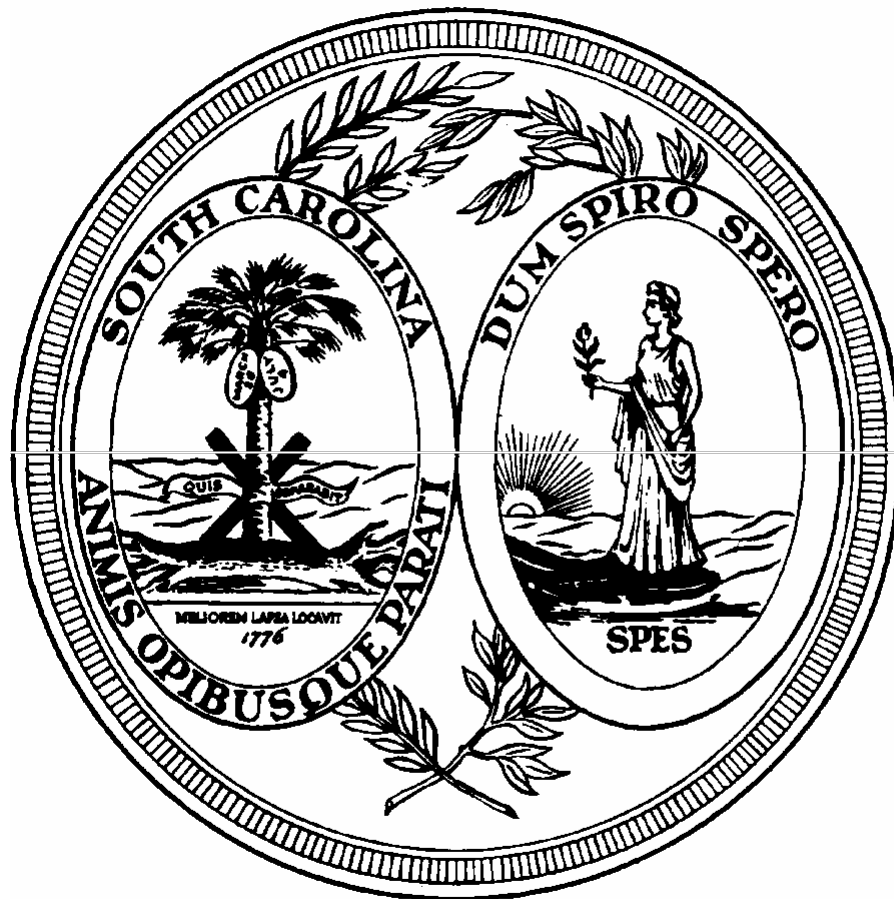


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## South Carolina residential construction standards

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# South Carolina Residential Construction Standards



Adopted by the South Carolina Residential Builders Commission on  
September 14, 2022

## **PREFACE**

Pursuant to S.C. Code Ann. § 40-59-110 (1976, as amended), the Commission adopts the following as construction standards, violations of which may be deemed evidence of substandard work:

1. Building codes adopted by the South Carolina Building Codes Council in accordance with Code of Laws of South Carolina, Title 6, Chapter 9.
2. Manufacturer specifications and/or installation instructions.
3. The Performance Standards set forth herein.

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## APPLICABLE TIME LIMITS

**The Commission, under normal conditions, will inspect for construction standards violations during the time limits shown below. Residential builder or residential specialty contractor (collectively referred to herein as “contractor” or “contractors”)<sup>1</sup> responsibility does not extend to items, which have been subject to homeowner 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, limits, or modifies a warranty.**

South Carolina Department of Labor, Licensing and Regulation (“LLR”) shall, in its discretion, inspect for violations of building codes and manufacturer specifications when a complaint is received, but in no event shall it inspect beyond eight years from substantial completion.<sup>2</sup>

LLR shall inspect for Performance Standards violations identified by the homeowner within twelve (12) months after substantial completion<sup>3</sup>:

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 weather-stripping
14. Hardware
15. Hard coat stucco
16. Heating and air conditioning
17. Plumbing
18. Electrical

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<sup>1</sup> The use of the generic terms “contractor” and “contractors” to include a residential specialty contractor where applicable does not eliminate the legal requirements for such contractor or contractors to have the appropriate license or registration to engage in the trade indicated.

<sup>2</sup> A certificate of occupancy or completion issued by a local jurisdiction is evidence of substantial completion. If a certificate of occupancy or completion is not issued or obtained, then proof of final inspection by the building code official having jurisdiction is evidence of substantial completion.

<sup>3</sup> Identified by homeowner means that the homeowner or their representative has notified the contractor of an issue with the building component(s) but it does not require that the homeowner specify the Performance Standard violation.

In the case of new construction, there may be some items that LLR will not inspect in the first twelve months after substantial completion because of an initial stabilization period.

