and wall system is conducive to openings so a certain amount of draft is permissible, although it should be minimized.

Builder Repair Responsibility

Check out the areas to assure the air leakage is at a minimum.

4. Common Defect or Problem

Drafts from electric outlets.

Performance Standard

Electrical junction boxes on exterior walls may produce airflow whereby the cold air can be drawn through the outlet into a room.

Builder Repair Responsibility

Check out the areas to assure the air leakage is at a minimum.

5. Common Defect or Problem

Drafts from recessed lights, ceiling fans, vent fans.

Performance Standard

Drafts in these areas are normal.

Builder Repair Responsibility

None, as long as there is proper insulation around the unit.

6. Common Defect or Problem

Drafts around doors and windows.

Performance Standard

Doors and windows are cold spot sources and some infiltration of air must be expected. Proper weather-stripping and insulating around these areas can minimize air passage. However, depending on the type of window (i.e. double hung and sliding windows will have more air infiltration than casement or stationary

windows) and under certain temperature and wind conditions, some infiltration will be observed by the homeowner.

Builder Repair Responsibility

Builder to inspect and adjust poorly fitted weather-stripping. If draft comes around casings, builder to make sure insulation is in place around window wherever possible.

7. Common Defect or Problem

Blown insulation in attic displaces.

Performance Standard

This may occur due to wind and air movement in the attic.

Builder Repair Responsibility

During the first year, builder to redistribute insulation to Code

Common Defect or Problem

Blown insulation in attic settles.

Performance Standard

During the first year insulation should not settle. However, after time, settling will occur.

Builder Repair Responsibility

Builder to correct during first year.

8. Common Defect or Problem

Not enough insulation.

Performance Standard

The builder must provide the R rating as specified by Code or contract.

Builder Repair Responsibility

Builder to correct to Code/contract.

9. Common Defect or Problem

Gaps at the top of batt insulation.

Performance Standard

There should be no gaps.

Builder Repair Responsibility

Builder to insulate or foam spaces.

## MASONRY & CONCRETE STANDARDS

### Background

Masonry and concrete work in residential construction provides the base structure upon which the house is built and a permanent fire-proof construction and weatherproof exterior. The work is performed with quarried natural materials or with products manufactured by relatively simple processes, which have been selected for their wearing qualities. As such, they are subject to the same weathering phenomena as in their natural state, such as erosion, freezing and thawing, chipping, natural color variations and non-uniformity of size. Masonry work can be performed with an almost infinite variety of materials, methods of application and techniques of installation. This permits the owner an almost infinite range of personal choice but at the same time, creating, once that choice has been made a situation that can never be exactly duplicated. Masonry, more than any other trade, is dependent upon the variation of the product and the techniques of the individual workman.

Masonry and concrete work consists of four primary divisions:

1. The construction of a basement which may be either cast-in-place (poured) concrete or concrete block masonry installed on footings.
2. The placing (pouring) of flat slab areas consisting of footings, basement and garage floors, stoops, patios, walks or drives.
3. The veneering of the exterior of some structures with brick, stone or other masonry products.
4. The construction of fireplaces and chimneys.

Concrete is subject to several natural changes. The first is shrinkage in the hardening process, which creates shrinkage cracks, the type most common in concrete work, especially in flat slabs. Shrinkage cracks themselves do not affect the integrity of the surface. Concrete is subject to the elements and is attacked by certain chemicals. Pitting, scaling or spalling can develop under unusual conditions or when certain salt or chemicals are placed on a slab in winter for ice removal or drop from a car onto a garage slab and/or drive. A certain amount of surface dusting is normal. Proper owner maintenance can alleviate most of these situations. A sealer can be applied by the homeowner to the concrete to minimize dusting and sapling and effects from chemicals.

Cracking is characteristic of concrete, and cracks in concrete walls or mortar joints of block foundations generally do not affect the structural strength of the home. Cracks are caused by settling of the house, shrinkage of concrete, and expansion and contraction and may occur continually throughout the life of the house.

Settling is a natural phenomenon in the construction of a new home and concrete slabs are subject to the settling process. For this reason it is recommended that wherever possible, the construction of floating slabs, such as patios, walks and drives, be postponed until at least the end of the first year of occupancy or even longer so that a more stabilized soil condition will be available prior to actually doing the work.

Masonry and concrete work is also subject to color and texture variations due to the nature of the materials. Repairs, when made, seldom, match in color and some variation is to be expected by the owner.

When selecting a veneer material, predominantly a matter of owner preference, many factors enter in, such as: the bond or pattern to be used for the brick or stone; the selection of the type of mortar joint (whether struck, raked or weeping pattern); the color of the mortar and the shading variation from batch to batch; the shades of the material involved and their relative contrast with the mortar chosen; the choice of material size, standard or king size brick or the type of stone chosen; and, finally, the individual workmanship of the mason. All of these variables set up a distinctive situation within the masonry field.

1. Common Defect or Problem

Leaks in basement or wet basement.

Performance Standard

No leaks or flow of water are acceptable, except when caused by an improper ground pitch away from the foundation (a proper pitch is 6" down for every 10' out from the foundation and must be maintained by the owner), or improper landscaping or subterranean problems where the responsibility is defined as the owner's by the building contract. Leaking conditions should not be confused with dampness or moisture, which can be expected by the owner during the first year of the settling process, or with condensation during the summer months. If the basement had an engineered waterproofing system on it, then the owner should refer to the manufacturer's warranty.

