

# **MILLER CUSTOM HOMES**

***“Build Responsibly, Think Green”***

## **Warranty Guidelines**

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# **MILLER CUSTOM HOMES**

## **WARRANTY PROCEDURES**

Dear Miller Custom Homes New Homeowner,

Congratulations and thank you for purchasing a Miller Custom Homes home. We hope by providing you with the following information, you will understand the Warranty service program of Miller Custom Homes,

A home is one of the last “hand built” products left in the world. Home building is part art, part science and part hard labor. Once the natural and man-made materials have been assembled, the components will react and interact with each other and the environment. Homeowner care and maintenance is required and essential to providing a quality home for a lifetime.

The Warranty Guidelines section describes the warranty guidelines in compliance with the building industry performance standards as defined by the National Association of Homebuilders.

Miller Custom Homes follows these established performance guidelines for each home built and anything that falls below these performance standards will be corrected to meet them.

We hope by providing you with this information in advance, you will have a clear understanding of Miller Custom Homes in the area of Warranty Service and what Miller Custom Homes will do for you.

Please read through this information and we hope you enjoy your new home. Thank you again for purchasing a Miller Custom Homes new home.

Sincerely,

Charles Miller  
President

# **MILLER CUSTOM HOMES WARRANTY PROCEDURES**

## **General Information**

For reason of accuracy and to comply with the terms of your warranty, all items for which you request warranty service, need to be reported in writing only, except in an emergency situation, which includes the following:

1. Total loss of heat
2. Total loss of electricity
3. Plumbing leak that requires entire water supply to be shut off
5. Roof leaks
6. Any situation that endangers occupants

So that we do not interrupt your busy schedule and to minimize multiple service calls, we ask that you submit only two non-emergency warranty request lists during your first year:

**6 Week List-** These are the warrantable items which were not apparent during your orientation. (Note: chips, scratches, mars or dents not noted at original walk through are non-warrantable) Please include any items unfinished from your pre-closing walk-through list.

**11 Month List-** These are additional warrantable items (please refer to your N.A.H.B. performance standards booklet) not noted on your 6-week list, and one time settling and shrinkage related repairs or adjustments. (i.e.: cracks in drywall or grout)

## **How to Obtain Warranty Service**

After completion of your Pre-closing Walk-through items, any additional requests will be handled through our warranty department. For reasons of accuracy and to comply with the terms of your warranty, all items for which you request warranty service needs to be reported in writing. Warranty service forms will be mailed to you by Miller Custom Homes, at the warranty periods of 6 weeks and 11 months. **If you create your own list on your computer, please keep to the same format as the Warranty service forms.**

When submitting these forms, please follow these steps:

1. Please refer to the Performance Guidelines included in this booklet for each item in question.
2. Determine if the item is covered by warranty.
3. Determine if Miller Custom Homes is responsible for the corrective measure.

# **MILLER CUSTOM HOMES**

## **WARRANTY PROCEDURES**

When filling out your warranty request, please be as descriptive and complete as possible. If you add items after your list has been sent in, we may not have all the materials with us to complete the repairs or adjustment. Any added items that cannot be completed on the scheduled day should be put on your 11month list.

After completing your warranty request list, mail, fax, or email to:

**Miller Custom Homes**  
**2913 Ryan Court**  
**Virginia Beach, VA 23456**  
**Attn. Warranty Department**  
**Fax: 757-426-9062**  
**E-mail: [millercustomhomes@mac.com](mailto:millercustomhomes@mac.com)**

Upon receipt of your warranty request, **if needed**, we will contact you for an inspection appointment. If not needed, the Warranty Department will contact you to schedule an appointment to complete the warranty work, approximately 2 weeks from contact date. Some subcontractors may schedule an earlier or later appointment directly with you, but their work should still be completed by the completion date set by Miller Custom Homes.

**Appointments are available during normal working hours, 8:00 A.M. to 4:00 P.M., Monday through Friday.** The items on your written warranty request form will be transferred to individual work orders and issued to each subcontractor, authorizing repairs for your home. Upon completion of work orders, whenever possible, the subcontractor should get the homeowner's signature on the completed work orders and then return the work order to Miller Custom Homes. If you feel that the work is not complete when presented for your signature, do not refuse to sign the work order. Simply note what it is that you feel is not complete, and sign.

*Please be aware that all warranty service requests must be received within one (1) year after closing or move-in. The first year warranty period expires on the anniversary date of your closing or move-in, whichever occurs first*

### **Appliance Service Information**

Any kitchen appliance service requests should be handled directly with the manufacturers. Their service numbers are listed below.

# **MILLER CUSTOM HOMES WARRANTY PROCEDURES**

|  |              |
|--|--------------|
| Huskey Ferguson  | 757-490-4885 |
| General Electric Service<br>Monogram<br>G.E. – Hot Point             | 800-432-2737 |
| Maytag Service<br>Maytag<br>Admiral<br>Jenn-Air                      | 800-688-1100 |
| Supreme Appliance<br>Viking<br>Thermador<br>Bosch<br>U-Line<br>Dacor | 757-858-5800 |

## **Miller Custom Homes Emergency**

For reasons of accuracy and to comply with the terms of your warranty, all items for which you request warranty service need to be reported in writing only, except in an emergency situation, which includes the following:

1. Total Loss of Heat
2. Total Loss of Electricity
3. Plumbing leak that requires entire water supply to be shut off.
4. Any situation that endangers occupants
5. Roof Leaks

### **EMERGENCY PHONE NUMBERS**

|                        |                           |              |
|------------------------|---------------------------|--------------|
| <b>Heating</b>         | Mechanical Services       | 757-427-0016 |
| <b>Plumbing</b>        | Premier Plumbing          | 757-424-7902 |
| <b>Electric</b>        | Donnie Howlett Electrical | 757-286-0781 |
| <b>Security System</b> | Tidewater Security        | 757-363-7720 |
| <b>Audio Visual</b>    | AVI Technology            | 757-363-7139 |

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*In the event of water leaks to the roof, window, door, or basement, please do what you can to soak up the water to minimize the damage. Contact the Miller Custom Homes office the following business day. 757-426-9061*

### **One Time Only Repairs**

#### **Ceramic Tile**

- At the 11-month warranty, the tile contractor will make repairs to cracks in the grout and replace cracked tiles. Miller Custom Homes is not responsible for discontinued patterns or color variations when replacing tile or colored grout. It is the homeowner's responsibility to re-grout these joints for the lifetime of the home.

#### **Doors**

- Interior doors that have warped in excess of 1/4" shall be replaced and refinished to match existing doors as closely as possible. Miller Custom Homes cannot guarantee an exact match in stain.

#### **Plaster/Drywall**

- It is recommended that all drywall repairs be made at the 11-month warranty time, allowing for the home to expand and contract with one complete heating and cooling season. **Plaster/Drywall repairs to be fixed by Miller Custom Homes are defined as:**
- Cracks in excess of 1/8 inch and nail pops that can be seen from 5 feet away under normal lighting and viewing conditions. These will be completed one time during the first year only. It is recommended you wait to repaint, wallpaper or stencil until this first year is complete. Miller Custom Homes is not responsible for custom wallpaper or stenciling.
- For all drywall repairs please list every warranted drywall item on the drywall list and it is very important you put a post-it note by each one listed. Miller Custom Homes' subcontractors will be responsible to sand and touch-up those repaired areas matching the surrounding area as closely as possible.
- Plasterboard and Sheetrock comes in 4 foot by 12-foot lengths and may develop hairline cracks where the pieces are joined together. This is normal, and may open and close depending on the moisture in the home. Occasionally joints appear on the wall or ceiling due to the paint color and/or abnormal and/or indirect lighting. Miller Custom Homes cannot guarantee these joints will not be visible.

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### Paint

- The painting contractor will make one return trip to your home. It will be at the same time as your drywall repair. They will touch up any warrantable drywall repairs. The entire walls will not be repainted, only the area where the repair was made. This includes foyer and stairway walls. Custom wall colors are subject to the same conditions. The painters will only touch-up walls that were painted by the painting contractor's company.

### **Paint and Stain Information**

#### Paint and Stain

**Compliance to meeting the criteria of a properly painted surface shall be determined by the following:**

**The walls will be viewed at a distance of no less than 6 feet.**

**The walls will be viewed from a normal viewing position, standing.**

**The walls will be viewed under normal lighting conditions.**

Interior and exterior paint and stain colors will vary from paint charts and samples on display due to the variations and color of different types of wood or other surfaces to which it is applied. This is also true of exterior stains.

Your interior walls have been painted with 2 coats of paint. We will putty dings and cracks, and the drywall repairs will be repainted. We do not promise to see every dent or imperfection.

During your walk-through, we will post areas that need additional touch-up. The walls will be viewed according to normal viewing criteria. Walls will be repaired and repainted to correct the problem. We will not re-roll entire walls. This includes foyer and stairway walls. Custom wall colors are subject to the same conditions.

Normal depth closets will be viewed from outside the closet with the door open, considering the closet will be full of clothes. The supervisor has the right to limit excessive touchup requests.

No wall is perfect. Our woodwork will be stained and sealed prior to the walls being painted. For that reason, the edge of the woodwork and cabinets will be masked and the paint will be brushed up to the tape. Sometimes the paint may bleed under the tape, causing an uneven line or blotch. This is normal and brush strokes will differ from roller marks.

Angled walls, especially short walls, may not be perfectly straight from corner to corner due to common drywall practices. There may be slight gaps between casing/wall and base/wall. This is due to discrepancies in the angle of the wall. The shorter the wall, the more likely it is to have a gap. **These gaps can be caulked at the judgment of the supervisor. Custom wall colors will not be caulked.**

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Sprayed and knock down ceilings can have bumps, depressions and imperfections. The spray texture is sprayed, much as you would use a garden hose or a can of spray paint, and it is impossible to get a perfectly even ceiling. Dents and scrapes can be touched up to the best of the drywall contractor's ability.

Your woodwork will be stained and 2 coats of sealer will be applied. There will be numerous workers in your house after woodworking is complete. Sometimes a piece of trim or a door will get scratched or bumped with something. We will touch up these areas with putty, stain or varnish. Scratched and dinged woodwork will not be replaced at the discrepancy of the supervisor.

Your woodwork will all be stained with the same color stain. Variations due to different pieces of wood or a different can of stain cannot be controlled.

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# **MILLER CUSTOM HOMES**

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### **Miller Custom Homes Warranty**

### **Guidelines**

*This booklet sets forth the responsibilities of Miller Custom Homes with respect to the construction of your new home. Miller Custom Homes abides by the following Warranty Guidelines in compliance with the building industry standards as defined by the National Association of Homebuilders. Our criteria for qualifying warranty repairs are based on typical industry practices in our region and meet or exceed those practices for the components of your home. However, we reserve the right to exceed these guidelines if common sense or individual circumstances dictate, without being obligated to exceed all guidelines to a similar degree or for all homeowners. If a warranty item arises that is not addressed by these warranty guidelines, the NAHB Residential Construction Performance Guidelines shall be referenced to address the issue*

*A home, like an automobile, requires care and attention from day one. General Homeowner maintenance is essential to providing a quality home for a lifetime. Many times a minor adjustment or repair done immediately saves a more serious, time-consuming, and sometimes costly repair later. Lack of routine maintenance can also void applicable warranty coverage on all or part of your home. The attention provided by each homeowner contributes significantly to the overall desirability of the community. We recognize that it is impossible to anticipate and describe every attention needed for good home care, but we have covered many important details in this section. Each topic includes suggestions for use and maintenance followed by Miller Custom Homes' warranty guidelines. This manual may discuss some components that are not present in your home.*

*We make every effort to keep our information current and accurate. However, if any detail in our discussion conflicts with the manufacturer's recommendations, the manufacturer recommendations must be followed. Activate specific manufacturer warranties by completing and mailing the registration cards included with their materials. In some cases, manufacturer warranties may extend beyond the first year; it is in your best interests to be apprised of such coverage. By caring for your new home attentively, you insure your enjoyment of it for years.*

### **Limited Warranty Guidelines**

While we strive to build a defect free home, we are realistic enough to know we may make mistakes. When we do, we will correct them. The purpose of this is to let you know what our quality standard is for the common concerns that typically come up in a new home. We suggest that you carefully read through this information.

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## **WARRANTY PROCEDURES**

### **One-Year Warranty**

During the first year of ownership, the home shall be free from defects caused by faulty workmanship and defective materials due to non-compliance with building standards. The period of ownership commences on the date of closing, unless otherwise specified by Miller Custom Homes.

### **Two-Year Warranty**

During the first two years of ownership, the home shall be free from defects caused by faulty installation of plumbing, electrical, heating and cooling systems.

### **Ten-Year Warranty**

During the first 10 years of ownership, the home shall be free from major structural defects. "Major structural defects" means actual damage to the load-bearing function and which vitally affects, or is imminently likely to affect the use of the dwelling for residential purposes to the extent that the home becomes unsafe, unsanitary, or otherwise unlivable. Such load-bearing components may include:

1. Foundation systems and footings
2. Beams
3. Girders
4. Lintels
5. Columns
6. Bearing Walls
7. Floor Systems
8. Roof framing systems

Damage to the following non-load bearing portions of the home may be covered by the One Year Limited Warranty, but do not constitute a major structural defect:

1. Roofing and sheathing
2. Drywall and plaster
3. Exterior siding
4. Brick, stone, or stucco veneer
5. Floor covering material
6. Wall tile and other wall coverings
7. Non-load bearing walls and partitions
8. Concrete floors in attached garages and basements that are built separately from foundation walls or other structural elements of the home

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9. Electrical, plumbing, heating, cooling and ventilation systems
10. Appliances, fixtures, and items of equipment
11. Paint
12. Doors and windows
13. Trim
14. Cabinets
15. Hardware
16. Insulation

### **Exclusions**

This Limited Warranty **shall not** extend to, include or be applicable to any of the following:

- Any component of you home, whether warranted or not, which has been constructed, altered, repaired modified or replaced by anyone other than Miller Custom Homes', authorized employees or agents.
- Any defect or damage caused by any act, negligence or failure to properly use, operate, clean, maintain or protect any component of your home by you or any other occupant of the home or by anyone other than one of Miller Custom Homes', authorized employees or agents.
- Extermination of and damaged caused by insects/mice.
- Loss resulting from damages to real property other than the home itself.
- Loss or damage resulting from toxic or carcinogenic fumes or substances.
- Loss or damage caused by or resulting from civil disturbances, riots, fire, explosion, flooding, wind-driven water, changes in the underground water table, floods, mud slides, smoke, earthquake or other Acts of God, falling objects, vehicles or other events not reasonable foreseeable at the time of construction or which are beyond Miller Custom Homes reasonable control.
- Defects in buildings or other structures or improvements not attached to the home, including, but not limited to, detached garages and carports, driveways, walkways, patios, boundary walls, retaining walls, fences, landscaping (including sodding, seeding, shrubs, trees, and plantings), or any other improvements not a part of the home itself.
- Damage to the extent it is caused or made worse by the failure of the Homeowner to give proper notice to Miller Custom Homes, of any defect within a reasonable time.
- Changes of the grading of the ground by anyone other than Miller Custom Homes, its employees or agents.
- Changes, alterations or additions made to the home by anyone after actual occupancy.
- Dampness or condensation due to the failure of the Homeowner to maintain adequate ventilation.
- Any loss or damage in which the Homeowner has not taken appropriate and timely action to minimize.