Despite the time limit stated above on inspections for Performance Standard violations, LLR shall inspect when appropriate for major structural damage, including structural damage to systems noted above by an asterisk\*, and buildings which are unsafe, unsanitary, do not provide adequate egress, constitute a fire hazard, or are otherwise dangerous to human life during the first eight years after substantial completion.

Adopted by the Commission on September 14, 2022

## INTRODUCTION TO PERFORMANCE STANDARDS

While building codes are designed to address matters of health, safety, and welfare, the Performance Standards are intended to specify the–minimum standards in workmanship provided by contractors that may not be addressed by the building codes or manufacturer specifications.<sup>4</sup>

Only the most frequent defects in workmanship have been addressed in the Performance Standards. 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.

Noncompliance with the Performance Standard calls for corrective action by the contractor. The format is designed for easy comprehension by both layman and contractor 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. Contractor Repair Responsibility – statement of the corrective action required of the contractor 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 contractor’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.**

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<sup>4</sup> If there is a conflict between a Performance Standard and the applicable building code, the building code requirement takes precedence as a matter of law.



## CARPENTRY STANDARDS - ROUGH

(Rough Carpentry, Lumber & Truss)

Framing or rough carpentry provides the skeletal structure of the residence, 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.

Contractor Repair Responsibility

Contractor 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.

Contractor Repair Responsibility

Contractor 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.

Contractor Repair Responsibility

Contractor 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 occur 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 sub-surfaces 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.

Contractor Repair Responsibility

If ridges exceed standard, contractor should 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. Homeowner should note that there may be a mismatch in materials due to time or dye lot variations.

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.

Contractor Repair Responsibility

Contractor 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.

**Remodeling Specific Standard:** The contractor and homeowner may agree to construction of walls out of plumb to match the existing structure or to compensate/accommodate for inaccuracies in the existing structure.

Contractor Repair Responsibility

Contractor 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.

Contractor Repair Responsibility

Contractor to repair to make windows 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. Contractor is not responsible for inadvertent cutting of tape where wallpapering may have been done.

Contractor 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

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

Contractor 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 ½ inch within a 36- inch measurement running parallel with ceiling joist, shall be excessive.

Contractor 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 homeowner and contractor 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 contractor as a completed product and are warranted by the contractor according to manufacturer's standards.

Scratches, chips, gouges or nicks should be noted by the homeowner at the time of the preoccupancy inspection. To maintain the beauty of the wood and wood products, wood should be cared for by the homeowner much like furniture. Contractor should caution homeowner 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 homeowner, it should be finished at the earliest possible opportunity. The primary purpose is preservation and protecting the surfaces and edges from weather and moisture penetration. Homeowner 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 homeowner contracted to do the staining himself or herself, then the contractor 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 contractor is responsible for the painting and/or staining, samples or names of the paint products should be left with the homeowner 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 homeowner 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 contractor 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) after the initial stabilization period of the building shall be replaced by the contractor at the end of the first year, unless the warp can be corrected by adjustment of either jambs, stops, and/or hinges and cabinet catches. Doors MUST be sealed on all six sides by the person contractually responsible for painting/staining.

### Contractor Repair Responsibility

Adjust, upon request of the homeowner, 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 contractor'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.

### Contractor Repair Responsibility

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

#### Contractor Repair Responsibility

During the first year, if the security of the building is jeopardized, correct as requested by the homeowner 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 contractor's contract. If painting is part of homeowner's contract, the homeowner should be 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 they abut 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".

#### Contractor Repair Responsibility

Contractor 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 homeowner, 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.

#### Contractor Repair Responsibility

Contractor 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 homeowner's responsibility if the homeowner has not promptly followed through on his responsibility to finish the door or has not finished all six

sides of the doors. Contractor to refinish only if painting or staining was part of the contractor'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.

Contractor Repair Responsibility

None.

7. Common Defect or Problem

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

Performance Standard

Since wood is a natural product and the grain structure is unique for each piece of wood, the contractor 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.

Contractor 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.

Contractor Repair Responsibility

None.

9. Common Defect or Problem

Millwork trim graining or color does not match.



Performance Standard

See #7

Contractor Repair Responsibility

See#7

10. Common Defect or Problem

Gaps in miter joints.

Performance Standard

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

Contractor Repair Responsibility

Contractor should repair any gaps exceeding 1/16”. If the homeowner is responsible for the staining portion of the contract, the homeowner is responsible for re-staining. If staining was part of the contractor’s contract, contractor must re-stain, 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 homeowner closes or takes occupancy of the home that are readily visible from a distance of six feet under normal lighting conditions are unacceptable.

Contractor Repair Responsibility

Contractor 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 homeowner is responsible for the painting portion of the contract, the finishing work becomes the homeowner’s responsibility.

12. Common Defect or Problem

Splices of millwork material within the length of a wall.

Performance Standard

Splicing is permissible.

Contractor 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 contractor shall correct.

Contractor 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.

Contractor Repair Responsibility

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

15. Common Defect or Problem

Seams in laminate countertops raise.