Builder Repair Responsibility

Builder should correct as required. After correction, any openings made in order to correct should be repaired. Color variations in repairs are to be expected.

2. Common Defect or Problem

Cracked basement walls.

Performance Standard

Hairline cracks in mortar joints or cast-in-place concrete not exceeding 1/8" average width or hairline cracks in a single isolated block not extending to any adjacent blocks, providing these cracks do not cause a leaking problem are



acceptable. If the cracks are caused by an improper pitch away from the foundation or owner landscaping, it is the responsibility of the owner to repair.

#### Builder Repair Responsibility

Builder to repair any cracks in mortar joints or poured walls exceeding 1/8" average width. Unless structural danger exists, repairs should be made approximately a year after occupancy to permit normal settling through the stabilization period. Broken blocks should be removed from the inside and refused with a 4" block. Grout colors should be matched as closely as possible, but color variations should be expected by the owner. Exterior repairs will not be made except in the case of major structural damage.

### 3. Common Defect or Problem

Cracking of basement floor.

#### Performance Standard

Shrinkage cracking is to be expected and requires no repair unless one or both of the following conditions exist:

- a. If the two surfaces of the crack are mismatched in height by more than 3/16".
- b. If the shrinkage occurs non-uniformly (e.g. all in one crack rather than several) and exceeds 3/16 average width.

#### Builder Repair Responsibility

Builder should correct using a latex filler, surface patching or other methods as required, grinding surfaces smooth in case of mismatch. Owner is cautioned repair will not match in color and a hairline crack may reappear.

### 4. Common Defect or Problem

Cracking of garage slab.

#### Performance Standard

Cracks in garage slabs in excess of 5/16" in width or 5/16 " in vertical displacement shall be repaired.

#### Builder Repair Responsibility

Builder will repair cracks exceeding maximum tolerances by surface patching or other methods as required. See repair method for #3.

### 5. Common Defect or Problem

Cracks in patio, walks and drives.

Performance Standard

Except as may be otherwise covered by contract, no warranty against settling can be extended for floating slabs installed on soil, which is less than 95% compacted. Cracks in excess of 5/16" in width or 5/16" vertical displacement on a surface which is 95% compacted shall be repaired. It should be noted that floating slab type concrete should not be installed until at least the end of the first year, if possible.

Builder Repair Responsibility

Builder to repair to meet performance standard. If replacement of a section is required, the minimum section should be removed from the walk, drive or patio at the blind or open joint.

6. Common Defect or Problem

Pitting, scaling or sapling, and chert pops of concrete work.

Performance Standard

The aggregate in concrete work should not be exposed unless it is caused by a concentration of water, freezing and thawing, use of salt or other chemicals and mechanical implements, and other factors beyond the builder's control. Owner should consider sealing the concrete.

Builder Repair Responsibility

Correct using a latex filler or grind to remove defect to meet acceptable tolerance. Owner is cautioned latex repair will not match in color.

7. Common Defect or Problem

Powdering or chalking of concrete work.

Performance Standard

Powdering or chalking may occur. Builder should advise owner to seal the surface with a concrete sealing compound.

Builder Repair Responsibility

None. However, only if the surface is soft, other repairs may be required- these are rare and severe instances in which builder would then be required to correct.

8. Common Defect or Problem

Low spots in concrete slabs, except for stoops with foundations.

Performance Standard

No water pockets exceeding 5/16" depth shall exist in any slab, which is pitched. Where a level slab has been requested by the owner or in basements, water pockets may appear.

Builder Repair Responsibility

Correct to meet performance standards by filling with a latex or equivalent filler or grind as necessary. Finished repair should be feathered and smoothed. Minor color variations are to be expected.

9. Common Defect or Problem

Cracking of stoops with foundations.

Performance Standard

The effects of cracks or settling with inadequate drainage on stoops make acceptable tolerances much lower than for other slab forms. All cracks, except hairline cracks with no settling, require repair. Minor chips and cracks just beyond the acceptable tolerance should be corrected with a latex filler and beyond that point when complicated by settling.

Builder Repair Responsibility

Correct to meet performance standard.

10. Common Defect or Problem

Water stands on stoops with foundations.

11. Performance Standard

No measurable water depth exceeding 1/16" is permissible on stoops.

Builder Repair Responsibility

Correct to meet performance standards by filling with a latex filler or grinding. If the defect becomes qualified under item #9 on stoops, it shall be replaced as stated in that item.

Common Defect or Problem

Settling, heaving, or separating of stoops, steps or garage floors.

Performance Standard

Stoops, steps or garage floors shall not settle, heave or separate in excess of 1 inch from the house structures.

Builder Repair Responsibility

Builder will take whatever corrective action is required to meet the Performance Standard.

12. Common Defect or Problem

Basement floor does not pitch to floor drain.

Performance Standard

Basement floors are only pitched in the immediate area of the floor drain. When there is to be a finished floor area around the drain, floors will not be pitched.

Builder Repair Responsibility

None, if the floor meets the Performance Standard.

13. Common Defect or Problem

Cracks in mortar joints of brick or other masonry veneer walls.

Performance Standard

Small hairline cracks due to shrinkage are common in mortar joints in masonry veneer construction as long as they don't exceed 1/8 " width.