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## **WARRANTY PROCEDURES**

- Normal wear and tear and normal deterioration.
- Loss or damage caused by or resulting from seepage of water.
- Any loss, damage, defect, cost or expense which is caused, in whole or in part, by any peril or occurrence for which compensation is provided by legislation or which is covered by other insurance or public funds.
- Any loss or damage that arises while the home is being used primarily for non-residential purposes.
- Bodily or personal injury of any kind (including physical or mental pain and suffering and emotional distress) medical hospital, rehabilitation of other incidental expenses, or damage to personal property.
- Loss or damage due to abnormal loading on floors that exceed design loads as mandated by codes.
- Cost of shelter, transportation, food, moving, storage or other incidental expenses related to relocation during repair or other costs due to loss of use, inconvenience or annoyance.
- Any claim for which Miller Custom Homes has been notified after an unreasonable delay or later than (30) days after the expiration of the applicable warranty period for the item involved or for which we are not given access to the home for service calls.
- Failure by the Homeowner(s) or by anyone other than Miller Custom Homes, its employees or agents, to comply with warranty requirements of manufacturers of appliances, fixtures, equipment or any other consumer products.

### **Normal Conditions Deemed Non-Warranted**

***Miller Custom Homes determines the method of repair of damaged products and materials. Any necessary repairs made will be done in a way as to match surrounding areas as closely as possible.***

1. *Floor Squeaks*
2. *Discoloration of brick / mortar, discontinued patterns, dye lot, color variations*
3. *Chips, scratches or mars not noted during pre-closing walk-through*
4. *Extractive bleeding or staining due to tannins and moisture in wood*
5. *Cracks in Concrete*
6. *Cracks in stucco.*

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## **WARRANTY PROCEDURES**

### **1 - Site Work**

- 1-1. Observation:** The ground has settled around the foundation, over utility trenches, or in other areas.

**Performance Guidelines:** Settling of ground around foundation walls, over utility trenches, or in other filled areas shall not interfere with water drainage away from the home.

**Corrective Measure:** If the contractor has completed final grading no corrective action is required by the contractor. The owner will be responsible for filling in settled areas and removal and replacement of such fill.

- 1-2. Observation:** The site does not drain properly.

**Performance Guideline:** the contractor to ensure proper drainage away from the home shall have established the necessary grades and swales. Standing or ponding water shall not remain for extended periods in the immediate area of the house after a rain (generally no more than 24 hours), except in swales that drain other areas or in areas where sump pumps discharge. In these areas a longer period can be anticipated (generally no more than 48 hours). The owner should anticipate the possibility of standing water after an unusually heavy rainfall. No grading determination shall be made while frost or snow is on the ground or while the ground is saturated.

**Corrective Measure:** The contractor is responsible only for initially establishing the proper grades and swales. The owner is responsible for maintaining such grades and swales once the contractor has properly established them.

- 1-3. Observation:** The site has soil erosion.

**Performance Guideline:** Contractor is not responsible for soil erosion due to acts of God, or other conditions beyond the contractor's control.

**Corrective Measure:** No action required.

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### 2 - Foundation

#### General

**2-1. Observation:** The foundation is out of square.

**Performance Guideline:** As measured at the top of the foundation wall, the diagonal of a triangle with sides of 12 feet and 16 feet shall be no more than 1 inch more or less than 20 feet, unless the owner and contractor agree to intentionally build an addition to an existing structure out of square in order to match or compensate for inaccuracies in the existing structure.

**Corrective Measure:** The contractor will make necessary modifications to any foundation not complying with the performance guidelines for squareness to provide a satisfactory appearance. The contractor may square the first floor deck by cantilevering over the foundation where out of square.

**Discussion:** Squareness is primarily an aesthetic consideration. Regularly repeated geometric patterns in floor and ceiling coverings show a gradually increasing or decreasing pattern along an out of square wall. The guideline tolerance of plus or minus  $\frac{1}{2}$  inch in the diagonal allows a maximum increasing or decreasing portion of about  $\frac{3}{8}$  inch in a 12-foot wall of a 12x16-foot room. However, a contractor and client may agree to build an addition out of square in order to keep a new exterior wall on line with an existing wall of an out of square house.

The corrective measure emphasizes the primarily aesthetic nature of squareness and makes the criteria for correction “a satisfactory appearance.” This criteria allows the contractor to make either a structural change, if the defect is discovered in time, or some cosmetic change to hide the defect, if the construction is in the finishing stages when the defect is discovered.

**2-2. Observation:** The foundation is out of level.

**Performance Guideline:** As measured at the top of the foundation wall, no point shall be more than  $\frac{1}{2}$  inch higher or lower than any point within 20 feet, unless the owner and contractor agree to intentionally build an addition to an existing structure out of level in order to match or compensate for inaccuracies in the existing structure.

**Corrective Measure:** The contractor will make necessary modifications to any foundation not complying with the performance guidelines for

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## WARRANTY PROCEDURES

levelness to comply with the performance guideline. This can be affected by leveling the sills with shims, mortar, or appropriate fillers.

**Discussion:** Levelness is both an aesthetic and functional consideration. Out of level floors can cause “stair stepping” of 4x8-foot sheathing, siding, paneling and cabinets, and square walls must be “racked” into parallelograms when plumbing is installed. Liquids can run off counter tops, and, in extreme cases, people will perceive that they are walking uphill or downhill. The contractor and the owner may agree to build an addition out of level in order to keep the floor of an addition on the same plane, and the roof ridge on the same line, as those of an existing, out of level structure.

**2.3. Observation:** Efflorescence is present on surface of basement floor.

**Performance Guideline:** This is a normal condition.

**Corrective Measure:** None.

**2-4. Observation:** Crack in concrete footing.

**Performance Guideline:** Cracks greater than 1/4 inch in width are considered excessive.

**Corrective Measure:** The contractor shall repair any cracks in excess of the performance guideline.

### **Slab and Basement Floor**

**2-5. Observation:** Concrete slab within the structure has separated or moved at expansion and contraction joints.

**Performance Guideline:** Concrete slabs within the structure are designed to move at expansion and contraction joints.

**Corrective Measure:** None.

**2-6. Observation:** Concrete floor or slab is uneven.

**Performance Guideline:** Except for basement floors or where a floor or portion of floor has been designed for specific drainage purposes, concrete floors in rooms designed for habitability shall not have pits, depressions, or areas of unevenness exceeding 3/8 inch in 32 inches.

**Corrective Measure:** The contractor will correct or repair the floor to meet the performance guideline.

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**Discussion:** Proper repair can be affected by thoroughly cleaning, filling, and troweling the surface level using a latex-fortified cement mixture or other materials designed to fill cracks and bond concrete.

**2-7. Observation:** The basement floor is cracked.

**Performance Guideline:** Minor cracks in concrete basement floor are normal. Cracks exceeding 1/4 inch in width or 1/4 inch in vertical displacement shall be repaired.

**Corrective Measure:** The contractor will repair cracks that do not meet the performance guideline.

**Discussion:** Proper repair can be affected by thoroughly cleaning, filling, and troweling the surface using a latex-fortified cement mixture or other materials designed to fill cracks and bond concrete.

**2-8. Observation:** Interior concrete work is pitting, scaling, or spalling.

**Performance Guideline:** Interior concrete surfaces shall not disintegrate. Aggregate pops are normal; minor scaling is not controllable at all. Exterior surfaces may not be warranted.

**Corrective Measure:** The contractor will repair defective concrete surfaces. The contractor is not responsible for deterioration caused by salt, chemicals, mechanical implements, or other factors beyond the contractor's control.

### **Slab-on-Grade Floor**

**2-9. Observation:** Cracks have developed in concrete slab-on-grade floor with finished flooring.

**Performance Guideline:** Cracks that rupture the finished flooring material shall be repaired.

**Corrective Measure:** The contractor will repair cracks, as necessary, and repair the finish flooring to match existing as close as possible.

**Discussion:** Proper repair can be affected by thoroughly cleaning, filling, and troweling the surface using a latex-fortified cement mixture or other materials designed to fill cracks and bond concrete.

**2-10. Observation:** Concrete in slab-on-grade floor is cracked (horizontal or vertical separation).

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**Performance Guideline:** Cracks in slab-on-grade floors shall not exceed 3/16 inch in width or in vertical displacement.

**Corrective Measure:** The contractor will repair cracks to meet the performance guideline.

**Discussion:** Proper repair can be affected by thoroughly cleaning, filling, and troweling the surface using a latex-fortified cement mixture or other materials designed to fill cracks and bond concrete.

**2-11. Observation:** Efflorescence is present on the surface of the slab.

**Performance Guideline:** This is a typical condition caused by moisture reacting with the soluble salts in concrete and forming harmless carbonate compounds.

**Corrective Measure:** Because efflorescence is a typical chemical reaction within concrete, no corrective measures are required of the contractor.

**Discussion:** Efflorescence is evidenced by the presence of a white film on the surface of the concrete. It is a particularly common occurrence where masonry or concrete are in contact with high moisture levels.

### **Basement Walls**

**2-12. Observation:** Concrete block basement wall is cracked.

**Performance Guideline:** Cracks in concrete block basement walls shall not exceed 1/4 inch in width.

**Corrective Measure:** The contractor will repair cracks to meet the performance guideline.

**Discussion:** Proper repair can be affected by thoroughly cleaning, filling, and troweling the surface using a latex-fortified cement mixture or other materials designed to fill cracks and bond concrete.

**2-13. Observation:** Concrete block basement wall is out of plumb.

**Performance Guideline:** Block concrete walls shall not be out of plumb greater than 1 inch in 8 feet when measured from the base to the top of the wall.

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**Corrective Measure:** The contractor shall repair any deficiencies in excess of the performance guideline. If the wall is to remain unfinished per contract, and the wall meets building codes as evidenced by passed inspections, then no corrective action is required.

**2-14. Observation:** Concrete block basement wall is bowed.

**Performance Guideline:** Block concrete walls shall not bow in excess of 1 inch in 8 feet when measured from the base to the top of the wall.

**Corrective Measure:** The contractor shall repair any deficiencies in excess of the performance guideline. If the wall is to remain unfinished per contract, and the wall meets building codes as evidenced by passed inspections, then no corrective action is required.

### **Poured Concrete**

**2-15. Observation:** Exposed concrete wall has holes in it.

**Performance Guideline:** Holes larger than 1 inch in diameter or 1 inch in depth are unacceptable.

**Corrective Measure:** The contractor will repair holes that do not meet the performance guideline.

**Discussion:** Proper repair can be affected by thoroughly filling the hole. The repaired area will not match the color of the surrounding concrete.

**2-16. Observation:** Poured concrete basement wall is out of plumb.

**Performance Guideline:** Concrete walls shall not be out of plumb greater than 1 inch in 8 feet when measured from the base to the top of the wall.

**Corrective Measure:** The contractor shall repair any deficiencies in excess of the performance guideline. If the wall is to remain unfinished per contract, and the wall meets building codes as evidenced by passed inspections, then no corrective action is required.

**2-17. Observation:** Poured concrete basement wall is bowed.

**Performance Guideline:** Concrete walls shall not bow in excess of 1 inch in 8 feet when measured from the base to the top of the wall.

**Corrective Measure:** The contractor shall repair any deficiencies in excess of the performance guideline. If the wall is to remain unfinished

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per contract, and the wall meets building codes as evidenced by passed inspections, then no corrective action is required.

- 2-18. Observation:** The basement wall is cracked (horizontal or vertical separation).

**Performance Guideline:** Cracks in basement walls shall not allow exterior water to leak into the basement.

**Corrective Measure:** The contractor will repair cracks that do not meet the performance guideline when leaks are present.

**Discussion:** Shrinkage cracks are not unusual and are inherent in the drying process. They should be expected in basement walls due to the nature of masonry block and concrete. Cracks may be vertical, diagonal, horizontal, or stepped in masonry joints. The only cracks considered under warranty claims are cracks that permit water penetration or horizontal cracks that cause a bow in the wall.

### **Moisture and Leaks**

- 2-19. Observation:** Dampness is evident on basement wall or floor.

**Performance Guideline:** Dampness caused by wicking through the basement walls or floor and condensation of water vapor on cool walls and floor are not the responsibility of the contractor.

**Corrective Measure:** None. Dampness prevention is the responsibility of the owner.

**Discussion:** The owner's failure to maintain a proper grade away from the house can contribute to dampness. Condensation also contributes to dampness.

- 2-20. Observation:** The basement leaks.

**Performance Guideline:** Leaks resulting in actual trickling of water shall be repaired. Leaks caused by landscaping improperly installed by the owner, or by the failure of the owner to maintain proper grades, are not the contractor's responsibility. Walls and floors of new construction may become damp as concrete, mortar, and other materials dry, and dampness alone is not considered a deficiency.

**Corrective Measure:** The contractor will take such action as necessary to correct basement leaks except where the cause is determined to result from the owner's actions or negligence.

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### Crawl Space

**2-21. Observation:** Water accumulates in interior crawl space.

**Performance Guideline:** Crawl spaces should be graded and drained properly to prevent water from accumulating deeper than 3/4 inch and larger than 9 square feet in the crawl space area.

**Corrective Measure:** The contractor will take the necessary corrective measures to create positive flow within the crawl space to discharge to the exterior of the structure.

**2-22. Observation:** Condensation is evident on the walls, earth, or floor insulation in the crawl space.

**Performance Guideline:** Condensation in the crawl space shall not result from lack of adequate ventilation as required by code. Condensation resulting from other causes is not the responsibility of the contractor.

**Corrective Measure:** The contractor will ensure that ventilation meets the appropriate code requirements. Further reduction of condensation is an owner maintenance responsibility.

**Discussion:** Temporary conditions may cause condensation that cannot be eliminated by ventilation and a vapor barrier because:

- Night air gradually cools the interior surfaces of the crawl space. In the morning, moisture picked up by sun-warmed air is carried into the crawl space and condenses on cool surfaces.
- At night, outside air may rapidly cool foundation walls and provide a cool surface on which moisture may condense.
- If the house is left unheated in the winter; the floors and walls may provide cold surfaces on which moisture in the warmer crawl space air may condense
- Excessive moisture inside a heated house may hit the dew point within or on the colder bottom surface of vapor-permeable floor insulation. Placing a vapor barrier between the insulation and the floor sheathing can reduce the condensation. If condensation must be entirely eliminated, the owner can do so by sealing and dehumidifying or heating the crawl space, or by heating and dehumidifying the house.

