



**WISCONSIN  
BUILDERS**  
ASSOCIATION

**CONSTRUCTION  
INDUSTRY QUALITY  
STANDARDS**

## **Wisconsin Builders Association<sup>®</sup>**

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### **Special Thanks**

to

The WBA Local Officers Council

and

Metropolitan Builders Association of Greater Milwaukee

And

Madison Area Builders Association

for sharing their standards as a guideline in the compilation of this manual.

# INTRODUCTION TO CONSTRUCTION INDUSTRY QUALITY STANDARDS

The purpose of this manual is to provide a standard level of building in Wisconsin. The guidelines are intended for use as a reference and should be interpreted with common sense. They should be applied only within the scope of the particular project being performed, and are not intended to answer all questions pertaining to quality of construction that might arise in the course of a typical residential construction project. The guidelines selected for this manual deal with those issues that most frequently give rise to questions for the builder and homeowner. Although many contractors routinely build to higher standards, this is a collection of minimum performance criteria and should be interpreted as such.

The totally perfect home cannot be built by any builder. The wide range of materials used in a new home is subject to some degree of imperfection through handling and installation. Minor scratches, dents or other imperfections in construction materials will occur and are unavoidable. Variations in wood finishes caused by natural variations in wood surfaces will occur. Natural variations in wood are not controllable. Minor and hard to see nicks, scratches, cuts, blemishes, color and finishing variations are normal.

There are many items that are homeowner maintenance responsibilities. A homeowner should become educated on these responsibilities.

Items such as scratches, nicks, chips, gouges, etc. must be reported to the builder in writing prior to occupancy, or will become homeowner's responsibility.

These quality standards are applicable based on the terms specified in the contract. Consequential damages are not the responsibility of the builder.

THIS BOOK IS A TECHNICAL MANUAL  
FOR USE BY THE  
RESIDENTIAL CONSTRUCTION INDUSTRY

# SCOPE OF RESPONSIBILITIES

Typically, numerous parties are involved in a residential construction project, whether it is building a new home or remodeling an existing one. Each of these parties has specific responsibilities to fulfill. The contract documents should provide a clear statement of the agreement between the builder and the homeowner. In addition to the specific provisions of any contract, the following general responsibilities should be noted:

**The Builder:** For the purposes of this manual, the builder is the company named in the contract that has primary responsibility for completing the project. The builder often employs others to assist him/her. In most cases, the builder is responsible for all work assigned in the contract regardless of who actually performs the work. If the homeowner selects others to work on the project that are outside the builder's control, the responsibility for evaluation and remedy of proposed problems will be the homeowner's responsibility.

**The Homeowner:** The homeowner is the purchaser of the project or service named in the contract. The homeowner is responsible for carefully reviewing the contract and specifications to ensure it accurately represents his or her expectations for the final project. Once the homeowner has accepted the project and moves into the home or occupies the newly renovated space, then he or she is responsible for routine maintenance and upkeep. Homeowners should note that in some of the standards contained in this Manual, the builder is not obligated to make repairs to items that fall within the homeowner's maintenance responsibility. If the homeowner selects others to work on the project that are outside the builder's control, the responsibility for evaluation and remedy of proposed problems will be the homeowner's responsibility.

**The Manufacturer:** Manufacturers warrant many residential construction components that may fall outside the scope of the builder's responsibilities, such as kitchen appliances, furnaces, air conditioners, and the like. Other less obvious items may include certain types of siding, roofing or flooring. If there is a warranty problem with one of these components, the homeowner should be aware that the builder might not be responsible for the performance of the product once it is installed. If a problem occurs, the homeowner will often deal directly with the manufacturer to have the problem evaluated, and if necessary, rectified. The builder's responsibilities may end once he or she provides the appropriate information on how to contact the manufacturer, unless otherwise specified in the contract.

## Remodeling Projects

Remodeling is the process of expanding or enhancing an existing structure. There are inherent difficulties in melding the new and old in a way that meets the needs of the homeowner and is also aesthetically pleasing. Therefore, there are circumstances that call for the suspension of the application of these guidelines in order for the remodeling project to be successfully completed. These include, but are not limited to: the meeting of old out-of-plumb structures with new structures, the appearance of new materials near weathered existing materials, and the practical considerations for new projects to work within the limitations of an existing building.

Because of the unique challenges of joining new with old, a remodeling contractor may build part of or the entire project outside the scope of these guidelines in order to achieve the contract objectives. When it is reasonable the builder may note and discuss a problem with the customer before construction. It is also normal for a builder (in the course of construction) to discover and accommodate conditions in the old structure that require solutions different from those the standards suggest. In these circumstances, the governing factor is meeting the needs of the consumer as outlined in the contract within the standards of the Wisconsin Uniform Dwelling Code and/or local building codes.

It is important to note that whenever this manual includes reference to corrective action by the builder, it is the manual's intention that such action will be the responsibility of the builder only within the warranty period or as defined in the contract. For this reason, it is critical that the parties to the contract clearly understand the scope and duration of the builder's warranty as well as any product warranties from manufacturers. Warranties on new home construction vary according to contract and products. Builders provide a warranty for materials and workmanship while product warranties vary widely according to the

manufacturer. Any manufacturer's warranty after the specified period shall be dealt with directly by the homeowner with the manufacturer.

The Wisconsin Builders Association® recommends that all builders conduct a walk-through inspection with the homeowner prior to transfer of occupancy. At that time, the builder and the homeowner can determine areas where additional performance may be required of the builder as well as to identify areas that will be the homeowner's responsibility to maintain. Any outstanding builder items are listed for the builder to complete along with a timeline for completion of said items.

Upon occupancy, when a homeowner observes a potential area of concern during the warranty period, the homeowner should notify the builder according to the terms of your warranty. Upon **written receipt** builder will complete the items in a timely fashion.

Constructing a new home is an exciting process whose progress can be assisted by clear, precise contract terms and a complete understanding of performance standards. It is the hope of the Wisconsin Builders Association® that this manual provides such assistance.