Builder Repair Responsibility

Builder will repair cracks in excess of Performance Standards by pointing or patching. These repairs shall be made at the end of the first year of the warranty period. Owner should note that there will be a color variation between old and new mortar.

14. Common Defect or Problem

Brick is different color than what was selected or colors vary.

Performance Standard

Due to the natural materials used to make brick, there will be color lot variations. Even within a lot, brick may vary in color.

**Builder Repair Responsibility**

None.

## MOISTURE STANDARDS

### Background

Because of the greater amount of desired and required insulation, vapor barriers, caulking, tighter windows and building practices used to cut down air infiltration, new homes have become more energy efficient. In some homes this can also cause problems with high humidity. The homes are so tight that normal humidity caused by cooking, breathing, showering, etc. builds up inside the home. This can cause steamed-up windows, condensation around outlets or recessed lights, and even drywall damage. When these conditions are first noticed, it is important to exhaust the humidity from the home. This can be done by running bath fans and vented cooking exhaust fans when necessary, using a dehumidifier, making sure the owner's dryer is vented outside, installing an air to air heat exchanger, or opening the house and letting the inside air exchange with the outside air.

The installation of de-humidification and humidification equipment and air to air exchangers is usually an owner option. Proper levels of humidity must be maintained. Just as too much moisture causes problems as described above, insufficient humidity, or excessive dryness can cause other serious problems.

It should be pointed out that household size; lifestyle and outdoor temperatures will affect the humidity level in the home. A home with an enclosed pool can be the source of excessive damaging moisture and requires special care in design, use and maintenance. To a lesser degree, saunas, hot tubs, and whirlpools also require similar care. The owners are responsible for maintaining proper temperatures and humidity in the home as well as for damage caused by failure to do so.

As outside temperature drop, the indoor relative humidity level of your home should be decreased. For homes equipped with at least insulating glass on their windows, the following levels can be used to keep window condensation to a minimum:

Humidity for:

<u>Outside Air Temperature</u>	<u>Inside Relative: 70 Degrees F Indoor Air Temp.</u>
-20 degrees F	15 to 20 percent
-10 degrees F	20 to 25 percent
0 degrees F	25 to 30 percent
+1 degrees F	30 to 35 percent
+20 degrees F	35 to 40 percent

#### 1. Common Defect or Problem

Moisture condensation on windows.

#### Performance Standard

Moisture condensation on the window since it is the coldest object in any given room with the glass having a much higher rate of heat transmission and, hence, being the colder surface during the normal heating season. Moisture condensation on windows is an indication of either too much moisture in the room, or poor circulation of the moisture that is present. The owner can minimize this condition by merely opening the window to permit the excess moisture to escape or by installing a dehumidifying system if the condition persists. It should be noted that in homes with humidification equipment, the formation of moisture on the windows is an indication that the humidifying equipment is set too high and producing too much moisture. It is recommended that screens be removed from casement windows during the heating season.

#### Builder Repair Responsibility

None, except to explain to the owner more thoroughly how this condition is caused.

#### 2. Common Defect or Problem

Moisture in attic.

#### Performance Standard

Builder must provide adequate ventilation to all areas of attic.

#### Builder Repair Responsibility

Builder to meet performance standards so that no moisture forms in the attic during normal weather conditions.

#### 3. Common Defect or Problem

Dampness and moisture on basement walls, floors, pipes, etc.

#### Performance Standard

Owner should make sure that clothes dryer has been vented to the outside and no internal heat moisture recovery device is being used. Electronic dampers, if applicable, on furnace should be checked. Walls and slabs are cold due to ground conditions; war moist air strikes the cold surfaces and condenses. Direct outside air should not be brought in as it is usually very moist during spring, summer and fall and the problem will be increased if such air is brought into the home.

#### Builder Repair Responsibility

None, other than explaining the causes to the owner and advising the use of a dehumidifier and increasing air circulation.

4. Common Defect or Problem

Water appears on interior crawl space surfaces.

Performance Standard

Crawl spaces should be graded and drained properly to prevent water from accumulating deeper than  $\frac{3}{4}$  inch and larger than 36 inches in diameter in crawl spaces area. Standing or ponding water shall not remain for extended periods after a rain (generally, no more than 48 hours) except in surfaces that drain other areas or in areas where sump pumps discharge. In these areas a longer period can be anticipated. The possibility of standing water after an unusually heavy rainfall should be anticipated by the owner.

Builder Repair Responsibility

The Builder will take the necessary corrective measures to create positive flow within the crawl space to discharge to the exterior of the structure.

5. Common Defect or Problem

Condensation on skylights.

Performance Standard

All skylights can develop condensation due to high humidity levels. If skylight is in bathroom, ventilating fans should always be used or the window opened.

Builder Repair Responsibility

Builder not responsible for humidity levels in home.

6. Common Defect or Problem

Condensation on toilets.

Performance Standard

Condensation may occur during high humidity times of the year.

Builder Repair Responsibility

Builder not responsible for humidity levels in the home.

7. Common Defect or Problem

Condensation or frost on electrical outlets.



Performance Standard

Electrical junction boxes on exterior walls may produce airflow whereby the cold air can be drawn through the outlet into a room, sometimes creating condensation or frost.

Builder Repair Responsibility

None.

8. Common Defect or Problem

Mildew or fungus on painted surfaces.