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### **Columns**

**2-23. Observation:** Wood column is bowed or out of plumb.

**Performance Guideline:** Wood columns shall not bow in excess of 3/4 inch in 8 feet or be out of plumb in excess of 1/8 inch in 12 inches when measured from the base to the top of the column, not to exceed 3/4 inches in 8 feet.

**Corrective Measure:** The contractor shall repair any deficiencies in excess of the performance guideline.

**2-24. Observation:** Concrete column is installed bowed or out of plumb.

**Performance Guideline:** Concrete columns shall not be installed with a bow in excess of 1 inch in 8 feet. They should not be installed out of plumb in excess of 1/4 inch in 12 inches when measured from the base to the top of the column, not to exceed 1 inch in 8 feet.

**Corrective Measure:** The contractor shall repair any deficiencies in excess of the performance guideline.

**2-25. Observation:** Masonry column is out of plumb.

**Performance Guideline:** Masonry columns should not be out of plumb in excess of 1/4 inch in 12 inches when measured from the base to the top of the column, not to exceed 1 inch in 8 feet.

**Corrective Measure:** The contractor shall repair any deficiencies in excess of the performance guideline.

**2-26. Observation:** Steel column is out of plumb.

**Performance Guideline:** Steel columns shall not be out of plumb in excess of 3/8 inch in 12 inches when measured from the base to the top of the column.

**Corrective Measure:** The contractor shall repair any deficiencies in excess of the performance guideline.

## **3 - Wood Floor Framing**

### ***Beams***

**3-1. Observation:** Springiness, bounce, shaking, or visible sag is observed in floor or roof.

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**Performance Guideline:** All beams, joists, rafters, headers, and other structural members shall be sized, and fasteners spaced, according to the National Forest Products Association span tables, engineered drawings, manufacturers' specifications, or local building codes.

**Corrective Measure:** The contractor will reinforce or modify, as necessary, any floor, wall ceiling, or roof not meeting the performance guideline.

**Discussion:** Deflection may indicate insufficient stiffness in the lumber, or may reflect an aesthetic consideration independent of the strength and safety requirements of the lumber. Joists and rafters are required to meet standards for both stiffness and strength. The span tables allow, under full design loadings, a maximum deflection equal to 1/360 of the span for floor and ceiling joists (3/8 inch in 12 feet), 1/240 for rafters up to 3/12 in pitch (1/2 inch in 12 feet), and 1/180 for rafters over 3/12 in pitch (3/4 inch in 12 feet). Individual clients may not be satisfied with the deflection limits built into the tables. When a customer's preference is made known before construction, the contractor and the owner may agree upon a higher standard.

### 3-2. **Observation:** Wood beam or post is split.

**Performance Guideline:** Beams and posts, especially those 2 1/2 inches or greater in thickness (which normally are not kiln dried) will sometimes split as they dry subsequent to construction. Such splitting is usually not a structural concern if posts and beams have been sized according to National Forest and Paper Association span tables. Unfilled splits exceeding 1/4 inch in width and all splits exceeding 3/8 inch in width and more than 4 inches in length at the time of installation or that develop during the warranty period are unacceptable.

**Corrective Measure:** The contractor will repair or replace any beam or post with a defect that does not meet the guideline. Filling splits is acceptable for widths up to 3/8 inch.

**Discussion:** Some characteristics of drying wood are beyond the control of the contractor and cannot be prevented. Compensation is made in span tables for the probable reduction in strength resulting from splitting caused by drying. Therefore, splitting is primarily an aesthetic concern rather than a structural problem. "Checks and splits which occur during the drying of lumber have the effect of reducing the area in the plane of shear resistance. Consequently, laboratory data developed for shear parallel to grain are reduced substantially for design purposes in order to accommodate the probability of the occurrence of checks and splits after drying.

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**3-3. Observation:** Wood beam or post is twisted or bowed.

**Performance Guideline:** Beams and posts, especially those 3 1/2 inches or greater in thickness (which normally are not kiln dried) will sometimes twist or bow as they dry subsequent to construction. Twisting or bowing are usually not a structural concern if posts and beams have been sized according to National Forest and Paper Association span tables. Bows and twists exceeding 3/4 inch in an 8-foot section are unacceptable.

**Corrective Measure:** The contractor will repair or replace any beam or post with a defect that exceeds the guideline.

**3-4. Observation:** Wood beam or post is cupped.

**Performance Guideline:** Beams and posts, especially those 3 1/2 inches or greater in thickness (which normally are not kiln dried) will sometimes cup as they dry subsequent to construction. Cupping is usually not a structural concern if posts and beams have been sized according to National Forest and Paper Association span tables. Cups exceeding 1/4 inch in 5 1/2 inches are unacceptable.

**Corrective Measure:** The contractor will repair or replace any beam or post with a defect that does not meet the guideline.

### **Plywood and Joists**

**3-5. Observation:** Floor squeaks or the sub-floor appears loose.

**Performance Guideline:** Squeaks caused by a loose sub-floor are unacceptable, but totally squeak-proof floors cannot be guaranteed.

**Corrective Measure:** The contractor will refasten any loose sub-floor or take other corrective action to eliminate squeaking to the extent possible within reasonable repair capability without removing floor and ceiling finishes.

**Discussion:** Floor squeaks may occur when a sub-floor that has come loose from the joists is deflected by the weight of a person and rubs against the nails that hold it in place. The sub-floor or joists may be bowed, and the nails also may be expelled from the wood during drying. Movement may occur between the joists and bridging or other floor members when one joist is deflected while the other members remain stationary. Gluing the sub-floor is an acceptable method of code compliance in certain jurisdictions. Re-nailing floor joists with ring-shank nails will also substantially reduce severe floor squeaks. Because the

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performance guideline requires the contractor to make a reasonable attempt to eliminate squeaks without requiring removal of floor and ceiling finishes, nailing loose sub-flooring with casing nails into the carpet surface and countersinking the head is an acceptable practice.

**3-6. Observation:** Wood floor is uneven.

**Performance Guideline:** Floors shall not have more than a ¼ inch ridge or depression within any 32-inch measurement. Allowable floor and ceiling joist deflections are governed by the local approved building codes.

**Corrective Measure:** The contractor will correct or repair to meet the performance guideline.

**3-7. Observation:** Wood floor is out of square.

**Performance Guideline:** The diagonal of a triangle with sides of 12 feet and 16 feet along the edges of the floor shall be no more than 1/2 inch more nor less than 20 feet. For remodeling projects, the owner and the contractor may agree to build a wood floor out of square in order to match or otherwise compensate for pre-existing conditions.

**Corrective Measure:** The contractor will make the necessary modifications to any floor not complying with the performance guideline for squareness.

**Discussion:** Squareness is primarily an aesthetic consideration. Regularly repeated geometric patterns in floor and ceiling coverings show a gradually increasing or decreasing pattern along an out of square wall. The guideline tolerance of plus or minus 1/2 inch in the diagonal allows a maximum increasing or decreasing portion of about 3/8 inch in a 12-foot wall of a 12x16-foot room. However, a contractor and client may agree to build an addition out of square in order to keep a new exterior wall on line with an existing wall of an out of square house.

The corrective measure emphasizes the primarily aesthetic nature of squareness and makes the criteria for correction “a satisfactory appearance.” This criteria allows the contractor to make either a structural change, if the defect is discovered in time, or some cosmetic change to hide the defect, if the construction is in the finishing stages when the defect is discovered.

**3-8. Observation:** Wood floor is out of level.

**Performance Guideline:** No point on the surface of a wood floor shall be more than 1/2 inch higher or lower than any other point on the surface within 20 feet, or proportional multiples of the preceding dimensions. For

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remodeling projects, the owner and the contractor may agree to build a wood floor out of level in order to match or otherwise compensate for pre-existing conditions.

**Corrective Measure:** The contractor will make the necessary modifications to any floor not complying with the performance guideline for levelness. Allowances should be allowed for shrinkage, cantilevers, and concentrated loads.

**Discussion:** Levelness is both an aesthetic and functional consideration. Out of level floors can cause “stair stepping” of 4x8-foot sheathing, siding, paneling and cabinets, and square walls must be “racked” into parallelograms when plumbing is installed. Liquids can run off counter tops, and, in extreme cases, people will perceive that they are walking uphill or downhill. The contractor and the owner may agree to build an addition out of level in order to keep the floor of an addition on the same plane, and the roof ridge on the same line, as those of an existing, out of level structure.

- 3-9. Observation:** Deflection observed in floor or roof constructed of wood I-joists.

**Performance Guideline:** All beams, joists, rafters, headers, and other structural members constructed of wood I-joists shall be sized, and fasteners spaced, according to manufacturer’s specification for length and spacing.

**Corrective Measure:** The contractor will reinforce or modify, as necessary, any floor, wall, ceiling, or roof not meeting the performance guideline.

**Discussion:** Deflection may indicate an aesthetic consideration independent of the strength and safety requirements of the lumber. When a customer’s preference is made known before construction a higher standard may be agreed upon in writing by the contractor and the owner.

## 4 - Walls

### Structural

- 4-1. Observation:** Wood framed wall is out of plumb.

**Performance Guideline:** Wood framed walls shall not be more than 3/8 inch out of plumb for any 32 inches in any 8 foot vertical measurement.

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**Corrective Measure:** The contractor will repair to meet the performance guideline.

- 4-2. **Observation:** The wall is bowed.

**Performance Guideline:** All interior and exterior walls have slight variances in their finished surface. Walls shall not bow more than 1/2 inch out of line within any 32-inch horizontal measurement, or 1/2 inch within any 8-foot vertical measurement.

**Corrective Measure:** The contractor will repair to meet the performance guideline.

- 4-3. **Observation:** Exterior wall leaks because of inadequate caulking.

**Performance Guideline:** Joints and cracks in exterior wall surfaces and around openings shall be properly caulked to prevent the entry of water.

**Corrective Measure:** The contractor will repair or caulk joints and cracks in exterior wall surfaces, as required to correct deficiencies, one time only during the warranty period. Even when properly installed, caulking will shrink and must be maintained by the owner.

### **Insulation**

- 4-4. **Observation:** Insulation is insufficient.

**Performance Guideline:** The contractor shall install insulation according to R-Values designated in the contract documents or local codes as applicable. Insulation shall be installed to meet the locally accepted practices.

**Corrective Measure:** The contractor will install insulation to meet the performance guideline.

### **Windows**

- 4-5. **Observation:** Window is difficult to open or close.

**Performance Guideline:** Windows should require no greater operating force than that described in manufacturer's specifications.

**Corrective Measure:** The contractor will correct or repair as required to meet the performance guideline.

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**4-6. Observation:** Window glass is broken and/or screen is damaged.

**Performance Guideline:** None.

**Corrective Measure:** Broken glass or screens not reported to the contractor prior to acceptance of the job are the owner's responsibility.

**4-7. Observation:** Scratches appear on surface of glass and mirror.  
**Performance Guideline:** Glass or mirror surfaces shall not have scratches visible from 10 feet under normal lighting conditions.

**Corrective Measure:** The contractor shall replace any scratched glass or mirror surface is noted at or before the acceptance of the project.

**4-8. Observation:** During rains, water appears on interior corner of glazed window unit.

**Performance Guideline:** Water leakage from improper installation is unacceptable.

**Corrective Measure:** The contractor shall repair any deficiencies attributable to improper installation.

**Discussion:** Leakage at the glazing interface is covered under the manufacturer's warranty.

### **Exterior Doors**

**4-9. Observation:** Exterior door is warped.

**Performance Guideline:** Exterior doors shall not warp to the extent that they become inoperable, cease to be weather-resistant, or exceed National Wood Window and Door Association Standards of 1/4 inch measured diagonally from corner to corner.

**Corrective Measure:** The contractor will correct or replace exterior doors that do not meet the performance guideline.

**Discussion:** Exterior doors will warp to some degree because of the difference in the temperature between inside and outside surfaces.

**4-10. Observation:** Raw material shows at the edges and backside of inset panel on exterior door during the manufacturing process.

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**Performance Guideline:** Door panels will shrink and expand because of temperature and/or humidity changes, and may expose unpainted surfaces. This does not constitute a defect.

**Corrective Measure:** None.

**4-11. Observation:** Door panel is split.

**Performance Guideline:** Split panels shall not allow light to be visible through the door.

**Corrective Measure:** One time only, the contractor will repair, paint, or stain the split panel that does not meet the performance guideline once during the warranty period.

**4-12. Observation:** Exterior door sticks.

**Performance Guideline:** Exterior doors shall operate smoothly, except that wood exterior doors may stick during occasional periods of high humidity.

**Corrective Measure:** The contractor will adjust or replace the door to meet the performance guideline.

**Discussion:** Exterior doors will warp to some degree because of the difference in the temperature between inside and outside surfaces

**4-13. Observation:** Exterior door will not shut completely.

**Performance Guideline:** Exterior doors shall shut completely.

**Corrective Measure:** The contractor will adjust or replace the door to meet the performance guideline.

**Discussion:** Exterior doors will warp to some degree because of the difference in the temperature between inside and outside surfaces.

**4-14. Observation:** Plastic molding behind storm door melts from exposure to sunlight.

**Performance Guideline:** The plastic moldings behind the storm doors should not melt if the storm panel is removed and reinstalled by the owner during normal maintenance operations.

**Corrective Measure:** None.

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**Discussion:** Plastic moldings may melt if the prime door is covered by a storm door panel during a warm season, or if it faces the sun. This is not a defect of the door, but a problem caused by the addition of the storm panels. The owner is also cautioned to follow manufacturer's recommendations on painting on the moldings with a dark color, with or without the use of a storm panel. Dark color molding is likely to sag and should be avoided.

- 4-15. Observation:** Door swings open or closed by the force of gravity.  
**Performance Guideline:** Exterior doors shall not swing open or closed by the force of gravity alone. For remodeling projects, this guideline does not apply where a new door is installed in an existing wall that is out of plumb.

**Corrective Measure:** The contractor will adjust the door to prevent it from swinging open or closed by the force of gravity.

- 4-16. Observation:** Gaps are visible around exterior door edge, doorjamb, and threshold.

**Performance Guideline:** Gaps shall not vary greater than 3/16 inch.

**Corrective Measure:** The contractor will repair existing unit to meet performance guideline.

- 4-17. Observation:** Exterior door hardware or kick plate has tarnished.

**Performance Guideline:** Finishes on door hardware installed by contractor are covered by manufacturer's warranty.

**Corrective Measure:** None. Owner to contact manufacturer.

- 4-18. Observation:** Sliding patio door or screen will not stay on track.

**Performance Guideline:** Sliding patio doors and screens shall slide properly on their tracks at the time the job is accepted. The cleaning and maintenance necessary to preserve proper operation are an owner responsibility.