Performance Standard

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

Contractor 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 homeowner takes occupancy of the home. Any defects must be noted by the homeowner in writing at the preoccupancy inspection and should be corrected by the contractor. In some rare cases there may be some latent defects in laminates, which would require adjustments by manufacturer.

Contractor Repair Responsibility

Correct defects noted at occupancy inspection. Defects occurring after that time are the homeowner's responsibility for correction since these surfaces are subject to homeowner'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. Contractor shall remove old caulk and replace with new caulk at cracked areas one time during the first year. After the one repair, caulking becomes a homeowner maintenance responsibility.

Contractor Repair Responsibility

Contractor to repair to performance standard one time during the first year

2. Common Defect or Problem

Caulking is missing.

Performance Standard

Contractor is responsible to caulk all wood, wood to masonry, aluminum to wood and aluminum to masonry pursuant to code.

Contractor 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 weather-stripping and insulation 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 certain temperature and wind conditions, some infiltration will be observed by the homeowner.

### Contractor Repair Responsibility

Contractor shall inspect and adjust poorly fitted weather-stripping. If draft comes around casings, contractor shall 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 applied by trowel.

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 is, if the defect is readily noticed by visual inspection, it should be repaired. However, due to the initial shrinkage occurrence, 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 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. 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 contractor did not contract for the painting. The contractor 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 contractor will not be responsible for paint touch-up, provided that color samples are left by the painter at the home. Otherwise the contractor shall be responsible to touch up the repair, but the homeowner 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 contractor 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.

Contractor 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 troweling marks.

Performance Standard

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

Contractor Repair Responsibility

Correct such defects as in (1) above.

3. Common Defect or Problem

Photographing (joint banding) 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.

Contractor Repair Responsibility

Photographing (joint banding) is not common, but when it is readily visible (without lighting the defect from one direction), it is the contractor'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.

Contractor Repair Responsibility

Repair finish to be uniform to industry 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. Contractor is not responsible for inadvertent cutting of tape where wallpapering may have been done by the homeowner.

Contractor 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 contractor only prior to decorating. The use of a rounded corner is acceptable at angles.

Contractor Repair Responsibility

Contractor shall 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.



Contractor 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 codes. The code dictates safety requirements predominantly to prevent fires and minimize the chance of personal injury.

The contractor cannot be responsible for what a homeowner plugs into an electrical outlet. Contractor is also not responsible for what a homeowner 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.

Contractor 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.

Contractor Repair Responsibility

Contractor shall 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 contractor supplied, the contractor would be responsible for the service call. If the fixture was homeowner supplied, the homeowner 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 at the start of some motor driven equipment.

Contractor Repair Responsibility

Check wiring for installation per code requirements. If flickering/dimming does not occur when motor driven equipment is turned off, the homeowner should notify the contractor to check if the wiring is per code. If wiring is correctly installed, the homeowner 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.

Contractor Repair Responsibility

Contractor should first check internal wiring as necessary. If internal wiring is proper, homeowner should then notify the electric power company of 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 there may be an overload of portable appliances. (See #6 re: GFI circuits).

Contractor Repair Responsibility

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

6. Common Defect or Problem

Ground fault interrupter (GFI) circuit trips frequently.

Performance Standard

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

Contractor Repair Responsibility

Contractor shall install ground fault interrupter in accordance with applicable 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 ballasts will hum.

Contractor 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.

Contractor Repair Responsibility

Contractor shall repair or replace if doorbell/chimes supplied by contractor. Homeowner is responsible if homeowner 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.

Contractor Repair Responsibility

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

10. Common Defect or Problem

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

Performance Standard

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

Contractor Repair Responsibility

Contractor 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.

Contractor Repair Responsibility

Contractor 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.

Contractor Repair Responsibility

None.

3. Common Defect or Problem

Cracked firebrick and mortar joints in firepot.

Performance Standard

Expansion and contraction will cause cracking.

Contractor Repair Responsibility

None, unless crack exceeds 1/8" width. Contractor 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 homeowner should use a rust-removing product to remove rust.

Contractor 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 homeowners 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.

Contractor Repair Responsibility

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

6. Common Defect or Problem

Fireplace fans are noisy.

Performance Standard

Fans will make some noise due to the location of the 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.

Contractor Repair Responsibility

Contractor 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.

Contractor Repair Responsibility

Contractor 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. Homeowner 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.

Contractor Repair Responsibility

Contractor 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 that involve flooring are a result of these natural phenomena that occur during the stabilization of the home (initial warranty period) and are mirrored in the floor coverings.

Resilient flooring is a manufactured 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 contractually assumed by the homeowner or may be done by the contractor 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 homeowner 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.

Contractor Repair Responsibility

Contractor 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.

Contractor Repair Responsibility

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

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 in writing prior to occupancy, are the contractor's responsibility.

Contractor Repair Responsibility

None, unless noted in writing prior to occupancy. Contractor shall 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. Re-grouting 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 in the event of a repair.

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 homeowner 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 will not be the contractor'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 abutting dissimilar materials. As such, they require repointing.