# TABLE OF CONTENTS

Format.....	7
Carpentry (Finish).....	7
Carpentry (Rough).....	12
Caulking .....	14
Concrete.....	16
Countertops.....	20
Drywall & Plaster .....	21
E.I.F.S. (Exterior Insulation & Finish System) .....	23
Electrical.....	25
Fireplaces.....	27
Flooring	
Carpeting.....	29
Ceramic or Quarry.....	31
Resilient.....	32
Wood.....	34
Grading, Ground Removal, Gravel & Fill.....	38
Gutters.....	40
HVAC .....	42
Indoor Air Quality.....	45
Insulation & Weatherization.....	46
Landscaping .....	48
Lighting Fixtures .....	50
Masonry.....	52
Moisture.....	53
Overhead Garage Doors .....	54
Painting, Staining & Wallpapering .....	57
Plumbing .....	62
Roofing.....	65
Siding	
Aluminum or Steel.....	69
Vinyl.....	70
Wood.....	71
Glossary of Terms.....	74

# MANUAL FORMAT

Residential construction must comply with all Federal, State, and Local Building Codes.

This manual contains the suggested standards of the Wisconsin Home Builders Association® for residential construction, which may be adopted by parties to a building contract by their mutual agreement.

Only the most frequent observations of concern to the industry have been set forth in the following pages. It is not possible to discuss every conceivable situation that can occur in residential construction since, because of the limitless combinations that can be incorporated into a home, infinite conditions can occur. This manual describes the most common situations. Any circumstances for which a suggested standard has not yet been addressed in this manual should be determined on the basis of good industry practice which assures quality of materials and workmanship, and any conciliation or arbitration of such complaints shall be conducted accordingly.

The following *Suggested Standards for Residential Construction* are expressed in a format designed for easy comprehension by both laymen and builder as follows:

Each item contains three sections.

1. **OBSERVATION:** A brief statement in simple terms of the situation or condition to be considered.
2. **QUALITY STANDARD:** A suggested performance standard relating to the situation or condition observed.
3. **REPAIR RESPONSIBILITY:** A statement of the corrective action required by the party who contracted for the work under question. If that party is the builder, such corrective action would be applicable during the warranty period.

## CARPENTRY (FINISH) STANDARD (Finished Carpentry, Paneling, Cabinetry, Millwork and Countertops)

### Background

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

The owners should note scratches, chips, gouges, or nicks at the time of the pre-occupancy inspection, more commonly known as a "walk-through." To maintain the beauty of the wood and wood products, wood should be cared for by the owner much like furniture. The homeowner should only use products recommended by the manufacturers when cleaning and maintaining wood products and when caring for countertops.

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

If painting, varnishing and/or staining are to be done by the owner, these processes should be completed at the earliest possible opportunity. The primary purpose of finishing is preservation, i.e., protecting the surfaces and edges from weather and moisture penetration. Owner should be aware that all surfaces

must be sealed on all six sides. If a door or drawer fails, and the owner did the finishing himself, work was done on an allowance basis or had contracted for the finishing outside of the building contract, then the builder is not responsible to make the repair. Filling and sanding of minor imperfections, nail holes and splits are the responsibility of the painter. If the builder is responsible for the painting and/or staining, samples or names of the paint products should be left with the owner for minor touch-ups.

For additional information regarding the responsibility of persons undertaking painting and staining, see the *Background* section of the Painting, Staining and Wallpapering chapter.

1. **OBSERVATION**

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

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

Builder should, upon request of the owner, one time only, preferably at the end of the warranty period: 1) adjust any doors and drawers that fail to operate properly; 2) replace any doors or drawers which cannot be corrected to be within acceptable tolerance after stabilization; 3) refinish as necessary if staining was part of the builder's contract as a bid item.

2. **OBSERVATION**

*Exterior doors (except storm doors) warp or won't close.*

**QUALITY STANDARD**

Because of the security provided by these doors, the doors must be adjusted or corrected as required throughout the warranty period only if the security of the building is jeopardized.

**REPAIR RESPONSIBILITY**

Builder should: 1) correct as requested by the owner to maintain the security of the building; 2) replace any exterior doors whose permanent warpage exceeds the standards referred to in item #1 after the stabilization period; 3) refinish as necessary if painting and staining was part of the builder's contract as a bid item. If painting is part of owner's contract, the owner is responsible for finishing doors on all six surfaces at the earliest possible opportunity to prevent weather deterioration and warpage of the doors and to maintain a warranty on the door.

3. **OBSERVATION**

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

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

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



4. **OBSERVATION**

*Interior door margin is not parallel to doorjamb.*

**QUALITY STANDARD**

Door margin shall be within 3/16" of parallel to the doorjamb. Where builder installs the door in an existing jamb that is out of square, the guideline does not apply.

**REPAIR RESPONSIBILITY**

Builder to adjust the door as necessary to meet standard.

5. **OBSERVATION**

*Loosening or separation of veneer on doors and cabinet doors.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

Builder should repair or replace any doors where the veneer has separated or delaminated during the first year of occupancy. Door replacement due to delamination is the homeowner's responsibility if the homeowner has not promptly followed through on his responsibility to finish the doors or has not finished all six sides of the doors. Builder to refinish only if painting or staining was part of the builder's contract as a bid item.

6. **OBSERVATION**

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

**QUALITY STANDARD**

Panels will shrink and swell due to the nature of wood products. Shrinking and expanding may expose unpainted or unstained surfaces. Wooden door panels shall not split to the point where light is visible through the door.

**REPAIR RESPONSIBILITY**

None, unless light is visible, then builder to repair. The builder will refinish repaired areas if the Builder was responsible for the original interior painting/staining. A perfect match between original and new paint/stain cannot be expected.

7. **OBSERVATION**

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

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

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

8. **OBSERVATION**

*Scratches on glass in doors.*

**QUALITY STANDARD**

Scratching is inherent in the added safety features that are mandated in glass doors. Glass shall not have scratches visible from 10 feet under normal lighting conditions and must be reported to builder prior to occupancy.

**REPAIR RESPONSIBILITY**

The builder shall replace any scratched glass exceeding the Quality Standard if noted prior to occupancy.