**Corrective Measure:** The contractor shall repair once during the warranty period.

**Discussion:** Proper operation should be verified by the owner and the contractor at the time the job is accepted.

- 4-19. Observation:** Sliding patio door does not roll smoothly.

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**Performance Guideline:** Sliding patio doors shall roll smoothly at the time the job is accepted. The cleaning and maintenance necessary to preserve proper operation are an owner responsibility.

**Corrective Measure:** The contractor shall repair once during the warranty period.

**Discussion:** Proper operation should be verified by the owner and the contractor at the time the job is accepted.

### Exterior Finish

#### Hardboard Lap Siding

**4-20. Observation:** Hardboard or wood siding is bowed.

**Performance Guideline:** Bows exceeding 1/2 inch in 32 inches are unacceptable.

**Corrective Measure:** The contractor will replace any wood lap siding with bows that does not meet the performance guideline, and finish replacement siding to match the existing siding as closely as practical.

**Discussion:** If the siding is held by nails into studs, expansion caused by increasing relative humidity may cause bulges or waves. Even with proper installation, siding will tend to bow inward and outward in adjacent stud spaces.

**4-21. Observation:** Siding end gap is visible.

**Performance Guideline:** End gaps wider than 3/16 inch are unacceptable.

**Corrective Measure:** The contractor will repair end gaps that do not meet the performance guideline.

**Discussion:** Proper repair can be affected by providing joint covers or by caulking the gap. This is important if the gaps were intentionally made for expansion joints. If the siding is painted, the contractor will paint the new caulking to match existing as close as possible.

**4-22. Observation:** Siding is not installed on a straight line.

**Performance Guideline:** Any piece of lap siding more than 1/2 inch off parallel in 20 feet with contiguous courses is unacceptable, unless the

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owner and the contractor have previously agreed to disregard the performance guideline to match a preexisting structural condition.

**Corrective Measure:** The contractor will reinstall siding to meet the performance guideline for straightness, and replace any siding during removal with new siding.

**Discussion:** For remodeling projects, if the contractor and the owner have agreed that the floor of an addition is to be on a different plan from an existing floor (e.g. out of level), the siding on the addition may not be parallel and in line with the existing siding.

**4-23. Observation:** Face nails are excessively countersunk into hardboard surface.

**Performance Guideline:** Siding nails should not be countersunk to expose visible fiber of hardboard siding.

**Corrective Measure:** The contractor shall repair as necessary to meet performance guideline.

**Discussion:** If visible fiber of hardboard siding is exposed, paint surface to coat fiber; if nail is countersunk 1/16 to 1/8 inch, caulk and touch-up paint; if countersunk in excess of 1/8 inch, putty, caulk and add an additional nail flush to the surface.

### **Tongue and Groove Wood Siding**

**4-24. Observation:** Siding is buckled.

**Performance Guideline:** Siding that projects more than 3/16 inch from the face of adjacent siding is unacceptable.

**Corrective Measure:** The contractor will repair or replace any siding not meeting the performance guideline.

**Discussion:** Buckling is caused by increasing relative humidity, which causes the siding to expand. It can be prevented by leaving space between the tongues and grooves for siding to expand, and by leaving the siding outside for a few days to allow it to adjust to the ambient humidity prior to installation.

**4-25. Observation:** Nail has stained siding.

**Performance Guideline:** Stains exceeding more than 1/2 inch from the nail and readily visible from a distance of more than 20 feet are

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unacceptable. This performance guideline does not apply if “natural weathering” or semi-transparent stain is specified for the job.

**Corrective Measure:** The contractor can choose either to remove stains that do not meet the performance guideline, or to touch-up, paint, or stain the affected area.

**Discussion:** Stains may be from oxidation of nails or leaching of extractives from the wood. Use of galvanized nails (even double hot-dipped) will not necessarily prevent staining. Clear water-repellent sealer applied immediately after installation of siding will retard leaching and rusting.

### **Wood Shake Siding**

**4-26. Observation:** Cedar shakes or shingles have “bled” through paint or stain applied by contractor.

**Performance Guideline:** Resins and extractives bleeding through paint or stain, or blackening of shakes or shingles is unacceptable. This performance guideline does not apply if “natural weathering” or semi-transparent stain is specified for the job.

**Corrective Measure:** One time during the warranty period the contractor will clean and treat shakes to provide a reasonable appearance and prevent further bleeding.

### **Plywood or Other Veneer Siding**

**4-27. Observation:** Siding has delaminated.

**Performance Guideline:** Siding shall not delaminate.

**Corrective Measure:** The contractor will replace delaminated siding that is not covered under manufacturer’s warranty, unless the delaminating was caused by the owner’s actions or negligence. The repaired area may not precisely match the original siding.

**4-28. Observation:** Joints between siding have separated.

**Performance Guideline:** Joint separations exceeding 3/16 inch are unacceptable.

**Corrective Measure:** The contractor will caulk or repair siding as necessary to fill the joint. The repaired area may not match the original siding precisely.

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**4-29. Observation:** Siding is bowed.

**Performance Guideline:** Bows exceeding 1/2 inch in 32 inches are unacceptable.

**Corrective Measure:** The contractor will install additional nails in siding to meet acceptable nailing schedules and will replace any siding that does not meet the guideline because of bows.

**Discussion:** Some waviness in siding is to be expected because of bows in studs. However, proper nailing of siding will straighten most bows.

### **Aluminum or Vinyl Lap Siding**

**4-30. Observation:** Siding is bowed or wavy.

**Performance Guideline:** Some waviness in lap siding is to be expected because of bows in studs. Thermal expansion waves or distortions in aluminum or vinyl lap siding are unacceptable if they exceed 1/4 inch in 16 inches.

**Corrective Measure:** The contractor will correct any thermal expansion waves or distortions to comply with the performance guideline by reinstalling or replacing siding as necessary.

**Discussion:** This problem is caused by the siding being nailed too tightly to the house instead of loosely “hung” in the center of the nail slots, or by not allowing adequate room for the siding to expand at the ends.

**4-31. Observation:** Siding color is faded.

**Performance Guideline:** Any color siding, when exposed to the ultraviolet rays of the sun, will fade and this condition cannot be prevented by the contractor. However, panels installed on the same wall shall fade at the same rate.

**Corrective Measure:** None.

**4-32. Observation:** Aluminum or vinyl lap siding trim is loose from house.

**Performance Guideline:** Trim shall not separate more than 1/4 inch from the house.

**Corrective Measure:** The contractor will reinstall trim or caulk separations as necessary to comply with the performance guideline.

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**4-33. Observation:** Aluminum or vinyl lap siding courses are not parallel with eaves or wall openings.

**Performance Guideline:** Any piece of aluminum or vinyl lap siding more than 1/2 inch off parallel in 20 feet with contiguous courses, or contiguous break such as a soffit line, is unacceptable, unless the owner and the contractor have previously agreed to disregard the performance guideline to match a pre-existing structural condition.

**Corrective Measure:** The contractor will reinstall siding to comply with the performance guideline and replace any siding damaged during removal with new siding.

**Discussion:** For remodeling projects, if the contractor and the owner agree that the floor of an addition is to be on a different plan from the existing floor (for example, a pre-existing out of level condition), the siding on the addition may not be parallel and in line with existing siding.

**4-34. Observation:** Aluminum or vinyl lap siding nail shows under window, door or eave.

**Performance Guideline:** All facing nails shall be of a color to match the trim they affix. No nail heads in the field of the siding shall be exposed.

**Corrective Measure:** The contractor will install trim as necessary to cover the nails.

**Discussion:** Vinyl siding generally should not be face nailed. However, there are appropriate and typical occasions when a single face nail may be needed to reinforce a joint or hold the siding to the wall when it is cut to fit around window frames, doors, roofs, or other obstructions on the wall.

**4-35. Observation:** Aluminum or vinyl lap siding trim accessory is loose from caulking at windows or other wall openings.

**Performance Guideline:** Siding trim accessories shall not separate from caulking at windows or other wall openings during the warranty period.

**Corrective Measure:** The contractor will repair or re-caulk as necessary to eliminate the separation.

**4-36. Observation:** Aluminum or vinyl lap siding is cut crooked.

**Performance Guideline:** Visible cuts in siding shall be straight, plumb, and neat. Crooked cuts greater than 1/8 inch from true are not acceptable.

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**Corrective Measure:** The contractor will repair or replace siding with visible crooked cuts.

**Discussion:** Crooked cuts may cause the panel to have insufficient dimension for expansion with temperature change.

**4-37. Observation:** Aluminum or vinyl lap siding is not cut tight to moldings.

**Performance Guideline:** Gaps between siding and moldings shall not exceed 1/4 inch.

**Corrective Measure:** The contractor will correct to meet the guideline.

### **Cement Board Siding**

**4-38. Observation:** Cement Board is chipped or cracked

**Performance Guideline:** A cement product, this siding is susceptible to the same characteristic limitations as other cement products. Cracks more than 2 inches in length and 1/8 inch in width are considered excessive. Chips or dents not reported at time of substantial completion of the project are not covered.

**Corrective Measure:** Cracked or chipped cement board will be repaired or replaced as necessary, as determined by the contractor.

**4-39. Observation:** Cement Board is improperly fastened.

**Performance Guideline:** Siding shall be nailed flush and perpendicular per the manufacture's instructions. Staples shall not be used.

**Corrective Measure:** Overdriven nail heads or nails driven at an angle shall be filled with cementitious patching compound to match the existing area as closely as possible.

**Discussion:** The manufacturer's instructions include guidelines to reduce chipping or cracking of siding.

### **Masonry and Veneer**

**4-40. Observation:** Masonry or veneer wall is cracked.

**Performance Guideline:** Cracks visible from distances in excess of 20 feet or greater than 1/4 inch in width are not acceptable.

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**Corrective Measure:** The contractor will repair cracks in excess of the performance guideline by tuck pointing, patching, or painting. The contractor will not be responsible for color variation between original and new mortar.

**Discussion:** Small hairline cracks resulting from shrinkage are common to mortar joints in masonry construction and do not represent a defect.

**4-41. Observation:** Exterior cut bricks are of different thickness below openings.

**Performance Guideline:** Cut bricks used in the course directly below an opening shall not vary from one another in thickness by more than 1/4 inch.

**Corrective Measure:** The contractor will repair the wall to meet the performance guideline.

**Discussion:** Bricks are cut to achieve required dimensions at openings and ends of walls when it is not possible to match unit/mortar coursing.

**4-42. Observation:** Masonry or brick veneer course is not straight.

**Performance Guideline:** No point along the bottom of any course shall be more than 1/4 inch higher or lower than any other point within 10 feet along the bottom of the same course, or 1/2 inch in any length, except that the owner and the contractor may agree to match or otherwise compensate for pre-existing conditions.

**Corrective Measure:** The contractor will rebuild the wall as necessary to meet the performance guideline.

**Discussion:** Dimensional variations of the courses depend upon the variations in the brick selected.

**4-43. Observation:** Mortar stain on exterior brick or stone.

**Performance Guideline:** Exterior brick and stone shall be free from mortar stains detracting from the appearance of the finished wall when viewed from a distance of 20 feet.

**Corrective Measure:** The contractor will clean the mortar stains to meet the performance guideline.

**4-44. Observation:** Efflorescence is present on masonry or mortar surface.

**Performance Guideline:** This is a normal condition.

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**Corrective Measure:** None.

**Discussion:** Efflorescence is evidenced by the presence of a white film on the surface of the masonry or mortar. It is a particularly common occurrence where masonry or concrete are in contact with high moisture levels.

### **Stucco and Parge**

**4-45. Observation:** Exterior stucco wall surface is cracked.

**Performance Guideline:** Cracks in exterior stucco wall surfaces shall not exceed 1/8 inch in width.

**Corrective Measure:** The contractor will repair cracks exceeding 1/8 inch in width once during the warranty period.

**Discussion:** “Stucco” includes cementitious coatings and similar synthetically based finishes.

**4-46. Observation:** Colors of exterior stucco walls do not match.

**Performance Guideline:** The colors of new exterior stucco walls may not perfectly match the colors of old exterior stucco walls.

**Corrective Measure:** None.

**Discussion:** Coloring of stucco is unique to field variables and it is impractical to achieve a color match between stucco coatings applied at different times.

**4-47. Observation:** Textures of finishes of exterior stucco walls do not match.

**Performance Guideline:** Texture of new exterior stucco walls may not perfectly match the textures of old exterior stucco walls.

**Corrective Measure:** None.

**Discussion:** “Stucco” includes cementitious coatings and similar synthetically based finishes.

**4-48. Observation:** Separation of coating from base on exterior stucco wall.

**Performance Guideline:** The coating shall not separate from the base on an exterior stucco wall during the warranty period.

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**Corrective Measure:** The contractor will repair areas where the coating has separated from the base.

**Discussion:** Coloring of stucco is unique to field variables and it is impractical to expect to achieve a color match between stucco coatings applied at different times.

### **Exterior Trim**

**4-49. Observation:** Gaps show in exterior trim.

**Performance Guideline:** Joints between exterior trim elements, including siding and masonry, shall not result in joints opened wider than 1/4 inch. In all cases the exterior trim shall perform its function of excluding the elements.

**Corrective Measure:** The contractor will repair open joints that do not meet the performance guideline. Caulking is acceptable.

**4-50. Observation:** Exterior trim board is split.

**Performance Guideline:** Splits wider than 1/8 inch are unacceptable.

**Corrective Measure:** The contractor will repair splits by filling with a filler. Paint touch-up may not match surrounding areas.

**4-51. Observation:** Exterior trim board is bowed or twisted.

**Performance Guideline:** Bows and twists exceeding 3/8 inch in 8 feet are unacceptable.

**Corrective Measure:** The contractor will repair defects that do not meet the performance guideline by refastening or replacing deformed boards.

**4-52. Observation:** Exterior trim board is cupped.

**Performance Guideline:** Cups exceeding 3/16 inch in 5 1/2 inches are unacceptable.

**Corrective Measure:** The contractor will repair defects that do not meet the performance guideline by refastening or replacing deformed boards

# **MILLER CUSTOM HOMES**

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### **Paint, Stain, and Varnish**

**4-53. Observation:** Exterior painting, staining, or refinishing is required because of repair work.

**Performance Guideline:** Repairs required under these performance guidelines shall be finished to match the immediate surrounding areas as closely as practical.

**Corrective Measure:** The contractor will finish repaired areas as indicated.

**4-54. Observation:** Exterior paint or stain has peeled or physically deteriorated.

**Performance Guideline:** Exterior paints and stains shall not fail during the warranty period.

**Corrective Measure:** If exterior paint or stain has peeled or physically deteriorated, the contractor will properly prepare and refinish affected areas and match the color as closely as practical. Where deterioration of the finish affects more than 50 percent of the wall area, the contractor will refinish the entire wall.

**4-55. Observation:** Exterior paint or stain has faded.

**Performance Guideline:** Fading of exterior paints and stains is normal and the degree of fading depends on climatic conditions.