Performance Standard

Mildew or fungus will form on a painted surface if the structure is subject to abnormal exposures or excessive moisture.

Builder Repair Responsibility

Mildew or fungus formation is a condition the builder cannot control and is a homeowner maintenance item.

## PAINING, STAINING AND WALLPAPERING STANDARDS

### Background

Preservation is the primary purpose of painting, varnishing and staining as they protect exposed surfaces, both interior and exterior from environmental conditions and moisture penetration.

The prime cost in this type of work is labor, and for that reason owners often undertake the responsibility for painting/staining their homes. In such cases, the owners undertake all responsibility for the painting/staining contract unless otherwise specified. In any event, the party who undertakes the painting/staining contract, be it owner or the builder, assume's responsibility for:

Promptly and properly providing protection to exposed surfaces to prevent damage due to deterioration of unfinished surfaces. Warping, checking, cracking, dry rot and blackening of lumber or millwork, which takes place due to improper, untimely or no painting/staining is the responsibility of the party contracting for the painting/staining. Millwork manufactures do not normally extend warranties on their product against warping or cracking unless the surface has been properly finished. Special care must be exercised to assure that all sides and edges of doors are sealed to prevent warping.

Properly preparing the surface to accept the paint, stain or wallpaper, including filling nail holes and filling or sanding of imperfections.

Properly applying material in accordance with manufacturer's recommendations. The number of coats to be applied as specified in the contract.

Replacing hardware, fixtures and doors if they are removed for painting/staining or other finishing.

Consequential damages are not the responsibility of the builder.

Ceilings are not normally painted in new construction, but receive the drywall texture spray. Ceiling drywall repairs do not require painting.

By applying surface material or wall covering, the painting or wall covering contractor implies an acceptance of the work underneath.

Grain variations in wood will accept stain differently; therefore, it is not uncommon for two pieces of the same type wood, stained with the same product to vary in color. An attempt should be made by the painter to leave small quantities of all paints and stains for future touch up, if there is any left.

Some breakdown of the finish may occur around heavy concentrations of moisture (i.e. ranges, dishwashers, coffeepots) and is a homeowner maintenance item.

Varnished, painted or stained millwork and floors must be cared for like furniture and cannot be scrubbed. Exterior varnished surfaces requires more maintenance than painted surfaces.

Common Defect or Problem

Exterior paint or stain peels, chalks or fades, including gutters, downspouts or other sheet metal areas.

Performance Standard

The occurrence of peeling, chalking or fading should not occur during the warranty period unless the builder has specifically informed the owner that the particular color chosen may fade or chalk.

Builder Repair Responsibility

Builder shall properly and repaint affected areas, matching color as closely as possible. Owner must understand touch-ups may not match exactly. Should the paint deterioration affect the majority of a wall or area, the area should be repainted. The builder shall repaint in accordance with standards of good workmanship, but no warranty will be extended on the newly repainted surfaces.

2. Common Defect or Problem

Repainting of areas affected by drywall repairs.

Performance Standard

Industry standards require that the builder repaint new areas or repaired areas where painting has been affected by drywall repairs only when responsible for the painting contract. Repairs required shall be finished to match surrounding areas as closely as possible. Owner must be aware that there may be a slight color mismatch.

Builder Repair Responsibility

Builder will finish repair areas as indicated above.

3. Common Defect or Problem

Ceiling not painted originally or after repair.

Performance Standard

Industry standards do not require painting of ceiling unless specified in contract or specifications. Ceiling drywall repairs do not require painting if the painting of ceilings was not specified in the contract.

Builder Repair Responsibility

None, unless ceiling painting was specified in the contract or specifications.

4. Common Defect or Problem

Deterioration of varnish, polyurethane or lacquer finishes.

Performance Standard

Natural finishes on interior woodwork shall not deteriorate during the first year of the warranty period. However, varnish type finishes used on the exterior will deteriorate rapidly and are not covered by the warranty. Millwork and floors must be cared for like furniture and cannot be scrubbed.

Builder Repair Responsibility

Builder will refinish affected areas of interior woodwork, matching the color as closely as possible.

5. Common Defect or Problem

Insufficient coats applied.

Performance Standard

Builder is responsible to apply the number of coats specified in the contract. Pre-priming of millwork or trim does count as one coat.

Builder Repair Responsibility

Builder to provide the proper number of coats as per contract.

6. Common Defect or Problem

Paint and stain inside closet not of quality of other interior surfaces.

Performance Standard

Quality of workmanship may be lower in confined quarters where space limitations affect ability of workmen to work freely.

Builder Repair Responsibility

7. Common Defect or Problem

Mildew or fungus on painted surfaces.

Performance Standard

Mildew or fungus will form on a painted surface if the structure is subject to abnormal exposures or excessive moisture.

Builder Repair Responsibility

Mildew or fungus formation is a condition the builder cannot control and is a homeowner maintenance item.

8. Common Defect or Problem

Color variation within similar woods.

Performance Standard

Since wood is a natural product and its grain structure is unique for each piece of wood, builder cannot guarantee an exact color match.

9. Common Defect or Problem

Color variations between different types of wood.

Performance Standard

Dissimilar woods cannot be matched exactly.

Builder Repair Responsibility

None.

10. Common Defect or Problem

Doors warp.