9. **OBSERVATION**

*Millwork trim graining or color does not match.*

**QUALITY STANDARD**

See #7

**REPAIR RESPONSIBILITY**

See #7

10. **OBSERVATION**

*Gaps in mitered and coped joints prior to finishing.*

**QUALITY STANDARD**

Gaps in mitered or coped joints in stained areas shall not exceed 1/16". Gaps in mitered or coped joints in painted areas shall not exceed 3/16".

**REPAIR RESPONSIBILITY**

Builder to repair any gaps exceeding 1/16" in stained areas and 3/16" in painted areas.

11. **OBSERVATION**

*Cracks in painted woodwork.*

**QUALITY STANDARD**

Hairline cracks at flat joints are acceptable.

**REPAIR RESPONSIBILITY**

None

12. **OBSERVATION**

*Machine marks on millwork.*

**QUALITY STANDARDS**

Machine marks are inherent in the process of production. However, machine marks on millwork shall not be readily visible from a distance of six feet under normal lighting conditions.

**REPAIR RESPONSIBILITY**

Builder to repair any machine marks visible from a distance of six feet under normal lighting conditions.

13. **OBSERVATION**

*Gaps in mitered or coped joints after wood is finished.*

**QUALITY STANDARD**

Gaps in mitered or coped joints should not exceed 1/16".

**REPAIR RESPONSIBILITY**

Builder should repair any gaps exceeding 1/16". The builder will refinish repaired areas if the builder was responsible for the original interior painting/staining. A perfect match between original and new paint/stain cannot be expected.

**14. OBSERVATION**

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

**QUALITY STANDARD**

Any imperfections that are readily visible from a distance of six feet under normal lighting conditions are unacceptable, but must be noted in writing by the homeowner to the builder at the time the homeowner closes or takes occupancy of the home.

**REPAIR RESPONSIBILITY**

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

**15. OBSERVATION**

*Splices of millwork material within the length of a wall.*

**QUALITY STANDARD**

Splicing is permissible.

**REPAIR RESPONSIBILITY**

None

**16. OBSERVATION**

*Cabinets separate from wall or loosen.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

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

**17. OBSERVATION**

*Gaps exist between stair risers and tread.*

**QUALITY STANDARD**

Gaps between interior stair risers and tread that are designed to meet shall not exceed 1/8" in width.

**REPAIR RESPONSIBILITY**

Builder to fill gap and/or replace parts.

# **CARPENTRY (ROUGH) STANDARD**

## **(Rough Carpentry, Lumber & Trusses)**

### **Background**

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

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

Wood framing can be fabricated on or off a job site, or a combination of both. Even when most of the framing is done on site, pre-manufactured components, such as roof or floor trusses, are often used in lieu of the more conventional joist and rafter construction.

As a natural product, wood will respond to humidity and temperature conditions which can cause shrinking, twisting or warping of the framing material. Some of these conditions can be controlled or minimized; others are due to the nature of wood itself.

In single family construction, lumber type, grade, span, spacing and load bearing capacities are tightly controlled by Code, while the builder uses his/her own judgement in determining the layout. Hence, the accumulation of tolerances of several inches in overall dimension is not unusual. For example, framing can overhang concrete foundation walls in attempts to square the building.

#### **1. OBSERVATION**

*Chronic or intermittent floor and stair squeaks are noticed. (Also see laminate flooring, ceramic tile, wood flooring, and resilient flooring.)*

#### **QUALITY STANDARD**

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

#### **REPAIR RESPONSIBILITY**

Builder will identify the source of the floor squeak and will make reasonable attempts to minimize and/or eliminate such squeaks. It should be noted that floor/stair repairs above a finished ceiling may include surface nailing in carpeted areas and may be impossible in vinyl or ceramic areas. Builder is not responsible to remove the floor covering.

#### **2. OBSERVATION**

*Floors are uneven or not level.*

#### **QUALITY STANDARD**

Floors shall not be more than 3/8" out of plane or level within any 36" measurement. When measured parallel to the joists, engineered flooring systems are not covered under these standards, but are covered by manufacturer's engineering standards.

#### **REPAIR RESPONSIBILITY**

Builder will correct or repair to meet Quality Standard.

#### **3. OBSERVATION**

*Crowned floor joists or uneven subfloor.*

**QUALITY STANDARD**

Floors shall not be more than ¼" out of plane or level in wood, vinyl and ceramic areas or ½" out of plane in carpeted areas within any 36" measurement.

**REPAIR RESPONSIBILITY**

Builder will correct or repair to meet Quality Standard.

**4. OBSERVATION**

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

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

If ridge exceeds standard, builder to remove the sheet goods in the minimum area where the joint will not be readily visible when repaired, re-nail the subflooring, sand smooth and/or fill gap and replace the sheet goods. Homeowner should note that there might be a mismatch in materials due to time or dye lot variations. If the material is unavailable due to discontinuation, unless the homeowner will accept a repair with as closely matching materials as are currently available or correction by some other means, Builder should credit the homeowner 1½ times the builder's cost to repair if the materials were available. That would be 1½ times the minimum service charge, plus the additional hourly labor charge and material cost needed to make the repair.

**5. OBSERVATION**

*Walls are bowed.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

The builder should repair to meet the Quality Standard.

**6. OBSERVATION**

*Walls are out of plumb.*

**QUALITY STANDARD**

Walls should not be more than 1/4" out of plumb for any 32" vertical measurement.

**REPAIR RESPONSIBILITY**

The builder should repair to meet the Quality Standard.

**7. OBSERVATION**

*Windows do not operate.*

**QUALITY STANDARD**

Windows must operate with reasonable ease as designed.

### **REPAIR RESPONSIBILITY**

The builder should repair windows to be operable.

8. **OBSERVATION**

*Trusses appear to lift above wall framing.*

### **QUALITY STANDARD**

Truss lift is a term used to define the situation in which the bottom chord of a truss (to which the drywall is attached) separates the drywall of the ceiling from the drywall of the wall causing a visible gap at the ceiling/wall juncture. Natural truss lift occasionally occurs. Truss lift occurs during the heating season; trusses normally return back down in the summer months.

### **REPAIR RESPONSIBILITY**

None.

9. **OBSERVATION**

*Roof buckles or dips.*

### **QUALITY STANDARD**

Rafters that bow greater than 1" in 8' are considered excessive when measured parallel to the rafters.