**Corrective Measure:** None.

**4-56. Observation:** Mildew or fungus is visible on exterior painted surfaces.

**Performance Guideline:** Painted or finished surfaces shall be free of observable mildew and fungus at the time the job is completed. However, mildew or fungus may form on painted surfaces over time because of warmth and moisture.

**Corrective Measure:** The contractor will remove mildew and fungus before completion of the job. Subsequent mildew or fungus formation is a condition the contractor cannot control. The owner is responsible for future cleaning of the painted item as necessary to prevent or remove mildew and fungus.

**4-57. Observation:** Varnish or lacquer finishes have deteriorated.

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**Performance Guideline:** Clear finishes used on exterior surfaces may deteriorate rapidly. This is beyond the control of the contractor.

**Corrective Measure:** None.

- 4-58. Observation:** There is paint or stain overspray on surfaces not intended for paint or stain.

**Performance Guideline:** Paint or stain overspray on surfaces not intended for paint or stain that is visible at a distance of 6 feet under normal lighting conditions is not acceptable.

**Corrective Measure:** The contractor shall clean the affected surfaces without damaging the surface.

## **5 - Roofs**

### **Roof Structure**

- 5-1. Observation:** Roof ridge beam deflects.

**Performance Guideline:** Roof ridge beam deflection greater than 1 inch in 8 feet is considered excessive.

**Corrective Measure:** The contractor shall repair any deficiencies, which do not meet the performance guideline.

- 5-2. Observation:** Roof or ceiling rafter bows.

**Performance Guideline:** Rafters that bow greater than 1 inch in 8 feet are considered excessive.

**Corrective Measure:** The contractor shall repair any deficiencies, which do not meet the performance guideline.

### **Roof Sheathing**

- 5-3. Observation:** Roof sheathing is wavy or appears bowed.

**Performance Guideline:** Roof sheathing shall not bow more than 1/2 inch in 2 feet.

**Corrective Measure:** The contractor will straighten bowed roof sheathing or correct swollen joints as necessary to meet the performance guideline.

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**Discussion:** In rare instances the contractor might have to install blocking between the trusses to straighten the sheathing.

### Roof Vents

**5-4. Observation:** An attic vent or louver leaks.

**Performance Guideline:** Attic vents and louvers shall not leak. However, infiltration of wind-driven rain and snow are not considered leaks and are beyond the control of the contractor.

**Corrective Measure:** The contractor shall repair or replace the roof vents as necessary to meet the performance guideline. Contractor shall repair water stains on the wallboard from roof leaks, unless leak was caused by wind-driven rain or snow.

### Roof Installation and Leaks

#### Asphalt Shingles

**5-5. Observation:** The roof or flashing leaks.

**Performance Guideline:** Roofs and flashing shall not leak under normal conditions, except where the cause is determined to result from ice build-up, high winds, acts or God, abnormal conditions, or the owner's actions or negligence.

**Corrective Measure:** The contractor will repair any verified roof and flashing leaks, and water stains on the wallboard, not caused by ice build-up, high winds, acts off God, abnormal conditions, leaves, debris, or the owner's actions or negligence. It is the owner's responsibility to keep the roof drains, gutters, and downspouts free of debris.

**5-6. Observation:** Ice builds up on the roof.

**Performance Guideline:** During prolonged cold spells, ice is likely to build up at the eaves of a roof. This condition occurs when snow and ice accumulate, and gutters and downspouts are frozen.

**Corrective Measure:** None. Prevention of ice build-up on the roof is an owner maintenance item.

**5-7. Observation:** Shingles have blown off.

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**Performance Guideline:** Shingles shall not blow off in winds less than the manufacturer's standards/specifications.

**Corrective Measure:** If shingles were not installed properly, they will be repaired or replaced in the affected area.

**5-8. Observation:** Shingles are not horizontally aligned.

**Performance Guideline:** Shingles should be installed according to the manufacturer's standards/specifications.

**Corrective Measure:** The contractor will remove shingles that do not meet the performance guideline, and replace them with new shingles that are properly aligned.

**Discussion:** For remodeling only: the owner and the contractor may agree prior to installation that the horizontal line of shingles on the roof of an addition need not line up with those of the existing structure if the floors (and hence, the eaves and ridge) are not to be built on the same plane.

**5-9. Observation:** New shingles do not match existing shingles.

**Performance Guideline:** Because of weathering and manufacturing variations, the color of new shingles will not exactly match the color of existing shingles.

**Corrective Measure:** The contractor is not responsible for precisely matching the color of existing shingles.

**5-10. Observation:** Asphalt shingle edges or corners are curled or cupped.

**Performance Guideline:** Asphalt shingle edges and corners need not be perfectly flat. Appearance of shingles should be within manufacturer's standards/specifications.

**Corrective Measure:** None. The owner should contact the manufacturer of the roofing shingle.

**5-11. Observation:** Asphalt shingles do not overhang edges of roof, or hang too far over edges of roof.

**Performance Guideline:** Asphalt shingles shall overhang roof edges by not less than 1/4 inch, and not more than 3/4 inch unless the manufacturer's standards/specifications indicate otherwise.

**Corrective Measure:** The contractor will reposition or replace shingles as necessary to meet the performance guideline.

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**5-12. Observation:** Shading or shadowing pattern appears on new shingle roof.

**Performance Guideline:** Shading or shadowing is a defect only if it results from failure to use shingles of the type specified in the contract.

**Corrective Measure:** The contractor will replace shingles not conforming to contractual requirements.

**5-13. Observation:** Asphalt shingles have developed surface buckling.

**Performance Guideline:** Asphalt shingle surfaces need not be perfectly flat. Buckling higher than 1/4 inch is considered excessive.

**Corrective Measure:** The contractor will fix the affected shingles to meet the performance guideline.

**5-14. Observation:** Sheathing nails have loosened from framing and raised asphalt shingles.

**Performance Guideline:** Nails shall not loosen from roof sheathing to raise asphalt shingles from surface.

**Corrective Measure:** The contractor shall repair all areas as necessary to meet the performance guideline.

**5-15. Observation:** Roofing nails are exposed at ridge of roof.

**Performance Guideline:** Nail heads shall be sealed to prevent leakage.

**Corrective Measure:** The contractor shall repair areas to meet performance guideline.

**5-16. Observation:** Holes from walk boards are visible in asphalt shingles.

**Performance Guideline:** Holes from walk boards shall be flashed and sealed below the asphalt shingle tab to prevent leakage. If patch is visible from ground, the shingle should be replaced.

**Corrective Measure:** The contractor shall repair to meet the performance guideline.

**5-17. Observation:** Existing roof shingles telegraphing through new asphalt shingles.

# **MILLER CUSTOM HOMES**

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**Performance Guideline:** Some telegraphing is normal when re-roofing over existing roofing.

**Corrective Measure:** None.

### **Roll Roofing**

**5-18. Observation:** Water is trapped under roll roofing.

**Performance Guideline:** Water shall not become trapped under roll roofing.

**Corrective Measure:** If water becomes trapped under roll roofing during the warranty period, the contractor will repair or replace the roofing as necessary to meet the performance guideline.

**5-19. Observation:** Roofing is blistered but does not admit water.

**Performance Guideline:** Surface blistering of roll roofing is caused by unusual conditions of heat and humidity acting on the asphalt and cannot be controlled by the contractor.

**Corrective Measure:** None.

**5-20. Observation:** Water is standing on a flat roof.

**Performance Guideline:** Water shall drain from a flat roof except for minor ponding (3/8" in depth) within 24 hours of a rainfall.

**Corrective Measure:** The contractor will take corrective action to assure proper drainage of the roof.

### **Chimney**

**5-21. Observation:** Crack in masonry chimney cap or crown causes leakage.

**Performance Guideline:** It is normal for caps to crack due to expansion and contraction, however unacceptable leaks may occur with cracking.

**Corrective Measure:** If cracking causes leakage, the contractor will repair. Caulking or other sealant is acceptable.

**5-22. Observation:** Brick veneer spalling from chimney surface.

**Performance Guideline:** Spalling of newly manufactured brick should not occur and is unacceptable. Spalling of used brick is acceptable.

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**Corrective Measure:** Contractor will repair newly manufactured brick when spalling occurs.

### **Chimney Flashing**

**5-23. Observation:** Leak in new chimney flashing.

**Performance Guideline:** New chimney flashing shall not leak under normal conditions except where the cause is determined to result from ice build-up or the owner's actions or negligence.

**Corrective Measure:** The contractor will repair leaks in new chimney flashing not caused by ice build-up or the owner's actions or negligence.

### **Gutters and Downspouts**

**5-24. Observation:** Gutter or downspout leaks.

**Performance Guideline:** Gutters and downspouts shall not leak.

**Corrective Measure:** The contractor will repair leaks in gutters and downspouts.

**5-25. Observation:** Gutter overflows during a heavy rain.

**Performance Guideline:** Gutters may overflow during a heavy rain.

**Corrective Measure:** The contractor shall repair if gutters overflow during normal rains.

**Discussion:** The owner is responsible for keeping gutters and downspouts free from debris that could cause overflow.

**5-26. Observation:** Water remains in the gutter after a rain.

**Performance Guideline:** When a gutter is unobstructed by debris, the water level shall not exceed 1/2 inch in depth.

**Corrective Measure:** The contractor will repair the gutter to meet the performance guideline.

**Discussion:** Installing gutters with a minimum 1/32-inch drop in 1 foot will generally prevent water from standing in the gutters. Even so, small amounts of water may remain in some sections of gutter for a short time

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after a rain. In areas with heavy rainfall and/or ice build-up the contractor may consider increasing pitch/fall or adding additional downspouts.

### **Skylights**

**5-27. Observation:** Skylight leaks.

**Performance Guideline:** Skylights shall be installed in accordance with manufacturer's specifications. Leaks resulting from improper installation are unacceptable. Condensation on interior surfaces is not a leak and not considered a defect.

**Corrective Measure:** The contractor will repair any improperly installed skylight to meet the performance guideline.

## **6 - Plumbing**

### **Water Supply System**

**6-1. Observation:** Pipe or fitting leaks.

**Performance Guideline:** No leaks of any kind shall exist in any soil, waste, vent, or water pipe.

**Corrective Measure:** The contractor will make repairs to eliminate leakage.

**6-2. Observation:** Condensation appears on pipes.

**Performance Guideline:** Condensation on pipes may result at certain combinations of temperature and indoor humidity.

**Corrective Measure:** None.

**6-3. Observation:** A faucet or valve leaks.

**Performance Guideline:** No faucet or valve shall leak because of defects in material or workmanship.

**Corrective Measure:** The contractor will repair or replace the leaking faucet or valve.

**6-4. Observation:** Water in plumbing pipe freezes, and the pipe burst.

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**Performance Guideline:** Drain, waste, vent, and water pipes shall be adequately protected to prevent freezing as required by the applicable plumbing code for normally anticipated cold weather and in accordance with the design temperatures established by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers.

**Corrective Measure:** The contractor will correct situations not meeting the applicable code. The owner is responsible for draining or otherwise protecting pipes and exterior faucets exposed to freezing temperatures.

**6-5. Observation:** The water supply system fails to deliver water.

**Performance Guideline:** All on-site service connections to the municipal water main or private water supply are the responsibility of the contractor.

**Corrective Measure:** The contractor will repair the water supply system if the failure results from defective installation or materials. Conditions beyond the control of the contractor that disrupt or eliminate the water supply are not covered.

**6-6. Observation:** Water pipe is noisy.

**Performance Guideline:** Because of the flow of water and pipe expansion the water pipe system will emit some noise. However, the pipes should not make the pounding noise called “water hammer.” The resulting “ticking” or “crackling” sounds generally are to be expected and do not constitute a defect.

**Corrective Measure:** The contractor cannot remove all noises caused by water flow and pipe expansion. However, the contractor will correct the system to eliminate “water hammer.”

### **Plumbing Fixtures**

**6-7. Observation:** The bathtub or shower leaks.

**Performance Guideline:** Bathtubs and showers shall not leak.

**Corrective Measure:** The contractor will repair bathtub or shower leak as necessary to meet the performance guideline.

**Discussion:** Proper repair can be affected by sealing areas around tubs and showers. Maintenance of caulk seals is an owner responsibility.

**6-8. Observation:** Plumbing fixture, appliance, or trim fitting is defective.

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**Performance Guideline:** Plumbing fixtures, appliances, and trim fittings shall comply with their manufacturer's guidelines.

**Corrective Measure:** None. Defective trim fittings, appliances, and fixtures are covered under manufacturer's warranty.

- 6-9. Observation:** The surface of a porcelain or fiberglass plumbing fixture is cracked or chipped.

**Performance Guideline:** Cracks scratches and chips in surfaces of bathtubs and sinks are unacceptable if visible from three feet in normal lights.

**Corrective Measure:** The contractor will not be responsible for repairs unless the damage is reported to the contractor prior to acceptance of the job. If the problems resulted from improper manufacture, than the manufacturer's warranty will take precedence over the contractor's responsibilities.

- 6-10. Observation:** `Fiberglass tub or shower enclosure base flexes.

**Performance Guideline:** To be installed according to manufacturer's specifications.

**Corrective Measure:** Contractor shall repair to meet performance guideline.

- 6-11. Observation:** Manufactured marble vanity top cracks at drain.

**Performance Guideline:** Vanity tops shall not crack when installed with proper sealants at drain connections.

**Corrective Measure:** The contractor shall repair any deficiencies to meet the performance guideline within warranty period.

### **Sanitary Sewer or Septic System**

- 6-12. Observation:** Sewer, fixture, or drain is clogged.

**Performance Guideline:** Sewers, fixtures, and drains shall operate properly.

**Corrective Measure:** The contractor will not be responsible for sewers, fixtures, and drains that are clogged because of the owner's actions or negligence. If a problem occurs, the owner should consult the contractor

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for corrective action. If defective installation is the cause, the contractor is responsible for correcting the problem. If the owner's actions or negligence is the cause, the owner is responsible for correcting the problem. With respect to septic systems, owner actions that constitute negligence under this guideline include but are not limited to the following:

- Connection of sump pump, roof drains, or backwash from a water conditioner into the system.
- Placement of non-biodegradable items into the system.
- Use of a food waste disposer not supplied or approved by the contractor.
- Placement of surfaces not permeable to water over the disposal area of the system.
- Allowing vehicles to drive or park over the disposal area of the system.
- Failure to pump out the septic tank periodically, as required.
- Use which exceeds the standard use of the equipment.

## **7 - Electrical**

### **Fuses and Circuit Breakers**

**7-1. Observation:** Fuse blows or circuit breaker trips.

**Performance Guideline:** Fuses and circuit breakers shall not be triggered by normal usage.

**Corrective Measure:** The contractor will check wiring circuits for conformity with applicable national, state, or local electrical code requirements. The contractor will correct circuitry not conforming to applicable code specifications.