Performance Standard

The owner should note that during the initial building stabilization period, it is not unusual for doors to warp or twist and alternately stick or not close as the home goes through its initial settling and drying period, especially over the first heating season. The builder is obligated only to make replacements after this initial stabilization

period, since often the door straightens in that process. Doors must be sealed on all six sides by the person contractually responsible for painting/staining.

All interior doors, closet doors, cabinet doors or drawers whose warpage exceeds the National Woodwork Manufacturers Association Standards (approximately ¼ “ in most cases), and where the warp cannot be corrected by adjustment of either jambs, stops, and/or hinges and cabinet catches to properly latch after initial stabilization period of the home, approximately the end of the first year, shall be replaced by the builder assuming the person responsible for painting/staining has sealed all six sides.

Builder Repair Responsibility

Adjust, upon request of the owner, one time only, preferably at the end of the warranty period, any doors that fail to operate properly, assuming that all six sides have been sealed by owner if owner was responsible for painting/staining. Replace any doors, which cannot be corrected to be within performance standards after stabilization. Refinishing to be the responsibility of party contractually responsible for painting/staining.

11. Common Defect or Problem

Wallcovering pulls loose.

Performance Standard

Wallcovering should not pull loose.

Builder Repair Responsibility

Provided the wallcovering is in the builder's contract, it should be repaired. If a patch must be made, builder shall match as closely as possible. Because of dye lot differences, owner must understand exact match may not be possible. If installed by owner, wallcovering repairs are the owner's responsibility.

12. Common Defect or Problem

Edge mismatching in pattern of wallcovering.

Performance Standard

Wallcovering should match as closely as possible.

Builder Repair Responsibility

Repair to meet performance standard. Because of dye lot differences, owner must understand that an exact match may not be possible.

# PLUMBING STANDARDS

## Background

Plumbing system installation is performed by licensed contractors in accordance with detailed plumbing code requirements. These code requirements were established primarily for individual and public health reasons.

### 1. Common Defect or Problem

Leakage of any kind from piping

#### Performance Standard

No leaks of any kind should exist in any soil, waste, vent or water pipe. Condensation on pipes or sweating fixtures does not constitute a leak.

#### Builder Repair Responsibility

Builder shall make necessary repairs to eliminate leakage

### 2. Common Defect or Problem

Faucet leak or valve leak

#### Performance Standard

No valve or faucet should leak.

#### Builder Repair Responsibility

Builder shall repair or replace the leaking faucet or valve. Washer or cartridge replacement is a homeowner's responsibility after the first year.

### 3. Common Defect or Problem

Water pipe banging/water hammer

#### Performance Standard

There can be some instances when the electric valves on appliances or single control valves are shut off fast, which can cause some banging. All noises due to water flow and pipe expansion cannot be removed.

#### Builder Repair Responsibility

Builder is responsible to have pipes fastened properly.

1. Common Defect or Problem

Fixtures do not hold water.

Performance Standard

Stoppers on fixtures should retain water for a sufficient length of time to accomplish the fixture's intended use.

Builder Repair Responsibility

Builder to correct until fixture holds water to meet Performance Standard.

5. Common Defect or Problem

Cracking, scratches or chipping of porcelain, fiberglass surfaces or faucets.

Performance Standard

Chips, cracks and scratches on surfaces of bathtubs, kitchen sinks and faucets can occur when surfaces is hit with sharp or heavy objects.

Builder Repair Responsibility

Builder shall repair any fixture or fitting which is outside acceptable standards as defined by the manufacturer. Builder will not be responsible for repairs unless damage has been reported to builder in writing at preoccupancy inspection prior to closing.

6. Common Defect or Problem

Stopped-up sewers, fixtures, and drains

Performance Standard

Sewers, fixtures, and drains should operate properly to accomplish their intended function.

Builder Repair Responsibility

Builder will not be responsible for sewers, fixtures, and drains, which are clogged through natural causes or the homeowner's negligence. If a problem occurs, the homeowner should consult builder for a proper course of action. Where defective construction is shown to be the cause, builder will assume the cost of the repair where homeowner negligence is shown to be the cause, the homeowner shall assume all repair costs.



7. Common Defect or Problem

Waste disposal unit does not operate properly.

Performance Standard

Disposal unit must accomplish its intended function.

Builder Repair Responsibility

Builder will repair any defective fixture or fitting which does not meet acceptable standards, as defined by the manufacturer, unless caused by homeowner negligence.

8. Common Defect or Problem

Sump pump does not operate.

Performance Standard

Sump pump should reasonably be expected to perform for a one-year period satisfactorily, unless unusual conditions such as underground springs or high water tables are encountered. Owner is responsible for maintaining a proper grade and downspout extensions should be used to keep water from pooling near foundation.

Builder Repair Responsibility

Builder shall repair or replace malfunctioning sump pump, except under unusual conditions.

9. Common Defect or Problem

Inadequate flushing of toilets.

Performance Standard

It is not unusual for a toilet to be flushed twice due to energy conservation fixtures.

Builder Repair Responsibility

None, unless it is a manufacturer's defect or plumbing clog which is the cause.

10. Common Defect or Problem

Plumbing pipes freeze and burst.

Performance Standard

Drain, waste, and vent, and water pipes shall be adequately protected, as required by applicable code, during normally anticipated cold weather, and as defined in accordance with ASHRAE design temperatures, to prevent freezing.