#### Contractor Repair Responsibility

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

#### 2. Common Defect or Problem

Ceramic tile cracks or becomes loose.

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 that this type of cracking is not warranted.

Contractor Repair Responsibility

Replace any cracked tiles and recement any loose tiles, unless the defects were caused by homeowner's negligence. (Homeowner 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.

Contractor Repair Responsibility

None.

4. Common Defect or Problem

Mildew forms on tile or grout.

Performance Standard

This is a homeowner's maintenance responsibility.

Contractor Repair Responsibility

None.

5. Common Defect or Problem

Color variations in tile.

Performance Standard

Color variations are inherent in all ceramic glazes and fired clay products.

Contractor Repair Responsibility

None.

6. Common Defect or Problem

Tile style or pattern no longer available when repair requested.

Contractor Repair Responsibility

Unless homeowner will accept a repair with as closely matching materials as currently available or correction by other means, contractor should credit the homeowner 1 ½ times the cost to repair as if the material was available. This would be 1 ½ times 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.

Contractor Repair Responsibility

Contractor 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 variations 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 part of a repair is the inability to match closely the color due to variation from dye lot to dye lot. In the replacement or correction of resilient flooring, the homeowner must be prepared to accept a variation in dye lot even if 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 contractor will attempt to match colors as closely as possible, the homeowner 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 the same dye lot. The homeowner 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 from 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 75 lbs. Narrow tipped or stiletto high heels will damage vinyl tile and all sheet vinyl flooring and will not be the contractor's responsibility for repair. As a result of 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, either in the form of squares or sheet goods, which is applied by the appropriate trade, predominantly with mastic applied directly over the prepared surface.

1. Common Defect or Problem

Nail pops appear on the surface of resilient flooring.

Performance Standard

All nail pops should be repaired.

### Contractor 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 amount of area where the nail pop broke the surface and the joint will not be readily noticeable.

#### 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 sub-surfaces to which they are applied and emphasize this ridging. If the ridge or depression 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.

### Contractor Repair Responsibility

If ridge exceeds standard, contractor shall 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. Homeowner should note that there may be a mismatch in materials due to time difference or dye lot variations. In the alternative, the homeowner and contractor may agree to a repair by some other means or use of closely matching materials as are currently available.

#### 3. Common Defect or Problem

Resilient flooring lifts, bubbles, or unglued at joint.

#### Performance Standard

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

### Contractor Repair Responsibility

Providing edges are still intact, contractor shall re-secure the material. If the edges are no longer intact, contractor shall 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 abut, larger gaps may appear.

Contractor 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 high traffic areas. The homeowners 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.

Contractor Repair Responsibility

This is not a manufacturing defect nor the contractor's responsibility, but is the homeowner'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. Homeowner should contact the manufacturer for a determination under the warranty.

6. Common Defect or Problem

Fading of color of resilient flooring.

Performance Standard

Exposure to excessive direct sunlight through glass sliding doors can cause fading or discoloration.

Contractor Repair Responsibility

This is not a manufacturing defect nor the contractor's responsibility, but is the homeowner'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 homeowner use and

abuse. Contractor Repair Responsibility

None, unless problems are relayed to the contractor in writing prior to occupancy or noted during walk-through. If contractor is notified prior to occupancy or at walk-through, it is contractor'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, homeowner shall refer to manufacturer's warranty.

Contractor Repair Responsibility

None

9. Common Defect or Problem

Floors squeak

Performance Standard

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

Contractor Repair Responsibility

Contractor 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 involve surface nailing in carpeted areas and be 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.

Contractor Repair Responsibility

Contractor 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.

Contractor 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.

Contractor Repair Responsibility

Contractor 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.

Contractor Repair Responsibility

Contractor to repair or replace any boards that have cupped in excess of the performance standard on hardwood floors. The Contractor is not responsible for cupping caused by moisture beyond the control of the Contractor. 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 in writing to contractor at preoccupancy inspection.

Contractor Repair Responsibility

None, unless noted in writing prior to occupancy; if so noted, then contractor shall repair.

6. Common Defect or Problem

Fading of wood floors.

Performance Standard

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

### Contractor Repair Responsibility

This is not a manufacturing defect nor the contractor's responsibility, but is the homeowner'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.

### Contractor Repair Responsibility

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

#### Contractor Repair Responsibility

Contractor shall scribe the bottom of the door to conform to the level of the concrete so weather-stripping on bottom of door creates a seal.

#### 2. Common Defect or Problem

Garage doors allow entrance of snow or water.

#### Performance Standard

Garage doors shall be installed as recommended by the manufacturer. Some infiltration by the elements can be expected under severe weather conditions, if the door is not weather-stripped.

### Contractor Repair Responsibility

Contractor will adjust or correct garage doors to meet manufacturers recommendations. If weather-stripped, door must create a seal against the elements.

#### 3. Common Defect or Problem

Door does not fit tightly at the sides and top.