Slight bowing of sheathing is acceptable as long as installation was done according to manufacturer's specifications.

### **REPAIR RESPONSIBILITY**

The builder should repair to meet Quality Standard.

10. **OBSERVATION**

*Roof ridge deflects.*

### **QUALITY STANDARD**

Roof ridge deflection greater than 1" in 8' is considered excessive.

### **REPAIR RESPONSIBILITY**

The builder shall repair any deficiencies that do not meet the Quality Standards.

## **CAULKING STANDARD**

### **Background**

Many construction materials used in residential construction change condition in time due to normal shrinkage, thermal expansion and contraction, weather conditions and movement within the structure. Caulk is manufactured for specific material-to-material applications. Manufacturer's application instructions specify requirements and conditions under which caulking must be applied such as surface preparation, temperature limitations and gap ratios. The builder is not responsible for the performance of caulking when physical changes affect the original condition of the structure to which the caulk was applied. Due to normal changes in physical condition of residential structures, owners are advised to inspect caulking at least annually to repair or replace caulk where sealant failures have occurred based on these physical changes.

1. **OBSERVATION**

*Caulk cracks.*

**QUALITY STANDARD**

Surface cracks may be evident while the caulking may still be performing as specified. This is acceptable. Cracks that run the depth of the caulking indicate a failed sealant, which is not an acceptable seal. See Background section for changes in physical conditions which may have occurred and caused the caulk to fail.

**REPAIR RESPONSIBILITY**

The builder should conduct an onsite inspection to determine whether repair is necessary. If the caulking has failed, the party who was originally responsible for the caulking should do removal of the failed section of caulking and a new application of caulk.

2. **OBSERVATION**

*Caulk separates from adjacent materials.*

**QUALITY STANDARD**

Appropriate caulk shall be applied according to manufacturer's specifications and recommendations and should adhere properly and not separate from adjacent materials. See Background for changes in physical conditions which may have occurred and caused the caulk to fail.

**REPAIR RESPONSIBILITY**

If separation has occurred, the builder shall repair or replace the section of caulking that has failed.

3. **OBSERVATION**

*Caulk is missing.*

**QUALITY STANDARD**

Caulk is primarily used as an aid to weatherize a residence, to enhance the appearance of similar and dissimilar materials and to assist in controlling air movement. Its absence may indicate either a non-essential use of caulk or that the seal has failed and the caulk has disappeared from view.

**REPAIR RESPONSIBILITY**

Builder shall provide all necessary caulk as described in the Quality Standard, or replace that which has disappeared. See Background for changes in physical conditions which may have occurred and caused the caulk to fail.

4. **OBSERVATION**

*Caulk has discolored.*

**QUALITY STANDARD**

Caulking color is affected by weather and atmospheric conditions, sun, and airborne dirt and pollution.

**REPAIR RESPONSIBILITY**

No remedy shall be taken by builder unless the physical performance of the caulk is impaired within a one-year period of original application.

# CONCRETE STANDARD

## Background

Concrete work in residential construction provides the base structure upon which the house is built and a permanent fireproof construction. The work is performed with quarried natural materials or with manufactured products that have been selected for their wearing qualities. As such, they are subject to the same weathering phenomena as in their natural state, such as erosion, freezing, thawing, chipping, natural color variations and non-uniformity of size. Concrete work can be performed with a variety of materials, methods of application and techniques of installation. The concrete finish is affected by both the characteristics of the product as well as the techniques of the individual worker.

Concrete work primarily consists of poured walls and flatwork.

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

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

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

It should be pointed out that masonry walls are not waterproof and under certain conditions can leak. Please refer to Grading, Ground Removal, Gravel & Fill Standards for proper maintenance.

Exterior slabs or slabs in an unheated area may heave in the winter due to frost.

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

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

There may be some maintenance required by the homeowner on brick or stone. Some brick walls may need to be sealed due to their permeability to water.

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

### 1. OBSERVATION

*Leaks in basement or wet basement.*



### **QUALITY STANDARD**

The basement should not leak. Leaks may be caused by a number of factors, including but not limited to: improper ground pitch away from the foundation, improper landscaping, improper diversion of water from roof, high water table, unprotected window wells.

### **REPAIR RESPONSIBILITY**

There are a number of options available to prevent water from penetrating. The builder's contract may have included one or more of these options. If the builder's contract *did* include such options, the builder should correct to meet contract specifications. If the builder's contract did *not* include such systems, repair and correction is the homeowner's responsibility.

The builder will determine the cause of the problem. Should the problem be improper drainage, the party who contracted for the elements of construction that affect proper drainage is responsible for correcting and maintaining proper drainage. Ground settling around the foundation and other excavated areas is normal. Owners have the responsibility of maintaining proper pitch away from the foundation.

Additional protection measures are the homeowner's responsibility, including proper diversion of water from the roof and protection of window wells.

*Neither the builder nor the homeowner can control the effects of a high water table or extreme weather conditions, flooding, underground springs, etc.*

## 2. **OBSERVATION**

*Basement walls are cracked.*

### **QUALITY STANDARD**

Hairline cracks in poured concrete not exceeding 1/8" average width are acceptable, provided that these cracks do not cause a leaking problem.

### **REPAIR RESPONSIBILITY**

During the warranty period, the builder should repair any cracks in poured walls exceeding 1/8" average width. Unless structural damage exists, repairs should be made approximately one year after occupancy to permit normal settling through the stabilization period. The owner should expect color variations on repairs. Exterior repairs will not be made except in the case of major structural damage. If the cracks are caused by an improper pitch away from the foundation and owner did their own final grade; it is the responsibility of the owner.

## 3. **OBSERVATION**

*Basement floor is cracked.*

### **QUALITY STANDARD**

Shrinkage cracking is to be expected and requires no repair unless the two surfaces of the crack are mismatched in height by more than 3/16" or the average width of the crack exceeds 3/16".

### **REPAIR RESPONSIBILITY**

The builder should repair to meet the Quality Standard during the warranty period. Homeowner is cautioned repair will not match in color and a hairline crack may reappear. The builder is not responsible for floor cracks caused by hydrostatic pressure.