Builder Repair Responsibility

Builder will correct situations not meeting the code. It is the homeowner's responsibility to drain or otherwise protect lines and exterior faucets and hose bibs even if they have an anti-siphon valve attached) exposed to freezing temperatures.

11. Common Defect or Problem

Condensation (sweating) of pipes.

Performance Standard

Condensation (sweating) in normal and may occur most often in well water systems due to the extreme cold temperature (45-50 degree of water) of well water and humid basements.

Builder Repair Responsibility

None, unless pipe is leaking. A dehumidifier and pipe and tank insulation can be added by the owner.

Common Defect or Problem

Defective appliance or fixtures supplied by owner.

Performance Standard

Any appliances or fixtures supplied by the owner will not be warranted for leakage, etc. by the builder. There may be some instances where a plumber will not install an owner's fixtures if the fittings are not proper.

Builder Repair Responsibility

None.

## ROOFING STANDARDS

### Background

The purpose of roofing material is to form a weatherproof surface, which prevents water or snow from entering the house. The materials used must be both waterproof and wind-resistant to afford effective protection of the dwelling.

Roofing materials have various life expectancies. Life expectancy is dependent upon building orientation to the sun and roof slope. The manufacturer provides a written warranty for each particular product, which delineates what, is and is not covered. Although the sun is the major damaging force, wind and moisture also causes deterioration.

There are several types of roofing material used including asphalt, glass fiber, asbestos, wood tile and slate. The normal measurement of shingling material is the “square” which represents enough material to cover 100 square feet of roof area. Most manmade roofing materials are sold on the basis of longevity rather than weight and can be divided into several categories: organic vs. fiberglass, standard, laminated and specialty.

Wood shakes, slate, and tile roofs each have a specific method of installation recommended by manufacturer.

Shingle underlayment must be applied directly to roof boards. The purpose for this underlayment is as a secondary barrier to your roof covering.

Roofs or flashing should not leak under normally anticipated conditions. However, occasionally leakage may result from severe weather conditions, such as ice buildup, high winds, or driving rain.

During extreme weather conditions, water may overflow the gutters. Homeowners should check gutters and downspouts regularly to prevent leaf build-up in fall and snow and ice dams in the winter, which can cause water to backup under shingle and cause leaks.

Storm damage to properly installed roofing is the owner’s responsibility.

It must be noted that in the case of a repair to a roof, every effort should be made by the builder to match material and color as closely as possible. The homeowner must expect color variations.

1. Common Defect or Problem

Roof leaks.

Performance Standard

Roof should not leak. See homeowner's maintenance responsibility below. The integrity of the roof is dependent upon the performance of many trades. Roof application, sheet metal work, siding application, masonry, carpentry and plumbing can all have an effect on the ultimate performance of the roof system.

Builder Repair Responsibility

When a leak appears, builder should make an inspection to assure that the proper trade makes the repair, except when the leakage is a homeowner's maintenance responsibility.

Homeowner Maintenance Responsibility

Excessive ice or snow buildup with alternate freezing and thawing can create a condition causing leakage, which is a homeowner maintenance responsibility. Owner can correct this by preventing leaf buildup gutters and removal of excess snow and ice. In severe cases, a gutter heating cable can be used. On some occasions, a driving rain with high wind velocity can produce a temporary leak. Owner can also contract builder as to alternative suggestions on how to correct.

2. Common Defect or Problem

Chimney or chimney flashing leaks

Performance Standard

Chimney or chimney flashing should not leak.

Builder Repair Responsibility

Builder to check and repair chimney flashing. On particularly persistent and severe leaks, the builder may find it necessary to modify, or install a saddle between the roof and the chimney to divert roof water run off from the chimney. If the flashing is not the cause of the leak, owner is responsible to seal masonry.

3. Common Defect or Problem

Shingles blow off.

Performance Standard

Shingles should not blow off during the warranty period except under storm conditions. It should be noted that seal down shingles require heat from the sun to cause their sealing, so that some warm weather is required to affect the full seal.

Builder Repair Responsibility

Builder to repair shingles that have blown off if not due to winds in excess of basic wind speeds (see codes). In a repair situation, the owner is cautioned that a color mismatch in shingles may occur.

4. Common Defect or Problem

Shingle color mismatch.

Performance Standard

Color variations in roofing materials are normal and acceptable and are not covered under any warranty. Angle of the sun, granule placement, pitch of the roof, any many variables can all have an effect on the appearance of the roof.

Builder Repair Responsibility

None.

5. Common Defect or Problem

Broken shingles.

Performance Standard

Broken shingles must be replaced if reported to builder in writing prior to occupancy.

Builder Repair Responsibility

Builder to repair and match shingles as closely as possible.

6. Common Defect or Problem

Standing water on flat roof.

Performance Standard

Flat roofs must be installed according to manufacturer's specifications.

Builder Repair Responsibility

Builder to repair to manufacturer's specifications.

7. Common Defect or Problem

Moss and fungus growth on wood shake shingles.

Performance Standard

Under some conditions, moss and fungus tends to grow on cedar shake shingles.

Builder Repair Responsibility

None. Homeowners may wish to pursue remedies on the market that can be applied to shingles to prevent or retard these conditions.

8. Common Defect or Problem

Skylights leak.

Performance Standard

Skylights should not leak.