#### Performance Standard

A. If it is not a weather-stripped door, there may be some small gaps.

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

### Contractor Repair Responsibility

A. If the door is not weather-stripped, the contractor has no repair responsibility.

B. If the door is weather-stripped, the contractor shall repair.

#### 4. Common Defect or Problem

Garage doors fail to operate under normal use.

#### Performance Standard

Garage doors shall operate properly.

### Contractor Repair Responsibility

Contractor 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.

### Contractor 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.

Contractor Repair Responsibility

If light is visible, Contractor will fill split and match paint or stain as closely as possible if contractor provided the 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 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 homeowner 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 contractor.

### **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 homeowner.

### **Hauling (Trucking)**

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

### **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. Contractor 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. Contractor 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 homeowner 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 homeowner.

## **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 runoff. All contractual agreements made between parties will take precedence over Construction Standards. 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.

#### Contractor Repair Responsibility

To the extent provided in the building contract, the contractor shall perform the initial backfilling.

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

Lines installed by the Contractor that settle excessively shall be repaired by the contractor during the first year.

### Homeowner's Responsibility

Unless otherwise specified by contract, homeowner should fill in depressions 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. "Wet" shall be defined as actual water running or trickling from, through or under the basement wall and onto the floor, 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 where the homeowner has not yet done the grading. Proper grading and landscaping should eliminate damp or wet basements.

#### Contractor 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 in instances where contractor has contracted for finish grading.

#### Performance Standard

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

#### Contractor Repair Responsibility

If landscaping is homeowner's contractual responsibility and not completed within 30 days of finished grading, there is no contractor responsibility. Otherwise, contractor should correct slope as needed and bear other costs incidental to such correction.

#### Homeowner Responsibility

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

4. Common Defect or Problem

Improper drainage of the site.

Performance Standard

To insure proper drainage away from the home, the contractor shall have established the necessary preliminary grades and swales. 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 a sump pump discharges, a longer period can be anticipated. Consideration must be given to the type of soil present and to the relationship with the 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.

Contractor Repair Responsibility

The contractor shall 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 permanently establish.

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

Performance Standard

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

Contractor 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.

Contractor Repair Responsibility

None, unless noted in writing at a preoccupancy inspection prior to move- in and agreed to by contractor 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 or where a sump pump discharges. In these areas, a longer period can be anticipated. The possibility of standing water after an unusually heavy rainfall should be anticipated by the homeowner.

Contractor Repair Responsibility

The Contractor will take the necessary corrective measures to create positive flow within the crawl space to discharge to the 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. lacquer 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 and 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 homeowner'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 contractor's subcontractor, then the contractor would be responsible for correcting.

#### Contractor Repair Responsibility

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

#### 2. Common Defect or Problem

Locks do not work.

Performance Standard

All locks must work.

Contractor Repair Responsibility

Contractor shall determine if the lock was installed properly. A faulty lock is covered by the manufacturer's one-year warranty. Contractor is responsible for installation.

3. Common Defect or Problem

Lights or fans do not work.

Performance Standard

Wiring to fixture must be operative.

Contractor Repair Responsibility

Contractor shall repair defective wiring to lights and fans. If the fixture is inoperative, it would fall under a manufacturer's warranty. If the fixture was homeowner supplied, the homeowner 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.

Contractor Repair Responsibility

Installation to comply with codes.

2. Common Defect or Problem

Oil canning.

Performance Standard

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

Contractor Repair Responsibility

Contractor 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.

Contractor Repair Responsibility

None unless the contractor subcontracts with the heating contractor.

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.

Contractor Repair Responsibility

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

Contractor shall not be responsible when installation follows guidelines of special rate programs offered by utility companies if utility standards are lower than manufacturer's 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 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; however, where there is excessive glass, this may not be attainable. Homeowner 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.

Contractor Repair Responsibility

Contractor will correct system to meet temperature conditions, in accordance with specifications. Contractor 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.

Contractor Repair Responsibility

Contractor shall 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.

Contractor Repair Responsibility

None. Homeowner should check to make sure damper operates properly and, if not, notify contractor to repair

8. Common Defect or Problem

Moisture runs back in at bath vent fan.

Performance Standard

See #11.

Contractor Repair Responsibility

See #11.

9. Common Defect or Problem

Furnace is noisy.

Performance Standard

New furnaces are noisier due to design and blower size.

Contractor Repair Responsibility

Contractor shall 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. Contractor shall provide unobstructed condensation lines at time of first occupancy.

Contractor Repair Responsibility

None if installed properly. Contractor 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

Homeowner is required to maintain a proper slope and fill in dirt underneath slab. Contractor Repair Responsibility

Contractor 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 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 values 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 ratio of surface area to mass of material which allows for better entrapment of 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 a sprayed-on application.

Air infiltration can be further minimized by the installation of weather-stripping and caulking. Both require homeowner 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 flow. 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.

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 pipes 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.

Contractor Repair Responsibility

Contractor 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. Moisture condensation on windows is an indication of either too much moisture in the room, or poor circulation of the moisture present. The homeowner 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.