## 4. **OBSERVATION**

*Garage slab is cracked.*

### **QUALITY STANDARD**

Shrinkage cracking is to be expected and requires no repair unless the two surfaces of the crack are mismatched in height by more than 1/4" or the average width of the crack exceeds 1/4".

### **REPAIR RESPONSIBILITY**

Builder should repair to meet the Quality Standard during the warranty period. Homeowner is cautioned repair will not match in color and that a hairline crack may reappear. The builder is not responsible for floor cracks caused by hydrostatic pressure.

#### 5. **OBSERVATION**

*Cracks show in patios, walks or drives.*

### **QUALITY STANDARD**

Cracks or movement of concrete in a floating slab can be expected. Movement can be minimized if soil is compacted, but may still occur. It should be noted that floating slab type concrete should not be installed until at least the end of the first year, if possible.

### **REPAIR RESPONSIBILITY**

None.

#### 6. **OBSERVATION**

*Pitting and chert pops appear in concrete.*

### **QUALITY STANDARD**

Because a certain percent of chert is a normal, accepted part of the aggregate from which concrete is produced, a certain amount of chert pops & pitting should be expected. Since chert is a lightweight aggregate, the finishing process will cause the chert to rise to the surface, causing an increase in chert pops. Use of salt, or other de-icing agents accelerates all surface blemishes.

### **REPAIR RESPONSIBILITY**

If the builder uses a Wisconsin Department of Transportation approved source, the builder has no repair responsibility.

To minimize chert pops & pitting, homeowner should apply a sealer according to sealer manufacturer's recommendations.

The homeowner should be aware that the condition may be corrected using a latex filler or similar product to remove defect to meet acceptable tolerance. The owner should be aware that latex repair **will not** match in color.

The builder is not responsible for deterioration caused by salt chemicals, mechanical implements, or other factors beyond the builder's control.

#### 7. **OBSERVATION**

*Scaling appears in concrete flatwork such as a driveway, garage floor, sidewalk or patio.*

### **QUALITY STANDARD**

Scaling is a delamination of the finished concrete surface caused by a concentration of water, freezing and thawing, use of de-icing chemicals or mechanical implements, and other factors that may be beyond the builder's control. To minimize scaling, the concrete should be mixed, placed, cured, sealed and maintained in accordance with industry norms that are appropriate for the season the concrete is placed. Current industry standards are available from professional sources such as the Wisconsin Ready Mixed Concrete Association @ [www.wrmca.com](http://www.wrmca.com)

Light scaling of the concrete surface is considered acceptable. Moderate and severe scaling is not acceptable. The area of concrete that has moderate or severe scaling should be repaired or replaced.

A minimal area of moderate scaling may be repaired by cleaning and sealing. Larger areas may be repaired using a latex filler or other patching material. It is normal for the patching material not to match the color of the surrounding concrete. Areas of severe scaling should be removed and

replaced. It is normal for the area of concrete that is replaced not to match the color of the adjacent concrete.

**REPAIR RESPONSIBILITY**

Responsibility for the repair rests upon the party responsible for the scaling. This may be the homeowner, if the owner used de-icing chemicals or other caustic chemicals on the concrete, especially within the first two years following construction. The contractor or subcontractor who placed the concrete may be responsible if the concrete was not properly finished, cured, and sealed. The concrete supplier may be responsible if the mix did not have the appropriate amount of air entrainment.

8. **OBSERVATION**

*Concrete has dusty or chalky appearance.*

**QUALITY STANDARD**

Dusting is a common occurrence, especially on smoothly trowelled surfaces.

**REPAIR RESPONSIBILITY**

None. To minimize dusting or chalking, homeowners should apply a sealer according to sealer manufacturer's recommendations.

9. **OBSERVATION**

*Concrete slab has low spots.*

**QUALITY STANDARD**

No water pockets exceeding 5/16" depth shall exist in any slab that is pitched. No measurable water depth exceeding 1/16" is permissible on stoops with foundations. Where a level slab has been requested by homeowner or in basements, water pockets may appear.

**REPAIR RESPONSIBILITY**

The builder will correct to meet Quality Standards by filling with a latex or equivalent fill, or will grind as necessary. Finished repair should be feathered and smoothed. Color variations are to be expected.

10. **OBSERVATION**

*Stoops, steps or garage floors settle or separate.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

The builder will take whatever corrective action is required to meet the Quality Standard during the warranty period.

11. **OBSERVATION**

*Basement floor does not pitch to floor drain.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

The builder has no repair responsibility if the floor meets the Quality Standard.

12. **OBSERVATION**

*Water stands on stoops with foundations.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

Correct to meet quality standards by filling with latex filler or grinding. If the defect becomes qualified under Item #10 on stoops, it shall be replaced as stated in that item.

# COUNTERTOP STANDARD

## Background

The homeowner should note scratches, chips, gouges or nicks at the time of the pre-occupancy inspection. Builder should caution homeowner to only use products recommended by the manufacturers when cleaning and maintaining countertops.

Inherent in granite countertop material are extreme natural color variations.

Granite countertops should be sealed.

These Quality Standards are applicable for the first year of warranty only.

1. **OBSERVATION**

*Countertops separate from wall.*

**QUALITY STANDARD**

Acceptable tolerance is 1/8" in width.

**REPAIR RESPONSIBILITY**

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

2. **OBSERVATION**

*Seams in laminate countertops rise.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

None

3. **OBSERVATION**

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

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

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

4. **OBSERVATION**

*Seams in countertops are uneven (i.e. miters and butts).*

**QUALITY STANDARD**

Seams, mitered or butt joints, should not exceed 1/32" in laminate and should not exceed 1/16" in granite. No seams, mitered or butt joints are acceptable in Corian.

**REPAIR RESPONSIBILITY**

Builder to repair any seams in excess of 1/32" in laminate and 1/16" in granite. Installer of countertop is responsible for shimming the cabinets to make sure countertop is even at joints.

5. **OBSERVATION**

*Chips or cracks or gouges in granite or marble tops.*

**QUALITY STANDARD**

As a natural product, cracks and voids can appear naturally in these products.

**REPAIR RESPONSIBILITY**

Builder to fill top and re-polish.