Builder Repair Responsibility

Builder to repair. Care should be taken not to confuse condensation for leakage. Refer to Moisture Section #5.

9. Common Defect or Problem

Roof vents leak.

Performance Standard

Under driving rains or snow conditions, vents may leak. Vents are a necessary and integral part of a building. Anything that lets air out can, under certain circumstance, let snow or rain back in.

Builder Repair Responsibility

This is a normal, temporary condition, which should require no repair.

10. Common Defect or Problem

Ridges of roof decking showing through roof.

Performance Standard

If the ridge or depression effect exceeds 3/8" and cannot be corrected from below, the ridge must be corrected. The ridge measurements should be made by measuring the gap created when a 6" straight edge is placed tightly 3" on one side of the defect and the gap measured between the roof and the straight edge of the other end. Fiberglass shingles will magnify and mirror any unevenness of the roof decking below.

Builder Repair Responsibility

Builder to meet Performance Standard

11. Common Defect or Problem

Chimney flashing leaks.

Performance Standard

Chimney flashing should not leak. However, some masonry is porous, allowing moisture/dampness to seep in under certain conditions.

Builder Repair Responsibility

Builder to check and repair chimney flashing. If the flashing is not the cause of the leak, owner is responsible to seal masonry. On particularly persistent and severe leaks, the builder may find it necessary to modify, or install a saddle between the roof and the chimney to divert roof water run off from the chimney.

12. Common Defect or Problem

Any other flashings, valleys, roofing leak.

Performance Standard

Flashings, valleys, and roofing should not leak.

Builder Repair Responsibility

Builder to repair.

13. Common Defect or Problem

Gutters and downspouts leak.

Performance Standard

Gutters and downspouts should not leak, but may overflow during heavy rains. It shall be the owner's responsibility to keep gutters and downspouts free of leaves and debris which could cause excessive overflow.

Builder Repair Responsibility

Builder to repair so gutters and downspouts do not leak.

14. Common Defect or Problem

Water stands in gutters.

Performance Standard

A water level not in excess of 1" depth in any gutter section after the rain ceases when unobstructed by debris is acceptable. Industry practices is to install gutter approximately level without pitch. Consequently, it is entirely possible that small amounts of water will stand in certain sections of the gutter after a rain.

Builder Repair Responsibility

Builder shall correct when water level is in excess of ½" in depth.



## SIDING STANDARDS

### Background

There are numerous types of siding. Wood and wood products, aluminum and vinyl are the most prevalent types being used. Each product is different and has its own inherent characteristics.

It should be noted that caulk does not adhere to vinyl siding and thus, as per manufacturer's recommendation, vinyl is not caulked. Caulking is an owner's maintenance responsibility after one repair.

1. Common Defect or Problem

Aluminum siding buckles or ripples.

Performance Standard

This problem may be inherent due to the shrinkage of the wood underneath. Siding should not be ¼" out of plane in an 8' length. This can be measured by laying an 8' straight edge at the highest point of the buckle.

Builder Repair Responsibility

Builder to repair to meet Performance Standard.

2. Common Defect or Problem

Dents, chips, or scratched on the aluminum/vinyl siding.

Performance Standard

Dents are to be noted in writing at the time the owner closes or takes occupancy of the home.

Builder Repair Responsibility

Builder to repair within one year of initial closing- if notified prior to occupancy. It should be noted that repaired area may not match in color and/or textures.

3. Common Defect or Problem

Siding comes loose.

Performance Standard

Siding should not come loose.

Builder Repair Responsibility

Builder to refasten.

4. Common Defect or Problem

Caulking cracks.

Performance Standard

All types of caulk can dry out. Builder to remove old caulk and replace with new caulk at cracked areas one time during first year. After the one repair, caulking becomes an owner maintenance responsibility.

Builder Repair Responsibility

Builder to repair to Performance Standard one time during the first year

5. Common Defect or Problem

Fading of aluminum or vinyl siding.

Performance Standard

Aluminum and vinyl siding will fade.

Builder Repair Responsibility

None.

6. Common Defect or Problem

Wood shrinks, cracks, twists, bows and knots fall out.

Performance Standard

Due to the inherent characteristics of wood, all of the above may happen.

Builder Repair Responsibility

Builder will caulk knotholes one time and any gaps in excess of ¼” shall be caulked if noted prior to occupancy. After occupancy, this is a homeowner maintenance responsibility.

7. Common Defect or Problem

Wood siding splits where nail penetrates siding.

Performance Standard

If noted in writing to builder prior to occupancy, builder to replace piece and restrain, if staining was builder's responsibility.

Builder Repair Responsibility

Builder to repair in accordance with Performance Standard.

8. Common Defect or Problem

Lap on wood bevel siding.

Performance Standard

Lap shall be no less than ¾" prior to shrinkage.

Builder Repair Responsibility

Repair to meet Performance Standard.

9. Common Defect or Problem

Delamination of veneer siding.

Performance Standard

All siding should be installed according to manufacturers and industry's accepted standards. Delaminations shall be repaired or replaced. If owner is responsible for staining or painting of exterior surfaces and does not do it, builder is not responsible for delamination.

Builder Repair Responsibility

Builder will repair or replace siding as needed unless caused by homeowner's neglect to maintain siding properly. Repaired area may not match in color and/or texture. For surfaces requiring paint, builder will paint only the new materials if builder was responsible for exterior painting or staining. The homeowner can expect that the newly painted surface may not match the original surface in color.