Contractor Repair Responsibility

None, except to explain to the homeowner more thoroughly how this condition is created.

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.

Contractor 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.

Contractor 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.

Contractor 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.

Contractor Repair Responsibility

Contractor shall inspect and adjust poorly fitted weather-stripping. If draft comes around casings, contractor shall 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.

Contractor Repair Responsibility

During the first year, contractor shall 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.

Contractor Repair Responsibility

Contractor shall correct during first year.

8. Common Defect or Problem

Not enough insulation.

Performance Standard

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

Contractor Repair Responsibility

Contractor to correct to Code/contract.

9. Common Defect or Problem

Gaps at the top of batt insulation.

Performance Standard

There should be no gaps.

Contractor Repair Responsibility

Contractor shall insulate or foam spaces to close off gaps.



## 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 durability. 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 homeowner an almost infinite range of personal choice but at the same time, creating a finished product that can never be exactly duplicated. Masonry, more than any other trade, is dependent upon the variation of the materials 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 homeowner maintenance can alleviate most of these situations. A sealant can be applied by the homeowner to the concrete to minimize dusting and spalling 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 should be expected by the homeowner.

When selecting a veneer material, predominantly a matter of homeowner preference, many factors enter in, including 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 homeowner), or improper landscaping or subterranean problems where the responsibility is allotted to the homeowner by the building contract. Leaking conditions should not be confused with dampness or moisture, which can be expected by the homeowner during the first year of the settling process, or with condensation during the summer months. If the basement had an engineered waterproofing system applied to it, then the homeowner should refer to the manufacturer's warranty.

Contractor Repair Responsibility

Contractor 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, provided that these cracks do not cause a leakage problem are acceptable. If the cracks are caused by an improper pitch away from the foundation or homeowner landscaping, it is the responsibility of the homeowner to repair.

### Contractor Repair Responsibility

Contractor 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 replaced with a 4" block. Grout colors should be matched as closely as possible, but color variations should be expected by the homeowner. 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.

### Contractor Repair Responsibility

Contractor should correct using a latex filler, surface patching or other methods as required, grinding surfaces smooth in case of mismatch. Homeowner is cautioned that 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.

### Contractor Repair Responsibility

Contractor 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.

### Contractor Repair Responsibility

Contractor 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 contractor's control. Homeowner should consider sealing the concrete.

### Contractor Repair Responsibility

Correct using a latex filler or grind to remove defect to meet acceptable tolerance. Homeowner 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. Contractor should advise homeowner to seal the surface with a concrete sealing compound.

### Contractor Repair Responsibility

None. However, ~~only~~ if the surface is soft, other repairs may be required- these are rare and severe instances in which contractor 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 homeowner or in basements, water pockets may appear.

Contractor 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 and when complicated by settling should be corrected with a latex filler.

Contractor Repair Responsibility

Correct to meet performance standard.

10. Common Defect or Problem

Water stands on stoops with foundations.

Performance Standard

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

Contractor 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.

Contractor Repair Responsibility

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

11. 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.

Contractor Repair Responsibility

None, if the floor meets the Performance Standard.

12. 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.

Contractor Repair Responsibility

Contractor 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. Homeowner should note that there will be a color variation between old and new mortar.

13. Common Defect or Problem

Brick is a 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.

Contractor 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 homeowner'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 dehumidification and humidification equipment and air to air exchangers is usually an homeowner 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 homeowners 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 is common 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 homeowner 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.

### Contractor Repair Responsibility

None, except to explain to the homeowner the cause of this condition.

## 2. Common Defect or Problem

Moisture in attic.

### Performance Standard

Contractor must provide adequate ventilation to all areas of attic.

### Contractor Repair Responsibility

Contractor 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

Homeowner should make sure that the 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; warm 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.

### Contractor Repair Responsibility

None, other than explaining the causes to the homeowner and advising the homeowner on the use of a dehumidifier and to increase 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. 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 homeowner.

##### Contractor Repair Responsibility

The Contractor 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 the skylight is in a bathroom, ventilating fans should always be used or the window opened.

##### Contractor Repair Responsibility

Contractor 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.

##### Contractor Repair Responsibility

Contractor is 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.

Contractor 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.

Contractor Repair Responsibility

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

## **PAINTING, STAINING AND WALLPAPERING STANDARDS**

### Background

Preservation is the primary purpose of painting, varnishing and staining so as to 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, homeowners often undertake the responsibility for painting/staining their homes. In such cases, the homeowners undertake all responsibility for the painting/staining contract unless otherwise specified. In any event, the party who undertakes the painting/staining contract, be it homeowner or the contractor, assumes responsibility for:

Promptly and properly providing protection to exposed and unfinished surfaces to prevent damage from deterioration, including warping, checking, cracking, dry rot and blackening of lumber or millwork. Millwork manufacturers do not normally extend warranties on their products 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 materials in accordance with manufacturer's recommendations. The number of coats to be applied should be specified in the contract.

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

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 require more maintenance than

Painted surfaces.