**7-2. Observation:** Ground fault interrupter trips frequently.

**Performance Guideline:** Ground fault interrupters are safety devices installed as part of the electrical system to provide protection against electrical shock. These sensitive devices can be tripped very easily.

**Corrective Measure:** The contractor will install ground fault interrupters in accordance with approved electrical codes. Tripping is to be expected and is not covered unless it is caused by defective installation.

### **Outlets and Lights**

**7-3. Observation:** Electrical outlets, switches, or fixtures malfunction.

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**Performance Guideline:** All electrical outlets, switches, and fixtures shall operate as designed.

**Corrective Measure:** The contractor will repair or replace malfunctioning electrical outlets, switches, and fixtures, if supplied and installed by the contractor.

**7-4. Observation:** Wiring fails to carry its designed load.

**Performance Guideline:** Wiring shall be capable of carrying the designed load for normal residential use.

**Corrective Measure:** The contractor will check the wiring for conformity to applicable local, state, or approved national electrical code requirements. The contractor will repair wiring not conforming to code specifications.

**7-5. Observation:** Ceiling fan vibrates excessively and is noisy.

**Performance Guideline:** The contractor shall install fans per the manufacturer's specifications including blade balances.

**Corrective Measure:** The contractor shall repair any fan installation not in accordance with performance guideline if supplied and installed by the contractor.

**7-6. Observation:** Exhaust fan is ducted to attic or crawl space.

**Performance Guideline:** Fans shall be ducted as per applicable codes.

**Corrective Measure:** The contractor shall repair to meet performance guideline.

**7-7. Observation:** Interior light fixture tarnishes.

**Performance Guideline:** Finishes on light fixtures may be covered under manufacturer's warranty.

**Corrective Measure:** None.

**7-8. Observation:** Electrical receptacle/switch covers protrude from the wall.

**Performance Guideline:** Receptacle/switch should reasonably fit against the wall.

**Corrective Measure:** Covers shall not be more than 1/16 inch from the adjoining wall surface. Rough texture walls may vary.

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### **8 - Interior Climate Control**

#### **Air Infiltration and Drafts**

**8-1. Observation:** Air infiltrates around door or window.

**Performance Guideline:** Some infiltration is usually noticeable around doors and windows especially during high winds. No daylight shall be visible around frame when window or door is closed.

**Corrective Measure:** The contractor shall repair to meet the performance guideline.

**Discussion:** Proper repair can be affected by adjusting or installing weather-stripping around doors and windows. In high-wind areas, the owner may need to have storm windows and doors installed to eliminate drafts.

**8-2. Observation:** A draft comes through electrical outlet.

**Performance Guideline:** Electrical junction boxes on exterior walls may allow cold air to flow through or around an outlet into a room. It may not be possible to eliminate this completely.

**Corrective Measure:** None.

**Discussion:** The owner may need to install foam insulation pads under switch and outlet plates to help decrease drafts.

#### **Ventilation**

**8-3. Observation:** The attic or crawl space is inadequately ventilated.

**Performance Guideline:** The attic and crawl space shall be ventilated as required by the applicable building code.

**Corrective Measure:** The contractor will provide for adequate ventilation. The contractor is not responsible for actions by the owner that interfere with the ventilation system.

#### **Humidity Control and Condensation**

**8-4. Observation:** Condensation or frost appears on window.

**Performance Guideline:** Windows will collect condensation on their interior surfaces when extreme temperature differences and high humidity

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levels occur. Condensation usually results from humid conditions within the home that are created by the owner or during the curing process in a new space.

**Corrective Measure:** Unless the window condensation or frost is directly attributed to faulty installation, it usually results from conditions beyond the control of the contractor. No correction action is required.

### Air-Distribution System

**8-5. Observation:** The ductwork makes noises.

**Performance Guideline:** When metal is heated, it expands, and when cooled, it contracts. The resulting “ticking” or “crackling” sounds generally are to be expected and do not constitute a defect.

**Corrective Measure:** None.

**8-6. Observation:** The ductwork produces excessively loud noises commonly known as oil canning.

**Performance Guideline:** 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.

**Corrective Measure:** The contractor will correct the ductwork to eliminate noise caused by oil canning.

**8-7. Observation:** Noise at register.

**Performance Guideline:** Product should be correctly installed according to manufacturer’s specifications.

**Corrective Measure:** None, if installed correctly. If installed incorrectly contractor will correct according to manufacturer’s specifications.

**Discussion:** Under certain conditions, some noise may be experienced with the normal flow of air even when product is installed correctly. See manufacturer’s specifications.

**8-8. Observation:** Vibrating air handler or Furnace.

**Performance Guideline:** Product should be correctly installed.

**Corrective Measure:** None, if installed correctly. If installed incorrectly, contractor will correct according to manufacturer’s specifications.

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**Discussion:** Under certain conditions, some noise may be experienced with the normal flow of air when product is installed correctly. See manufacturer's specifications.

**8-9. Observation:** The ductwork separates or detaches.

**Performance Guideline:** Ductwork shall remain intact and securely fastened.

**Corrective Measure:** The contractor will reattach and re-secure all separated or unattached ductwork.

### **Heating System**

**8-10. Observation:** The heating system is inadequate.

**Performance Guideline:** The heating system shall be capable of reducing an inside temperature of 70 degrees Fahrenheit, as measured in the center of each room at a height of 5 feet above the floor under local, outdoor winter design conditions as specified in the ASHRAE Handbook:

*Fundamentals.* National, state, or local energy codes shall supersede this performance guideline where such codes have been locally adopted.

**Corrective Measure:** The contractor will correct the heating system to provide the required temperature in accordance with the performance guideline or applicable code specifications. However, the owner will be responsible for balancing dampers and registers and for making other necessary minor adjustments.

**Discussion:** For new living spaces created by remodeling jobs, heating guidelines may not apply to areas where living space has been created without resizing the HVAC system.

### **Central Air-Conditioning System**

**8-11. Observation:** Cooling of rooms is inadequate.

**Performance Guideline:** If air-conditioning is installed by the contractor, the cooling system shall be capable of maintaining a temperature of 78 degrees Fahrenheit, as measured in the center of each room at a height of 5 feet above the floor under local outdoor summer design conditions as specified in the ASHRAE Handbook: *Fundamentals.* In the case of outside temperatures exceeding 95 degrees Fahrenheit, the system shall keep the inside temperature 15 degrees Fahrenheit cooler than the

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outside temperature. National, state, or local codes shall supersede this guideline where such codes have been locally adopted.

**Corrective Measure:** The contractor will correct the cooling system to provide the required temperature in accordance with the performance guideline or applicable code specifications.

**Discussion:** For new living spaces created by remodeling jobs, cooling guidelines may not apply to areas where living space has been created without resizing the HVAC system.

**8-12. Observation:** Condensation line clogs.

**Performance Guideline:** None.

**Corrective Measure:** Condensation lines will eventually clog under normal use. The contractor will provide unobstructed condensation lines at the time the job is accepted. The owner is responsible for maintaining them in that condition.

**8-13. Observation:** Refrigerant line leaks.

**Performance Guideline:** Refrigerant lines shall not leak during normal operation.

**Corrective Measure:** The contractor will repair leaking refrigerant lines and recharge the air-conditioning units unless the damage was caused by the owner's actions of negligence.

**8-14. Observation:** There is condensation on the outside of air handlers and ducts.

**Performance Guideline:** Air handlers and ducts will collect condensation on their exterior surfaces when extreme temperature differences and high humidity levels occur. Condensation usually results from humid conditions within the home that are created by the owner or during the curing process in a new space.

**Corrective Measure:** Unless the condensation or frost is directly attributed to faulty installation, it usually results from conditions beyond the control of the contractor. No corrective action is required.

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### **9 - Interior**

#### **Interior Doors**

**9-1. Observation:** Interior door is warped.

**Performance Guideline:** Interior doors (full openings) shall not warp in excess of 1/4 inch.

**Corrective Measure:** The contractor will correct or replace and refinish defective doors to match existing doors as nearly as practical during the warranty period. **Discussion:** In bathroom or utility areas, exhaust fans or an open window must be used to remove moisture to prevent warpage of door units

**9-2. Observation:** Bi-fold doors come off tracks during normal operation.

**Performance Guideline:** Bi-fold doors shall slide properly on their tracks at the time the job is accepted. Cleaning and maintenance necessary to preserve proper operation are the owner's responsibility.

**Corrective Measure:** The contractor will repair any bi-fold door that will not stay on its track during normal operation, one time during the warranty period.

**Discussion:** Proper operation should be verified by the owner and the contractor at the time the job is accepted.

**9-3. Observation:** Pocket door rubs in pocket during normal operation.

**Performance Guideline:** Pocket doors shall not rub in their pockets during normal operation.

**Corrective Measure:** The contractor will repair the pocket door to meet the performance guideline, one time during the warranty period.

**9-4. Observation:** Wooden door panel shrinks and splits.

**Performance Guideline:** Wooden door panels shall not split to the point where light is visible through the door.

**Corrective Measure:** The contractor will fill splits in the door panel with wood filler and match paint or stain as closely as practical.

**9-5. Observation:** Door rubs on jambs or contractor-installed floor covering, or latch does not work.

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**Performance Guideline:** Doors shall operate smoothly and door latches shall operate correctly.

**Corrective Measure:** The contractor will repair the door and the door latch as necessary to meet the performance guideline.

**9-6. Observation:** Doors drags on floor finish.

**Performance Guideline:** Doors shall not drag on floor finish.

**Corrective Measure:** The contractor will repair the door to meet the performance guideline if the contractor installed the carpet as part of the contract.

**Discussion:** If the contractor installs the door over pre-existing carpeting, the contractor is responsible for meeting the performance guideline.

**9-7. Observation:** Door edge is not parallel to doorjamb.

**Performance Guideline:** Where the contractor installs the doorframe and door, the door edge shall be within 3/16 inch of parallel to the doorjamb. Where the contractor installs the door in an existing frame that is out of square, the guideline does not apply.

**Corrective Measure:** The contractor will adjust the door as necessary to meet the guideline.

**9-8. Observation:** Door swings open or closed by the force of gravity.

**Performance Guideline:** Doors shall not swing open or closed by the force of gravity alone. For remodeling projects, this guideline does not apply where a door is installed in an existing wall that is out of plumb.

**Corrective Measure:** The contractor will adjust the door as necessary to meet the guideline.

### **Interior Stairs**

**9-9. Observation:** Interior stair tread deflects too much.

**Performance Guideline:** All stair structural members shall be sized, and fasteners spaced according to the national forest products association span tables, or local building codes.

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**Corrective Measure:** The contractor will repair the stair to meet the performance guideline.

- 9-10. Observation:** Gaps exist between interior stair risers, treads, and/or skirts.

**Performance Guideline:** Gaps between adjoining parts that are designed to meet flush shall not exceed 1/8 inch in width.

**Corrective Measure:** The contractor will fix the gap with filler or replace parts as necessary to meet the performance guideline.

- 9-11. Observation:** Squeaking stair riser or tread.

**Performance Guideline:** Loud squeaks caused by a loose stair riser or tread are unacceptable, but totally squeak-proof stair risers or treads cannot be guaranteed.

**Corrective Measure:** The contractor will refasten any loose risers or treads or take other corrective action to eliminate squeaking to the extent possible within reasonable repair capability without removing treads or ceiling finishes.

**Discussion:** Squeaks in risers or treads may occur when a riser has come loose from the tread, and is deflected by the weight of a person and rubs against the nails that hold it in place. Movement may occur between the riser and the tread or other stairway members when one tread is deflected while the other members remain stationary. Using trim screws to fasten the tread to the riser from above will sometimes reduce squeaking. If there is no ceiling below, gluing or re-nailing the riser to the tread or shimming will reduce squeaks but the total elimination of squeaks is practically impossible.

The performance guideline requires the contractor to make a reasonable attempt to eliminate squeaks without requiring removal of treads or ceiling finishes.

- 9-12. Observation:** Gaps exist between interior stair railing parts.

**Performance Guideline:** Gaps between interior stair railing parts shall not exceed 1/8 inch in width.

**Corrective Measure:** The contractor will ensure that individual parts of the railing are securely mounted. Any remaining gaps will be filled or parts replaced to meet the performance guideline.

- 9-13. Observation:** Interior stair railing lacks rigidity.

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**Performance Guideline:** Interior stair railings shall be attached to structural members in accordance with applicable codes.

**Corrective Measure:** The contractor will repair any stair railings as necessary to comply with applicable codes.

### **Trim and Moldings**

**9-14. Observation:** Gaps at non-mitered joints of trim and moldings.

**Performance Guideline:** Openings at joints in trim and moldings, and at joints between moldings and adjacent surfaces, shall not exceed 1/8 inch in width at time of installation.

**Corrective Measure:** The contractor will repair defective joints to meet performance guideline.

**Discussion:** Separation of trim and moldings can be caused by lack of control of indoor relative humidity by the owner and in such cases will therefore be excluded.

**9-15. Observation:** Nails are not properly set or, where puttied, nail holes are not properly filled.

**Performance Guideline:** Setting nails and filling nail holes are considered part of painting and finishing. After painting or finishing, nails and nail holes shall not be readily visible from a distance of 6 feet under normal lighting conditions.

**Corrective Measure:** Where the contractor is responsible for painting, the contractor shall take action necessary to meet the performance guideline.

**Discussion:** Puttying of nail holes in base and trim molding installed in unfinished rooms and areas not exposed to view (such as inside of closets) are not included in this guideline.

**9-16. Observation:** Inside corner is not coped or mitered.

**Performance Guideline:** Trim edges at inside corners shall be coped or mitered. However, square edge trim may be butted.

**Corrective Measure:** The contractor will finish inside corners to meet the performance guideline.

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**9-17. Observation:** Trim or molding miter edges do not meet.

**Performance Guideline:** Gaps between miter edges in trim and molding shall not exceed 1/8 inch at time of installation.

**Corrective Measure:** The contractor will repair gaps that do not meet the performance guideline. Caulking or puttying with materials compatible to the finish is acceptable.

**9-18. Observation:** Interior trim is split.

**Performance Guideline:** Splits, cracks, and checking are inherent characteristics of all wood products, and are not a defect.

**Corrective Measure:** None.

**9-19. Observation:** Hammer marks are visible on interior trim.

**Performance Guideline:** Hammer marks on interior trim shall not be readily visible from a distance of 6 feet under normal lighting conditions.

**Corrective Measure:** The contractor will fill hammer marks and refinish or replace affected trim to meet the performance guideline. Refinished or replaced areas may not match surrounding surfaces exactly.

### **Cabinets and Counter Tops**

**9-20. Observation:** Cabinets do not meet ceiling or walls.

**Performance Guideline:** Gaps in excess of 1/4 inch are unacceptable.

**Corrective Measure:** The contractor will repair the gap with caulk, putty, or scribe molding, or he shall reposition/reinstall cabinets to meet the performance guideline.