6. **OBSERVATION**

*Uneven seams in granite or marble top.*

**QUALITY STANDARD**

Seams should be level.

**REPAIR RESPONSIBILITY**

Builder to repair.

## **DRYWALL AND PLASTER STANDARD**

### **Background**

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

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

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

In evaluating the need for drywall and plaster repairs, the general rule to be applied is that if the defect is readily noticed by visual inspection under normal lighting conditions, it should be repaired. The term "normal lighting conditions" is defined as diffused, indirect, general lighting. Homeowners should be aware that a direct light source parallel to or nearly parallel to a surface will reveal normal, acceptable drywall/plaster seams.

Due to the initial shrinkage, which exists with every new home, it is both impossible to correct each individual defect as it occurs, and essentially useless to do so. The entire house will tend to stabilize itself near the end of the warranty period, and one repair should be made when necessary, preferably near the end of the 12<sup>th</sup> month after occupancy upon request by the homeowner. Repairs will be made no more than one time during the warranty period. All repairs should be made to within industry standards. Any reoccurrence beyond the warranty period becomes a homeowner's maintenance item.

Since drywall and plaster are finish materials, repairs will be slightly visible due to a color or texture mismatch after they have been made. The mismatch will be even more visible when a special textured finish has been employed. Repairs do not require repainting when they are applied on unpainted surfaces such as unpainted ceiling or when the builder did not contract for the painting. The builder will attempt to match the repair texture as closely as possible, but the exact color match of the unpainted surface is impossible to achieve. Where the repair has been made on a painted surface, the builder will not be responsible for paint touch-up unless the painting was done on a bid basis.

In a repair situation, care will be taken by the builder to minimize dust; however, it is the homeowner's responsibility to clean up the dust.

These Quality Standards are applicable for the first year of warranty only.

1. **OBSERVATION**

*Defects become visible such as normal shrinkage or nail pops, cracks, seam lines, ridging or cracked corner beads.*

**QUALITY STANDARD**

Any of the above defects which can be readily determined by visual inspection from six feet away (without lighting the defect from one direction) shall be repaired by the builder except where normal repainting will cover the defect, as in the case of a hairline crack.

**REPAIR RESPONSIBILITY**

Builder should repair original finish as closely as possible. Repairs will be made no more than one time during the warranty period.

2. **OBSERVATION**

*Defects caused by workmanship during installation are noticeable such as blisters in the tape, excess compound in joints, trowel marks, texturing omissions, or irregular angular joints or corners.*

**QUALITY STANDARD**

Defects, which can be readily observed by visual inspection under normal lighting conditions, are beyond acceptable standards. Homeowner should be aware that when drywall is installed over some manufacturer's products, such as modular tubs and shower enclosures, those products will deflect the drywall from its normal plane.

**REPAIR RESPONSIBILITY**

Builder should correct such defects as in (1) above.

3. **OBSERVATION**

*Mudded areas show photographing.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

Photographing is not common, but when it is readily visible, it is the builder's obligation to repair.

4. **OBSERVATION**

*Drywall separates at ceiling due to truss lifting.*

**QUALITY STANDARD**

Truss lift is a term used to define the situation in which the bottom chord of a truss (to which the drywall is attached) separates the drywall of the ceiling from the drywall of the wall causing a visible gap at the ceiling/wall juncture. Natural truss lift occasionally occurs. Truss lift occurs during the heating season; trusses normally return back down in the summer months.

**REPAIR RESPONSIBILITY**

None.

5. **OBSERVATION**

*Walls are bowed or out of plumb.*

**QUALITY STANDARD**

Refer to Carpentry Standard items #4 for acceptable tolerance.

6. **OBSERVATION**

*Texturing on repairs is uneven.*

**QUALITY STANDARD**

Since drywall and plaster are finish materials, repairs will be slightly visible due to a color or texture variation after the repair has been completed.

**REPAIR RESPONSIBILITY**

The builder should attempt to uniformly match the color and texture; however, the builder cannot assure a perfect match.

**E.I.F.S. STANDARD**  
**(Exterior Insulation & Finish System)**

**Background**

E.I.F.S. (Exterior Insulation and Finish System) is an aesthetic stucco system. E.I.F.S. finishes are comprised of foam insulation installed over wall sheathing, then finished with polymer base coat and finish coat. Details can be added to the surface to achieve the desired architectural look. As the E.I.F.S. ages, general homeowner maintenance should be followed to keep the surface clean and to repair any sealant or surface damages. These are current standards. (These standards do not apply to cementitious stucco applied over lath.)

1. **OBSERVATION**

*Joints or fasteners telegraph through finish.*

**QUALITY STANDARD**

There are many joints and fasteners on each installation, which may telegraph through finish.

**REPAIR RESPONSIBILITY**

None.

2. **OBSERVATION**

*There are dents or puncture holes in finish.*

**QUALITY STANDARD**

There should be no dents or puncture holes at the time of the walk-through.

**REPAIR RESPONSIBILITY**

None.

3. **OBSERVATION**

*There are cracks in the finish.*

**QUALITY STANDARD**

There should be no cracks in finish at the time of the walk-through.

**REPAIR RESPONSIBILITY**

The builder should repair any cracks during the warranty period. After the warranty period it is a homeowner maintenance item.

4. **OBSERVATION**

*Finish is delaminating.*

**QUALITY STANDARD**

The finish should not be delaminating at the time of the walk-through.



**REPAIR RESPONSIBILITY**

The builder is responsible during the warranty period. After the warranty period it is a homeowner maintenance item.

5. **OBSERVATION**

*Finish is dirty or stained.*

**QUALITY STANDARD**

- a. Finish coat shall be consistent in color upon completion of application of stucco.
- b. Minor variations may occur along low areas due to dirt and dust accumulation.

**REPAIR RESPONSIBILITY**

Clean stains with water compatible to household cleaners and a soft non-metallic brush. Commercial cleaning products are also available to clean E.I.F.S. finishes. Builder should clean E.I.F.S. until homeowner takes over ownership. After that it is a homeowner maintenance item.

6. **OBSERVATION**

*Caulk joints crack or split.*

**QUALITY STANDARD**

There should be no cracks or splits in caulk joints at the time of the walk-through.