10. Common Defect or Problem

Paint peels or fades on wood siding.

Performance Standard

Exterior paints or stains should not fail during the first year warranty. However, fading is normal and the degree is dependent on climatic conditions.

Builder Repair Responsibility

If paint or stain peels and builder is responsible for painting, builder will properly prepare and refinish affected areas, matching color as close as possible. Where finish deterioration affects the majority of the area, the whole area will be refinished. The builder shall repaint in accordance with standards of good workmanship, but no warranty will be extended on the newly repainted surfaces.

11. Common Defect or Problem

Cracks in exterior stucco wall surfaces.

Performance Standard

Cracks are not unusual in exterior stucco wall surfaces.

Builder Repair Responsibility

Builder will repair exceeding 1/8" in width or where causing water damage.

## WINDOW STANDARDS

### Background

Air infiltration around double-hung and slide by windows.

Homeowners are cautioned not to use razor blades when cleaning windows.

1. Common Defect or Problem

Scratches, cracks, or breakage of glass not caused by vandalism.

Performance Standard

If glass damage is not reported to builder in writing prior to occupancy, it is the homeowner's responsibility.

Builder Repair Responsibility

Builder to repair only if noted in writing prior to occupancy.

2. Common Defect or Problem

Holes in screens not caused by vandalism.

Performance Standard

If screen damage is not reported to builder in writing prior to occupancy, it is the homeowner's responsibility.

Builder Repair Responsibility

Builder to repair only if noted in writing prior to occupancy.

3. Common Defect or Problem

Window check rails not even or flush.

Performance Standard

Acceptable tolerance is 3/16".

Builder Repair Responsibility

Builder to correct.

4. Common Defect or Problem

Out of plumb windows.

Performance Standard

Windows must operate with reasonable ease as designed.

Builder Repair Responsibility

Builder to repair to be operable.

5. Common Defect or Problem

Windows do not operate properly

Performance Standard

Windows shall operate with reasonable ease as designed.

Builder Repair Responsibility

Builder to correct as required.

6. Common Defect or Problem

Air infiltration around doors and windows.

Performance Standard

Drafts around the doors and windows are cold spot sources. Proper weatherstripping and insulating around these areas can minimize air passage. However, under certain temperature and wind conditions, some infiltration will be observed by the homeowner.

Builder Repair Responsibility

Builder to adjust poorly fitted doors, windows, and weatherstripping.

Common Defect or Problem

Moisture condensation on windows.

Performance Standard

Moisture condenses on the window since it is the coldest object in any given room with the glass having a much higher rate of heat transmission and, hence, being the colder surface during the normal heating season. Moisture condensation

on windows is an indication of either too much moisture in the room, or poor circulation of the moisture that is present. The owner can minimize this condition by merely opening the window to permit the excess moisture to escape or by installing a dehumidifying system if the condition persists. It should be noted that in homes with humidification equipment, the formation of moisture on the windows is an indication that the humidifying equipment is set too high and producing too much moisture. Screens should be removed from casement windows during the heating season.

Builder Repair Responsibility

None, except to explain to the owner more thoroughly how this condition is caused and to assist the homeowner in correcting the condition.

## SKYLIGHT STANDARDS

### Background

1. Common Defect or Problem

Condensation on skylights

Performance Standard

All skylights can develop condensation due to high humidity levels.

Builder Repair Responsibility

Builder not responsible for humidity levels in home. Bathroom ventilating fans should always be used or window opened.

2. Common Defect or Problem

Leaks around skylights.

Performance Standard

Skylights should not leak.

Builder Repair Responsibility

Builder to repair.

3. Common Defect or Problem

Scratches, cracks, or breakage of glass to skylight not caused by vandalism.

Performance Standard

If glass damage is not reported to builder in writing prior to occupancy, it is the homeowner's responsibility.

Builder Repair Responsibility



Builder to repair only if noted in writing prior to occupancy.

5. Common Defect or Problem

Discoloration on plastic skylight windows.

Performance Standard

This is inherent in the product.

Builder Repair Responsibility

None.

## SITE DRAINAGE AND EROSION

### Background

Site drainage must comply with all applicable building codes in jurisdiction. All sites must be prepared initially to prevent or reduce erosion from excessive water run off. Homeowner maintenance is required after possession of site.

#### 1. Common Defect or Problem

Heavy rains will cause erosion where grass and sod has not had time to be permanently established.

Additional landscaping by homeowner or his agent's can change the topography of site.

#### Performance Standard

The defects or problems can be determined by visual inspection or by additional Information gathered at site inspection.

#### Builder Repair Responsibility

Repair to original finish as closely as possible.

Repair will be made no more than one time during first year.

## STUCCO

### Background

Provides water proof envelope for dwelling.

#### 1. Common Defect or Problem

Cracks in exterior stucco wall surfaces.

#### Performance Standard

Cracks are not unusual in exterior stucco wall surfaces.

#### Builder Repair Responsibility

Builder will repair exceeding 1/8" in width or where causing water damage. Builder to match color as close as possible. Builder responsible for water intrusion for twenty- four months.

**MANUFACTURER INSTALLATION**

All building material affixed to the residential structure shall be installed in accordance with the adopted building codes and/or the manufacturers installation instructions.