Common Defect or Problem

Exterior paint/stain peels, chalks or fades, including on 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 contractor has specifically informed the homeowner that the particular color chosen may fade or chalk.

Contractor Repair Responsibility

Contractor shall repaint affected areas, matching color as closely as possible. Homeowner must understand that touch-ups may not match exactly. Should the paint deterioration affect the majority of a wall or area, the area should be repainted. The contractor 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 contractor repaint new areas or repair 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. Homeowner must be aware that there may be a slight color mismatch.

Contractor Repair Responsibility

Contractor 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.

Contractor 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.

Contractor Repair Responsibility

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

5. Common Defect or Problem

Insufficient coats applied.

Performance Standard

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

Contractor Repair Responsibility

Contractor shall 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.

Contractor Repair Responsibility

Paint and stain in a proper workmanlike manner within limitations stated above.

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.

Contractor Repair Responsibility

Mildew or fungus formation is a condition the contractor 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, contractor 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.

Contractor Repair Responsibility

None.

10. Common Defect or Problem

Doors warp.

Performance Standard

The homeowner 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 contractor is obligated only to make replacements after this initial stabilization period, since often the door straightens in the process. Doors must be sealed on all six sides by the person contractually responsible for painting/staining.

After the initial stabilization period of the home (approximately the end of the first year), all interior doors, closet doors, cabinet doors or drawers whose warpage exceeds the National Woodwork Manufacturers Association Standards (approximately ¼" in most cases), and cannot be corrected by adjustment of either jambs, stops, and/or hinges and cabinet catches, shall be replaced by the contractor responsible for painting/staining.

Contractor Repair Responsibility

Adjust, upon request of the homeowner, 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 homeowner if homeowner was responsible for painting/staining. Replace any doors, which cannot be corrected to performance standards after stabilization. Refinishing is the responsibility of party who contracted to perform the painting/staining.

11. Common Defect or Problem

Wallcovering pulls loose.

Performance Standard

Wallcovering should not pull loose.

Contractor Repair Responsibility

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

12. Common Defect or Problem

Edge mismatching in pattern of wallcovering.

Performance Standard

Wallcovering should match as closely as possible.

Contractor Repair Responsibility

Contractor shall repair to meet performance standard. Because of dye lot differences, homeowner 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 to address matters of health, safety, and welfare.

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.

Contractor Repair Responsibility

Contractor 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.

Contractor Repair

Responsibility

Contractor 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.



Contractor Repair Responsibility

Contractor is responsible to have pipes fastened properly.

4. 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.

Contractor Repair Responsibility

Contractor shall 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 are hit with sharp or heavy objects.

Contractor Repair Responsibility

Contractor shall repair any fixture or fitting which is outside acceptable standards as defined by the manufacturer. Contractor will not be responsible for repairs unless damage has been reported to contractor 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.

Contractor Repair Responsibility

Contractor 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 the contractor for a proper course of action. Where defective construction is shown to be the cause, contractor 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.

Contractor Repair Responsibility

Contractor 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 highwater tables are encountered. Homeowner is responsible for maintaining a proper grade and should use downspout extensions to keep water from pooling near foundation.

Contractor Repair Responsibility

Contractor 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.

Contractor 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, 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.

Contractor Repair Responsibility

Contractor 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 exposed to freezing temperatures (even if they have an anti-siphon valve attached).

11. Common Defect or Problem

Condensation (sweating) of pipes.

Performance Standard

Condensation (sweating) is 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.

Contractor Repair Responsibility

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

Common Defect or Problem

Defective appliance or fixtures supplied by

homeowner. Performance Standard

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

Contractor 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 effectively protect the dwelling.

Roofing materials have various life expectancies. Life expectancy is dependent upon building orientation to the sun and the slope of the roof. 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 cause deterioration.

There are several types of roofing materials 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 the manufacturer.

Shingle underlayment must be applied directly to roof boards. The underlayment serves as a secondary barrier to the roof covering.

Roofs or flashing should not leak under normally anticipated conditions. However, occasional 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 the shingles and cause leaks.

In repairing a roof, every effort should be made by the contractor to match material and color as closely as possible. The homeowner must expect color variations.

#### 1. Common Defect or Problem

Roof leaks.

### Performance Standard

Roofs 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.

### Contractor Repair Responsibility

When a leak appears, contractor should inspect to determine which trade should make 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. Homeowner can correct this by preventing leaf buildup in 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.

## 2. Common Defect or Problem

Chimney or chimney flashing leaks

### Performance Standard

Chimney or chimney flashing should not leak.

### Contractor Repair Responsibility

Contractor to check and repair chimney flashing. On particularly persistent and severe leaks, the contractor may find it necessary to modify, or install a saddle between the roof and the chimney to divert roof water runoff from the chimney. If the flashing is not the cause of the leak, homeowner 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 effectuate the sealing, i.e. warm weather is required to affect a full seal.