**Discussion:** When remodeling in rooms with out of plumb walls or out of level floors and ceilings, "square" cabinets cannot be installed parallel to walls and ceilings and still keep the cabinets on line. For example, if the floor is not level and the installer measures up from it, "snaps" a line on which to place the tops of the wall cabinets, then plumbs the first cabinet, one corner of the cabinet will leave the line, and the bottom corners of successive cabinets will not be in line. Similarly, cabinets will not line up with each other if they are installed on a level line, starting against an out of plumb wall instead of being plumbed. The contractor should explain the aesthetic options and let the owner decide which one is preferred.

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**9-21. Observation:** Cabinets do not line up with each other.

**Performance Guideline:** Cabinet faces more than 1/8 inch out of line, and cabinet corners more than 3/16 inch out of line, are unacceptable, unless the owner and the contractor agree to disregard the guideline in order to match or otherwise compensate for preexisting conditions.

**Corrective Measure:** The contractor will make necessary adjustments to meet the performance guideline.

**Discussion:** In rooms with out of plumb walls or out of level floors and ceilings, “square” cabinets cannot be installed parallel to walls and ceilings and still keep the cabinets on line. For example, if the floor is not level and the installer measures up from it, “snaps” a line on which to place the tops of the wall cabinets, then plumbs the first cabinet, one corner of the cabinet will leave the line, and the bottom corners of successive cabinets will not be in line. Similarly, cabinets will not line up with each other if they are installed on a level line, starting against an out of plumb wall instead of being plumbed. The contractor should explain the aesthetic options and let the owner decide which one is preferred.

**9-22. Observation:** Cabinet is warped.

**Performance Guideline:** Cabinet warpage shall not exceed 1/4 inch as measured from the face frame to the point of furthest warpage, with the door or drawer front in closed position.

**Corrective Measure:** The contractor will correct or replace doors and drawer fronts as necessary to meet the performance guideline.

**9-23. Observation:** Cabinet door or drawer binds.

**Performance Guideline:** Cabinet doors and drawers shall open and close with reasonable ease.

**Corrective Measure:** The contractor will adjust or replace doors and drawers as necessary to meet the performance guideline.

**9-24. Observation:** Cabinet door will not stay closed.

**Performance Guideline:** The catches or closing mechanisms for cabinet doors shall be adequate to hold the doors in a closed position.

**Corrective Measure:** The contractor will adjust or replace the door catches or closing mechanisms as necessary to meet the performance guideline.

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**9-25. Observation:** The joints of high-pressure laminate on countertop are delaminated.

**Performance Guideline:** Countertops fabricated with high-pressure laminate coverings shall not delaminate.

**Corrective Measure:** The contractor will repair or replace delaminated coverings.

**9-26. Observation:** The surface of high-pressure laminate on countertop is cracked or chipped.

**Performance Guideline:** Countertops shall be free of cracks and chips at the time the job is accepted. Cracks or chips occurring after acceptance of the job are the owner's responsibility.

**Corrective Measure:** The contractor will repair or replace cracked or chipped countertops only if they are reported prior to acceptance of the job.

**9-27. Observation:** Scratches on solid surface countertops are visibly scratched.

**Performance Guideline:** At the time of substantial completion of the project, solid surface countertops shall be free of scratches visible from 6 feet under normal lighting conditions.

**Corrective Measure:** The contractor shall repair to meet the performance guideline.

**9-28. Observation:** Countertop is not level.

**Performance Guideline:** Countertops shall be no more than 3/8 inch in 10 feet out of parallel with the floor. For remodeling projects where the floor is out of level, the countertop may be installed proportionately out of level.

**Corrective Measure:** The contractor will make necessary adjustments to meet the performance guideline.

**Discussion:** For remodeling projects, countertops are almost always on a plane parallel to the floor and ceiling because the cabinets supporting the top are exactly the same height. Shimming and leveling the tops when the floor is out of level may be aesthetically unacceptable to the owner. Prior to construction, the contractor should explain the problem and allow the owner to decide between tops that are out of level or not parallel to the floor.

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**9-29. Observation:** A tile countertop has uneven grout lines.

**Performance Guideline:** Grout lines should not vary more than 1/16 inch from the widest to the narrowest.

**Corrective Measure:** The contractor shall make corrections as necessary to make the grout lines into compliance with the performance guidelines.

**9-30. Observation:** A tile countertop has cracked grout lines.

**Performance Guideline:** Tile grout is a cement product that is subject to cracking. Cracks that result in loose tiles or gaps in excess of 1/16 inch shall be repaired.

**Corrective Measure:** The contractor shall make corrections as necessary by adding grout, caulking, or replacing grout one time.

**9-31. Observation:** A granite, stone, marble, or solid surface countertop is cracked at the time of substantial completion of the project.

**Performance Guideline:** Cracks that are greater than 1/32 inch in width are considered excessive.

**Corrective Measure:** If the crack is found to be a result of faulty installation or product, the contractor will repair or replace the countertop. Patching is an acceptable repair.

**9-32. Observation:** A granite, marble, stone or solid surface countertop has texture or color variations.

**Performance Guideline:** Color variations are acceptable. The contractor has no responsibility for countertop texture or color variations when the customer selects material.

**Corrective Measure:** No action is required.

**9-33. Observation:** A granite, marble, stone, or solid surface countertop is chipped at the time of substantial completion of the project.

**Performance Guideline:** Chips greater than 1/32 inch in width are considered excessive.

**Corrective Measure:** The contractor will repair or replace affected areas to meet the performance guidelines.

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**9-34. Observation:** A solid surface or laminate countertop has a bubble, burn, stain, or other damage.

**Performance Guideline:** Solid surface or laminate countertops shall be free of bubbles, burns, or stains at the time of substantial completion of the project.

**Corrective Measure:** The contractor will repair or replace the countertop to meet the performance guideline.

### **Interior Wall Finish**

#### **Lath and Plaster**

**9-35 Observation:** Cracks are visible on finished wall or ceiling.

**Performance Guideline:** Cracks shall not exceed 1/16 inch in width.

**Corrective Measure:** The contractor will repair cracks exceeding 1/16 inch in width only once during the warranty period. The contractor will touch up paint-repaired areas if the contractor was responsible for the original interior painting. A perfect match between original and new paint cannot be expected and the contractor is not required to paint an entire wall or room.

#### **Gypsum Wallboard**

**9-36. Observation:** Nail pop, blister, or blemish is visible on finished wall or ceiling.

**Performance Guideline:** Any nail pops, blister, or blemish that are readily visible from a distance of 6 feet under normal lighting conditions are unacceptable.

**Corrective Measure:** The contractor will repair any such blemishes only once during the warranty period. The contractor will touch up paint-repaired areas if the contractor was responsible for the original interior painting. A perfect match between original and new paint cannot be expected, and the contractor is not required to paint an entire wall or room. The contractor is not required to repair defects that are covered by wallpaper and, therefore, not visible.

**9-37. Observation:** Cracked corner bead or blisters in tape joints on drywall surface.

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**Performance Guideline:** Defects resulting in cracked corner bead or blisters in tape are unacceptable.

**Corrective Measure:** The contractor shall repair to meet the performance guideline one time within warranty period.

**9-38. Observation:** Joints protrude from surface.

**Performance Guideline:** Any joints that are visible from 6 feet under normal lighting and painting conditions are considered excessive.

**Corrective Measure:** One time only the contractor will repair affected areas.

**9-39. Observation:** The texture of gypsum board does not match.

**Performance Guideline:** Any variations that are readily visible from a distance of 6 feet under normal lighting and painting conditions are considered excessive

**Corrective Measure:** The contractor will repair the affected area to meet the guideline.

**9-40. Observation:** Blown or textured surfaces have uneven textures.

**Performance Guideline:** This is a common condition that occurs with randomly applied materials.

**Corrective Measure:** No action is required by the contractor.

## **Paint, Stain and Varnish**

**9-38. Observation:** Mildew or fungus is visible on interior painted surfaces.

**Performance Guideline:** Painted and finished surfaces shall be free of observable mildew and fungus at the time the job is completed. However, mildew or fungus may form on painted surfaces over time because of heat and moisture.

**Corrective Measure:** The contractor will remove mildew and fungus before completion of the job. Subsequent mildew or fungus formation is a condition the contractor cannot control. The owner is responsible for future cleaning of the painted item as necessary to prevent or remove mildew and fungus.

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**9-39. Observation:** Varnish or lacquer finishes have deteriorated.

**Performance Guideline:** Clear finishes on interior woodwork shall not deteriorate during the warranty period.

**Corrective Measure:** The contractor will retouch affected areas of clear finish interior woodwork and match the original finish as closely as practical.

**Discussion:** Finishes on window sills with south facing exposure may deteriorate due to climatic conditions.

**9-40. Observation:** Interior paint does not “cover” the underlying surface.

**Performance Guideline:** The surface being painted shall not show through new paint when viewed from a distance of 6 feet under normal lighting conditions.

**Corrective Measure:** The contractor will recoat as necessary to meet the guideline and match surrounding areas as closely as practical.

**9-41. Observation:** Interior surface is paint spattered.

**Performance Guideline:** Paint spatters shall not be readily visible on walls, woodwork, floors, or other interior surfaces when viewed from a distance of 6 feet under normal lighting conditions.

**Corrective Measure:** The contractor will remove paint spatters to meet the guideline.

**9-42. Observation:** Brush marks show on interior painted surface.

**Performance Guideline:** Brush marks shall not be readily visible on interior painted surfaces when viewed from a distance of 6 feet under normal lighting conditions.

**Corrective Measure:** The contractor will refinish as necessary to meet the guideline and match surrounding areas as closely as practical.

**9-43. Observation:** Lap marks show on interior paint or stain.

**Performance Guideline:** Lap marks shall not be readily visible on interior paint or stain when viewed from a distance of 6 feet under normal lighting conditions.

**Corrective Measure:** The contractor will refinish as necessary to meet the guideline and match surrounding areas as closely as practical.

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**9-44. Observation:** Interior painting, staining, or refinishing is required because of repair work.

**Performance Guideline:** A perfect match between original and new paint cannot be expected. Repairs required under these performance guidelines shall be finished to match the immediate surrounding areas as closely as practical.

**Corrective Measure:** The contractor is only responsible for painting if it was part of the original contract. Where the majority of the wall or ceiling area is affected the area will be painted from break line to break line. The contractor is not required to paint an entire room. The contractor is only responsible if they painted the home in the original contract.

### **Wallpaper and Vinyl Wall Coverings**

**9-45. Observation:** The wall covering is peeling.

**Performance Guideline:** The wall covering shall not peel off the walls.

**Corrective Measure:** The contractor will reattach or replace the loose wall covering if the wallpaper was installed by the contractor.

**9-46. Observation:** Patterns in wall covering are mismatched at the edges.

**Performance Guideline:** Patterns in wall coverings shall match unless installed on existing (remodeling jobs only) out of plumb walls or where trim is not square with corners. Defects in the patterns themselves are the manufacturer's responsibility.

**Corrective Measure:** None.

## **10 - Floor Finishes**

### **Carpeting**

**10-1. Observation:** Carpet does not meet at the seams.

**Performance Guideline:** It is not unusual for carpet seams to show. However, a visible gap at the seams is not acceptable.

**Corrective Measure:** If the carpet was installed by the contractor, the contractor will eliminate visible gaps at carpet seams.

**10-2. Observation:** Carpeting loosens, or the carpet stretches.

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**Performance Guideline:** When stretched and secured properly, wall-to-wall carpeting installed as the primary floor covering shall not come up, loosen, or separate from the points of attachment.

**Corrective Measure:** If the carpeting was installed by the contractor, the contractor will re-stretch or re-secure the carpeting as necessary to meet the guideline.

**10-3. Observation:** Spots or minor fading are visible on the carpet.

**Performance Guideline:** Exposure to natural light may cause spots on and minor fading of the carpet.

**Corrective Measure:** None.

**10-4. Observation:** Dead spots appear in padding areas below carpet surface.

**Performance Guideline:** Carpeted areas shall have full coverage of pad consistent throughout the flooring area.

**Corrective Measure:** The contractor will repair any deficiencies to meet performance guidelines.

### **Roll Vinyl and Resilient Tile Flooring**

**10-5. Observation:** Nail pops appear on the surface of resilient flooring.

**Performance Guideline:** Readily visible nail pops on resilient flooring are not acceptable.

**Corrective Measure:** The contractor will repair the nail pops that are readily visible.

**Discussion:** The contractor will repair or replace, at the contractor's option, the resilient floor covering in the affected areas with similar materials. The contractor is not responsible for discontinued patterns or color variations when replacing the floor covering.

**10-6. Observation:** Depressions or ridges appear in resilient flooring because of sub-floor irregularities.

**Performance Guideline:** Readily apparent depressions or ridges exceeding 1/8 inch shall be repaired. The ridge or depression measurement is taken with the gap at one end of a 6-inch straightedge

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centered over the depression or ridge with 3 inches of the straightedge held tightly to the floor on one side of the defect.

**Corrective Measure:** The contractor will take corrective action as necessary to bring the defect within the acceptable tolerance so that the depression or ridge is not readily visible and is not more than 1/8 inch. The contractor will not be responsible for discontinued patterns or color variations when replacing the floor covering.

**Discussion:** Ridges or depressions may be caused by sub-floor irregularities; use of improper trowel, or the floor was not rolled.

**10-7. Observation:** Resilient flooring loses adhesion.

**Performance Guideline:** Resilient flooring shall not lift, bubble, or detach.

**Corrective Measure:** At the contractor's option, the contractor will repair or replace the affected resilient flooring as necessary. The contractor is not responsible for discontinued patterns or color variations when replacing the floor covering.

**10-8. Observation:** Seams or shrinkage gaps show at resilient sheet flooring joints.

**Performance Guideline:** Gaps at joints in resilient sheet flooring shall not exceed 1/32 inch in width. Where dissimilar materials abut, the gap shall not exceed 1/16 inch.

**Corrective Measure:** At the contractor's option, the contractor will repair or replace the resilient flooring as necessary to meet the performance guideline. The contractor will not be responsible for discontinued patterns or color variations when replacing the floor covering.

**Discussion:** Proper repair can be affected by sealing gap with seam sealer.

**10-9. Observation:** Bubbles appear on vinyl flooring

**Performance Guideline:** Bubbles resulting from trapped air that protrude higher than 1/16 inch from the floor are not acceptable.

**Corrective Measure:** The contractor will repair the floor to meet the guideline.

**Discussion:** The performance guideline does not apply to perimeter attached vinyl floors.

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**10-10. Observation:** Patterns on roll vinyl flooring are misaligned.

**Performance Guideline:** Patterns at seams between adjoining pieces shall be aligned to within 1/8 inch.

**Corrective Measure:** The contractor will correct the flooring to meet the performance guideline.

**10-11. Observation:** Resilient floor tile is loose.

**Performance Guideline:** Resilient floor tiles shall be securely attached to the floor.

**Corrective Measure:** The contractor will attach loose resilient floor tiles securely to the floor. The old adhesive will be removed if necessary to re-secure the tiles.