**REPAIR RESPONSIBILITY**

During the warranty period the builder should repair affected area; after the warranty period it is a homeowner maintenance item.

7. **OBSERVATION**

*Caulk joints are dirty or discolored.*

**QUALITY STANDARD**

Weather and atmospheric conditions, sun, and airborne dirt and pollution affect caulking color.

**REPAIR RESPONSIBILITY**

No remedy shall be taken by builder unless the physical performance of the caulk is impaired within a one-year period of original application.

8. **OBSERVATION**

*Mold, mildew or algae appear on E.I.F.S. surface.*

**QUALITY STANDARD**

Mold, mildew or algae are microorganisms which can grow on virtually any surface if the conditions are right. There should be no mold, mildew or algae on E.I.F.S. surface at the time of completion.

**REPAIR RESPONSIBILITY**

None.

# ELECTRICAL STANDARD

## Background

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

1. **OBSERVATION**

*Outlets and switches do not work.*

**QUALITY STANDARD**

All outlets and switches must be operative at time of walk-through.

**REPAIR RESPONSIBILITY**

The builder should repair or replace wiring or replace defective outlets and switches to make them work properly.

2. **OBSERVATION**

*Lights and fans do not work.*

**QUALITY STANDARD**

Wiring to fixture must be operative.

**REPAIR RESPONSIBILITY**

Builder to repair defective wiring to lights and fans. However, if the wiring is operative, refer to the lighting fixture standard.

3. **OBSERVATION**

*Lights dim or flicker in parts of building.*

**QUALITY STANDARD**

Normally, lights may dim or flicker during starting of some motor driven equipment or portable appliances.

**REPAIR RESPONSIBILITY**

The builder should check wiring for installation per standards of State Electrical Code, and, if found not to meet Code, should repair to meet Code. Heavy demands on electrical circuits from portable appliances and heaters may also cause flickering.

4. **OBSERVATION**

*Lights dim/flicker in entire building.*

**QUALITY STANDARD**

Normally, lights should not flicker throughout the entire building at one time.

**REPAIR RESPONSIBILITY**

The builder should first check internal wiring as necessary and correct to Code, if necessary. If internal wiring is per standards of State Electrical Code, owner should then notify the electric power company for possible defects in supply source.

5. **OBSERVATION**

*Circuit breakers trip out.*

**QUALITY STANDARD**

Circuit breakers should disengage in cases where there may be an overload of a circuit. (See #6 re: GFCI circuits)

Circuit breakers trip to disconnect a dangerously large load to prevent overheating the wires and causing a fire. Many outlets may be connected to one breaker. Portable appliances such as coffee makers, toasters, hot plates and heaters place heavy demands on electrical circuits. When more than one of this type of appliance is plugged into a multi-outlet circuit, the circuit breaker may overload and trip. In this case the owner will be required to limit the number of appliances in use at one time. Some portable appliances such as air conditioners and heaters may require a dedicated circuit.

**REPAIR RESPONSIBILITY**

The builder cannot be responsible for what an owner plugs into an electrical outlet.

If the problem is found to be a defective appliance, the owner will pay for the service charge and any subsequent expenses.

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

**6. OBSERVATION**

*Ground fault circuit interrupter (GFCI) trips frequently.*

**QUALITY STANDARD**

Ground fault interrupters are sensitive safety devices installed into the electrical system to provide protection against electrical shock. These sensitive devices can be tripped very easily. They will trip if a defective portable appliance is plugged into an outlet protected by a GFCI.

**REPAIR RESPONSIBILITY**

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

If the GFCI is defective it shall be replaced at the builder's expense. Otherwise the owner will pay for the service charge and any subsequent expenses.

**7. OBSERVATION**

*Exterior outlets do not work.*

**QUALITY STANDARD**

Exterior outlets are downline of a GFCI. One GFCI can control many outlets.

**REPAIR RESPONSIBILITY**

Owner shall locate the controlling GFCI and reset it. If it is an electrical problem, the builder should repair.

**8. OBSERVATION**

*Door bells/chimes do not work.*

**QUALITY STANDARD**

Door bells/chimes should operate.

**REPAIR RESPONSIBILITY**

Builder to repair or replace if door bells/chimes are supplied by the builder. Owner is responsible for repair or replacement if door bells/chimes were owner supplied. If an owner-supplied bell/chime does not work, the builder will ensure that wiring is properly installed.

# FIREPLACE STANDARD

## Background

Fireplaces fall into two categories, the first of which is "full masonry." This type of fireplace is constructed with masonry flue, exterior veneer and interior firebox. The second is "prefabricated," with both chimney and firebox. Homeowner should consult the manufacturer's warranty for prefabricated firebox and chimney.

1. **OBSERVATION**

*Fireplace or chimney does not draw properly.*

**QUALITY STANDARD**

To function properly, a fireplace must be installed per Code standards and per manufacturer's recommendations. Fireplaces installed properly may still experience draft problems. For example, it is normal to expect that high winds can cause temporary negative draft situations. Similar negative draft situations can also be caused by obstructions such as large branches too close to the chimney.

All fireplaces need air for combustion. Outside air should be supplied to the fireplace, either through the firebox or through opening a window.

**REPAIR RESPONSIBILITY**

The builder should determine the cause of malfunction. If the determination is that the fireplace is not constructed or installed per Code or manufacturer's recommendations, the builder shall correct.

2. **OBSERVATION**

*Firebox paint or decorative trim finish is changed by fire.*

**QUALITY STANDARD**

Heat from fires can alter the finish.

**REPAIR RESPONSIBILITY**

None.

3. **OBSERVATION**

*Cracked firebrick, and/or cracked mortar joints appear in firebox.*

**QUALITY STANDARD**

There should be no cracks in the firebrick and mortar joints at time of walk-through.

**REPAIR RESPONSIBILITY**

None. Homeowners should be aware that excessive heat will cause cracking and that cracks in firebrick and mortar joints in a masonry fireplace exceeding 1/8" should be tuckpointed or replaced. The owner should repair cracked firebrick panels per manufacturer's recommendations.

4. **OBSERVATION**

*Cracks show in masonry chimney caps.*

**QUALITY STANDARD**

There should be no cracks in the chimney caps at the time of walk-through.