Contractor Repair Responsibility

Contractor shall repair shingles that have blown off if not due to winds in excess of basic wind speeds (see codes). In a repair situation, the homeowner 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, and many other variables can all have an effect on the appearance of the roof.

Contractor Repair Responsibility

None.

5. Common Defect or Problem

Broken shingles.

Performance Standard

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

Contractor Repair Responsibility

Contractor 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.

Contractor Repair Responsibility

Contractor shall 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.

Contractor Repair Responsibility

None. Homeowners may wish to purchase and apply products/coatings to shingles to prevent or retard these conditions.

8. Common Defect or Problem

Skylights leak.

Performance Standard

Skylights should not leak.

Contractor Repair Responsibility

Contractor shall 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 circumstances, also let snow or rain in.

Contractor Repair Responsibility

This is a normal, temporary condition, which should not require a 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 contractor must correct the ridge. 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.

Contractor Repair Responsibility

Contractor 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.

Contractor Repair Responsibility

Contractor shall check and repair chimney flashing. If the flashing is not the cause of the leak, homeowner is responsible to seal masonry. On particularly persistent and severe leaks, the contractor may find it necessary to modify, or install a saddle between the roof and the chimney to divert roof water runoff from the chimney.

12. Common Defect or Problem

Any other flashings, valleys, or roofing leak.

Performance Standard

Flashings, valleys, and roofing should not leak.

Contractor Repair Responsibility

Contractor shall 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 homeowner's responsibility to keep gutters and downspouts free of leaves and debris which could cause excessive overflow.

Contractor Repair Responsibility

Contractor shall repair so gutters and downspouts do not leak.

14. Common Defect or Problem

Water stands in gutters.”



### Performance Standard

When unobstructed by debris, a water level not in excess of 1" depth in any gutter section after rain ceases is acceptable. Industry practice 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.

### Contractor Repair Responsibility

Contractor 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 a homeowner'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.

Contractor Repair Responsibility

Contractor shall repair to meet Performance Standard.

2. Common Defect or Problem

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

Performance Standard

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

Contractor Repair Responsibility

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

3. Common Defect or Problem

Siding comes loose.

Performance Standard

Siding should not come loose.

Contractor Repair Responsibility

Contractor shall refasten.

4. Common Defect or Problem

Caulking cracks.

Performance Standard

All types of caulk can dry out. Contractor should remove old caulk and replace with new caulk at cracked areas one time during first year. After the one repair, caulking becomes a homeowner maintenance responsibility.

Contractor Repair Responsibility

Contractor shall 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.

Contractor 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.

Contractor Repair Responsibility

Contractor 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 contractor prior to occupancy, contractor shall replace piece and re-stain, if staining was contractor's responsibility.

Contractor Repair Responsibility

Contractor shall repair in accordance with Performance Standard.

8. Common Defect or Problem

Lap on wood bevel siding.

Performance Standard

Lap shall be no less than 3/4" prior to shrinkage.

Contractor Repair Responsibility

Contractor shall 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. Delamination shall be repaired or veneer siding replaced. If homeowner is responsible for staining or painting of exterior surfaces and does not do it, contractor is not responsible for delamination.

Contractor Repair Responsibility

Contractor 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, contractor will paint only the new materials if contractor 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.

Contractor Repair Responsibility

If paint or stain peels and contractor is responsible for painting, contractor will properly prepare and refinish affected areas, matching color as closely as possible. Where finish deterioration affects the majority of the area, the whole area will be refinished. The contractor 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.

Contractor Repair Responsibility

Contractor will repair cracks 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 contractor in writing prior to occupancy, it is the homeowner's responsibility.

Contractor Repair Responsibility

Contractor 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 contractor in writing prior to occupancy, it is the homeowner's responsibility.

Contractor Repair Responsibility

Contractor shall 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".

Contractor Repair Responsibility

Contractor shall correct to acceptable tolerance.

4. Defect or Problem

Out of plumb windows.

Performance Standard

Windows must operate with reasonable ease as designed.

Contractor Repair Responsibility

Contractor shall repair windows so that they operate.

5. Common Defect or Problem

Windows do not operate properly

Performance Standard

Windows shall operate with reasonable ease as designed.

Contractor Repair Responsibility

Contractor shall correct windows 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 weather-stripping and insulating around these areas can minimize air passage. However, under certain temperature and wind conditions, some infiltration will be observed by the homeowner.

Contractor Repair Responsibility

Contractor shall adjust poorly fitted doors, windows, and weather-stripping.

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. 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 homeowner 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.

Contractor Repair Responsibility

None, except to explain to the homeowner 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.

Contractor Repair Responsibility

Contractor is 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.

Contractor Repair Responsibility

Contractor shall repair any leaks.

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 contractor in writing prior to occupancy, it is the homeowner's responsibility.

Contractor Repair Responsibility

Contractor 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.

Contractor 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 runoff. 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 become 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.

#### Contractor Repair Responsibility

Contractor shall repair to original finish as closely as possible.

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

## STUCCO

### Background

Provides waterproof 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.

#### Contractor Repair Responsibility

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