**10-12. Observation:** Corners or patterns of resilient floor tile are misaligned.

**Performance Guideline:** The corners of adjoining resilient floor tiles shall be aligned to within 1/8 inch. Misaligned patterns are not covered unless they result from improper orientation of the floor tiles.

**Corrective Measure:** The contractor will correct resilient floor tiles with misaligned corners to meet the performance guideline.

**10-13. Observation:** Yellowing appears on surface of vinyl sheet goods.

**Performance Guideline:** The contractor shall install vinyl flooring per manufacturer's specifications.

**Corrective Measure:** Yellowing from a manufacturer's defect is not covered by the contractor.

**Discussion:** Some chemical compounds, such as the tar residue from a recently paved asphalt driveway, may cause a chemical reaction with the flooring material and result in permanent damage to the floor. The homeowner should be familiar with the proper use and care of their floors. Defects traced to owner's inappropriate use or care is not the contractor or manufacturer's responsibility.

### **Wood Flooring**

**10-14. Observation:** Gaps exist between strip hardwood floorboards.

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**Performance Guideline:** Gaps between strip hardwood floorboards shall not exceed 1/8 inch in width at time of installation.

**Corrective Measure:** The contractor will repair gaps that do not meet the performance guideline.

**Discussion:** Proper repair can be affected by filling the gap. Relative humidity of the home can cause noticeable fluctuations in gaps between floorboards. This is a normal phenomenon in spaces that experience significant shifts in humidity. The owner is responsible for maintaining proper humidity levels in the home.

**10-15. Observation:** Strip hardwood floorboard is cupped.

**Performance Guideline:** Cups in strip hardwood floor boards shall not exceed 1/16 inch in height in a 3-inch maximum span measured perpendicular to the long axis of the board. Cupping caused by exposure to moisture beyond the control of the contractor is not covered.

**Corrective Measure:** The contractor will correct or repair to meet the guideline.

**10-16. Observation:** Excessive lippage is located at junction of pre-finished wood flooring products.

**Performance Guideline:** Lippage greater than 1/16 inch is considered excessive.

**Corrective Measure:** The contractor will repair to meet performance guideline.

**Discussion:** Lippage is the vertical distance between two floor types at the point where they meet.

**10-17. Observation:** Voids (“holidays”) in the floor finish.

**Performance Guideline:** Voids or “holidays” that are readily visible from a distance of 6 feet under normal lighting conditions are unacceptable.

**Corrective Measure:** The contractor will repair to meet performance guideline.

**10-18. Observation:** Top coating on hardwood flooring has peeled.

**Performance Guideline:** Field applied coating shall not peel during normal usage. Pre-finished coatings are the manufacturer’s responsibility.

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**Corrective Measure:** The contractor shall refinish any field applied finishes that have peeled.

**10-19. Observation:** Crowning of strip flooring has occurred.

**Performance Guideline:** Crowning in strip flooring shall not exceed 1/16 inch in depth in a 3-inch maximum span when measured perpendicular to the long axis of the board.

**Corrective Measure:** The contractor will repair to meet performance guideline.

**10-20. Observation:** Hardwood flooring buckles from substrate.

**Performance Guideline:** Hardwood floor will not become loose from substrate.

**Corrective Measure:** The contractor will repair to meet guideline.

**10-21. Observation:** Excessive knots and color variation of strip hardwood flooring.

**Performance Guideline:** The contractor will install the grade of hardwood as specified by the project. All wood should be consistent with grading stamp as specified.

**Corrective Measure:** The contractor shall replace any improperly graded wood.

**10-22. Observation:** Slivers or splinters appear in strip flooring.

**Performance Guideline:** Slivers or splinters that occur during the installation of the flooring are unacceptable.

**Corrective Measure:** The contractor will repair to meet guideline.

**Discussion:** The imperfections that occur during installation can be shaved and the area filled prior to sanding and finishing.

**10-23. Observation:** "Sticker burn" appears on surface of strip flooring.

**Performance Guideline:** Discoloration from stacking strips in hardwood flooring is unacceptable in certain grades of flooring.

**Corrective Measure:** The contractor shall repair or replace areas with sticker burn if not permitted in grade of wood specified.

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**Tile, Brick, Marble, and Stone Flooring**

**10-24. Observation:** Tile, brick, marble or stone flooring is broken or loose.

**Performance Guideline:** Tile, brick, marble, and stone flooring shall not crack or loosen.

**Corrective Measure:** The contractor will replace cracked tiles, bricks, marble, and stone flooring, and re-secure loose tiles, bricks, marble, and stone, unless the defects were caused by the owner's actions or negligence. The contractor is not responsible for discontinued patterns or color variations when replacing tile, brick, marble, or stone flooring.

**10-25. Observation:** Cracks appear in grouting of tile joints or at junctures with other material such as a bathtub.

**Performance Guideline:** Cracks in grouting of ceramic tile joints commonly result from normal shrinkage conditions.

**Corrective Measure:** The contractor will repair grouting, if necessary, one time only during the warranty period. The contractor will not be responsible for color variations or discontinued colored grout. The owner is responsible for re-grouting these joints during the life of the home.

**Discussion:** Use of an elastic substance at junctures between tile and other materials is often more effective than grout.

**10-25. Observation:** There is excessive "lippage" of adjoining marble or ceramic tile.

**Performance Guideline:** "Lippage" greater than 1/16 inch is considered excessive, except where the materials are designed with an irregular height (such as handmade tile).

**Corrective Measure:** The contractor will repair to meet performance guideline.

**Discussion:** Lippage is the vertical distance between two floor types at the point where they meet.

**10-26. Observation:** Grout or mortar joint is not a uniform color.

**Performance Guideline:** Any color variation that is readily visible from a distance of 6 feet under normal lighting conditions is unacceptable.

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**Corrective Measure:** The contractor will repair to meet the performance guideline.

### Miscellaneous

#### Fireplace and Wood Stove

**11-1. Observation:** Fireplace or chimney does not consistently draw properly.

**Performance Guideline:** A properly designed and constructed fireplace and chimney shall function correctly. High winds can cause temporary negative or down drafts. Negative drafts can also be caused by obstructions such as tree branches, steep hillsides, adjoining homes, and interior furnaces. Some homes that have been constructed to meet stringent energy criteria may need to have a nearby window opened slightly to create an effective draft.

**Corrective Measure:** The contractor shall correct as necessary if the problem is caused by a design or construction flaw.

**11-2. Observation:** The chimney is separated from the structure.

**Performance Guideline:** Newly built fireplaces will often incur slight amounts of separation. The rate of separation from the main structure shall not exceed 1/2 inch in any 10-foot vertical measurement.

**Corrective Measure:** The contractor will repair gaps that do not meet the performance guideline.

**Discussion:** Proper repair can be affected by caulking unless the cause of the separation is due to a structural failure of the chimney foundation itself. In that case, caulking is unacceptable.

**11-3. Observation:** Firebox paint is damaged by a fire in the fireplace.

**Performance Guideline:** None. Heat and flames may cause discoloration.

**Corrective Measure:** None.

**11-4. Observation:** Firebrick or mortar joint is cracked.

**Performance Guideline:** Heat and flames from normal fires can cause cracking.

**Corrective Measure:** None.

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### Concrete Stoops and Steps

**11-5. Observation:** Stoops or steps have settled, heaved, or separated from the house structure.

**Performance Guideline:** Stoops and steps shall not settle, heave, or separate in excess of 1 inch from the house structure.

**Corrective Measure:** The contractor will take whatever corrective action is required to meet the performance guideline.

**11-6. Observation:** Water remains on stoops or steps after rain has stopped.

**Performance Guideline:** Water shall drain off outdoor stoops and steps. Minor amounts of water can be expected to remain on stoops and steps for up to 24 hours after rain.

**Corrective Measure:** The contractor will take corrective action to assure proper drainage of stoops and steps.

### Garage

**11-7. Observation:** The garage floor slab is cracked.

**Performance Guideline:** Cracks in concrete garage floor greater than 1/4 inch in width are excessive.

**Corrective Measure:** The contractor shall repair to meet the performance guideline.

**Discussion:** Proper repair can be affected by thoroughly cleaning, filling, and troweling the surface using latex-fortified cement mixture or other materials designed to fill cracks and bond concrete.

**11-8. Observation:** Garage concrete floor has settled, heaved, or separated.

**Performance Guideline:** The garage floor shall not settle, heave, or separate in excess of 1 inch from the structure.

**Corrective Measure:** The contractor will take whatever corrective action is required to meet the performance guideline.

**11-9. Observation:** Garage doors fail to operate properly under normal use.

**Performance Guideline:** Garage doors shall operate properly.

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**Corrective Measure:** The contractor will correct or adjust garage doors as required, except where the owner's actions or negligence caused the problem.

**Discussion:** The contractor is not responsible for the door operation if the owner has installed a garage door opener.

**11-10. Observation:** Garage doors allow entry of snow or water.

**Performance Guideline:** Garage doors shall be installed as recommended by the manufacturer. Some snow or water can be expected to enter

**Corrective Measure:** The contractor will adjust or correct garage doors to meet the manufacturer's recommendation.

### **Wood Decks**

**11-11. Observation:** Wood deck is springy or shaky.

**Performance Guideline:** All structural members in a wood deck shall be sized, and fasteners spaced, according to appropriate building codes, National Forest and Paper Association span tables, or a higher guideline agreed upon before construction by the owner and the contractor.

**Corrective Measure:** The contractor will reinforce or modify, as necessary, any wood deck not meeting the guideline.

**Discussion:** Deflection may indicate insufficient stiffness in the lumber, or may reflect an aesthetic consideration independent of the strength and safety requirements of the lumber. Joists and rafters are required to meet standards for both stiffness and strength. The span tables allow, under full design loadings, a maximum deflection equal to 1/360 of the span for floor and ceiling joists (3/8 inch in 12 feet), 1/240 for rafters up to 3/12 in pitch (1/2 inch in 12 feet), and 1/180 for rafters over 3/12 in pitch (3/4 inch in 12 feet). Individual clients may not be satisfied with the deflection limits built into the tables. When a customer's preference is made known before construction, the contractor and the owner may agree upon a higher standard.

**11-12. Observation:** Spaces between decking are not uniform.

**Performance Guideline:** The spaces on opposite sides of individual deck boards shall not differ in average width by more than 3/16 inch at the time the project is accepted unless otherwise specified by owner.

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**Corrective Measure:** The contractor will realign or replace decking boards to meet the guideline.

**Discussion:** The spaces will naturally tend to change over time because of shrinkage and expansion of individual boards. The contractor is only responsible for correct spacing at the time of installation.

**11-13. Observation:** Railings on wood decking contain slivers in exposed areas.

**Performance Guideline:** Railings on wood decks shall not contain slivers longer than 1/8 inch in exposed areas at the time the job is accepted.

**Corrective Measure:** The contractor will repair railings as necessary to remove slivers prior to acceptance of the job. Repair of slivers after acceptance of the job is an owner maintenance responsibility.

**Discussion:** Slivers can develop from weathering of unprotected wood. Proper finishing of wood surfaces helps prevent slivers from forming.

**11-14. Observation:** Wood deck is out of level.

**Performance Guideline:** No point on the deck surface shall be more than 1/2 inch higher or lower than any other deck surface point within 10 feet on a line parallel to the house, or proportional multiples of the preceding dimensions, unless the owner and contractor agree to intentionally build a wood deck out of level in order to match or compensate for inaccuracies in the existing structure.

**Corrective Measure:** The contractor will repair the deck as necessary to meet the performance guideline

**Discussion:** A slope of approximately 1/8 inch per foot is desirable in the perpendicular direction to shed water and prevent ice build-up.

**11-15. Observation:** Wood decking boards are split, warped, or cupped.

**Performance Guideline:** At the time the job is accepted, splits, warps, and cups in wood decking boards shall not exceed the allowances established by the official grading rules issued by the agency responsible for the lumber species used for the deck boards, including but not limited to Southern Pine Inspection Bureau, Western Wood Products Association, West Coast Lumber Inspection Bureau, Redwood Inspection Service, and Northeastern Lumber Manufacturers Association.

**Corrective Measure:** The contractor will replace decking boards as necessary to meet the performance guideline.

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**11-16. Observation:** Stain color variations are on wood deck.

**Performance Guideline:** Stain color variations are not acceptable if they result from improper stain application or failure to mix the stain properly. Stain color variations resulting from other causes--such as weathering or varying porosity of the wood used to build the deck--are normal and are not covered by this guideline.

**Corrective Measure:** The contractor will re-stain to meet the performance guideline.

**11-17. Observation:** Wood-decking board has nail head protruding.

**Performance Guideline:** Nail heads shall not protrude from the floor of the wood deck during the warranty period.

**Corrective Measure:** The contractor will refasten nails with heads protruding from the floor of the deck so that the heads are flush with the surface. **Discussion:** Nails should be driven flush when the deck is installed, but they may pop from the deck over time as the wood shrinks and expands.

**11-18. Observation:** Nails on wood deck are “bleeding.”

**Performance Guideline:** Nail stains extending more than 1/2 inch from the nail and readily visible from a distance of more than 3 feet are not acceptable.

**Corrective Measure:** The contractor will eliminate nail stains to meet the performance guideline.

**Discussion:** This guideline does not apply if “natural weathering” or semi-transparent stains are specified.

**11-19. Observation:** Wood deck railing lacks rigidity.

**Performance Guideline:** Wood deck railings shall be attached to structural members in accordance with applicable codes.

**Corrective Measure:** The contractor will repair wood deck railings as necessary to comply with applicable codes.

## **12 - Landscaping**

**12-1. Observation:** Tree stumps have been left in disturbed area of property.

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**Performance Guideline:** If tree stumps were on the property in the disturbed area prior to the acceptance of the project, the contractor is responsible.

**Corrective Measure:** The contractor will remove the stump from the area.

**12-2. Observation:** Dead shrubs, plants, trees, or sod planted in disturbed area of property, unless noted in the contract.

**Performance Guideline:** Any shrub, plant, tree, or sod planted by the contractor as part of the landscape package that are alive as of the acceptance of the project and die after the acceptance are not the responsibility of the contractor.

**Corrective Measure:** None.

**12-3. Observation:** Grass seed does not germinate within 30 days of the acceptance of the project.

**Performance Guideline:** Grass seed not germinating within 30 days is unacceptable.

**Corrective Measure:** The contractor will reseed affected areas unless specifically excluded in contract.

**12-4. Observation:** Outdoor plants moved during work die after project is completed.

**Performance Guideline:** Plants that must be physically transported during the work shall be moved, maintained, and replanted by owner.

**Corrective Measure:** None.

**Discussion:** The contractor shall not be responsible for delays in the schedule when plants are moved by the owner.