Owners should check masonry chimney caps periodically for hairline cracks in the concrete and brick, and especially next to the flue. These cracks are caused by shrinkage and severe weather conditions and should be repaired. Failure to do this could result in moisture getting into the chimney, freezing and cracking the flue material or the face of the brick or stone.

**REPAIR RESPONSIBILITY**

The builder should repair within the warranty period.

5. **OBSERVATION**

*Fireplace fans are noisy.*

**QUALITY STANDARD**

By nature of their function and location, fireplace fans will make some noise.

**REPAIR RESPONSIBILITY**

Defective fans will be replaced per manufacturer's warranty. Improperly installed fans should be repaired by builder.

6. **OBSERVATION**

*Chimney separates from structure to which it is attached.*

**QUALITY STANDARD**

Newly built chimneys will often experience a slight amount of separation. Separation should not exceed 1/2" from the main structure in any 10' vertical measurement, and should not exceed 1" for the total height of the chimney.

**REPAIR RESPONSIBILITY**

Builder will determine the cause of separation and correct if standard is not met. Caulking is an acceptable repair.

7. **OBSERVATION**

*Cold air and drafts are felt around fireplace when not in use.*

**QUALITY STANDARD**

Air movement is necessary for proper function of fireplaces and chimneys. Due to design or location of some fireplace units, either prefabricated or masonry, it is normal to feel air movement around the fireplace.

**REPAIR RESPONSIBILITY**

None.

8. **OBSERVATION**

*Fireplace produces a smell during initial operations.*

**QUALITY STANDARD**

New fireplaces will produce a burning smell when first used. Products used in manufacturing are burned off, and may require up to 8 hours of operation before the "burn off" is complete.

**REPAIR RESPONSIBILITY**

None.

9. **OBSERVATION**

*Wall and mantle above fireplace are hot to touch.*

**QUALITY STANDARD**

Fireplace can transfer its heat to the mantle or wall above the fireplace. Running the fireplace fan can dissipate some of the heat.

**REPAIR RESPONSIBILITY**

There is no need for repair if the mantle is installed to the required clearances.

10. **OBSERVATION**

*Gas odor is detected around the fireplace.*

**QUALITY STANDARD**

There shall be no leaks or gas odor in the fuel lines.

**REPAIR RESPONSIBILITY**

Homeowner should immediately call company that installed the firebox or gas line, utility or fuel supplier to determine cause of leak. Builder is responsible for repair of leaks during the warranty period.

11. **OBSERVATION**

*Fireplace makes noise when heating up or cooling off.*

**QUALITY STANDARD**

There will be metal expansion and contraction as a fireplace is used. These noises will vary in volume.

**REPAIR RESPONSIBILITY**

Refer to manufacturer's warranty .

## **FLOORING STANDARD**

### **Carpeting**

#### **Background**

Carpet is a common material in new homes and remodeling projects. Carpet is purchased for a variety of reasons such as comfort, quietness, durability as well as aesthetics and appearance.

A standard carpet installation will use seaming techniques to join the material and these seams will be somewhat visible. Carpeting is subject to normal manufacturing tolerance and particularly to lot variations affecting color, texture and pattern. From time to time, patterns are discontinued, which makes it impossible to exactly duplicate the material, hence it is recommended that the homeowners save any scrap material from the carpet installation for any future repairs that may be required because of burns, spots, etc.

Today's carpets are generally composed of synthetic fibers. Because of the diverse areas in which carpet is used, crushing of the fibers will be apparent at some point in the carpet's useful life. Installation by a qualified craftsman is essential, since proper installation is reflected in the product's future performance.

Proper maintenance procedures must be followed to ensure the carpet's lasting beauty. Owners should contact their local carpet store for answers to questions.

Carpet purchase and installation may be contractually assumed by the owners or may be contractually provided by the builder as an allowance item. *The method of purchase will determine areas of responsibilities.*

These Quality Standards are applicable for the first year of warranty only.

1. **OBSERVATION**

*Carpet seams are noticeable.*

**QUALITY STANDARD**

Noticeable seams in carpet are unavoidable and acceptable; however, proper installation shall not permit visible gaps or overlaps.

Shade variations due to improper installation or manufacturer's defect are unacceptable. Perceived shade variations caused by light reflectance are acceptable.

**REPAIR RESPONSIBILITY**

The party who contracted with the carpet installer is responsible for repair to meet the Quality Standard.

2. **OBSERVATION**

*Carpet becomes loose from its point of attachment.*

**QUALITY STANDARD**

Carpet should not become loose from its point of attachment, unless caused by excessive moisture or the presence of water.

**REPAIR RESPONSIBILITY**

The party who contracted with the carpet installer is responsible for reattaching loose carpet unless the loosening is caused by excessive moisture or water. Loosening caused by excessive moisture or water is the homeowner's responsibility.

3. **OBSERVATION**

*Carpet is wrinkled.*

**QUALITY STANDARD**

Carpet should not be wrinkled unless caused by excessive moisture, water, or abuse (i.e., movement of heavy objects/furniture across the carpet)

**REPAIR RESPONSIBILITY**

The party who contracted with the carpet installer is responsible for removing wrinkles from the carpet unless the wrinkling is caused by excessive moisture or water. Wrinkling caused by excessive moisture, water, and/or abuse is the homeowner's responsibility.

4. **OBSERVATION**

*Carpet has spots or is faded.*

**QUALITY STANDARD**

At the walk-through, no spots or fading caused by builder, his/her agents or his/her subcontractors should be apparent.

**REPAIR RESPONSIBILITY**

The builder will repair spots or fading caused by the builder, his/her agents or his/her subcontractors when it is reported at the walk-through. Any spotting or fading that takes place after the walk-through is the homeowner's responsibility.

5. **OBSERVATION**

*Carpet appears crushed or shaded in traffic areas.*

**QUALITY STANDARD**

Because of the diverse areas in which it is used, crushing of the fibers will be apparent at some point in the carpet's useful life. Shading due to pile crush is not considered a defect. Choice of the proper carpet pad will support and enhance the carpet's performance. Installation by a qualified craftsman is essential, since proper installation is reflected in the product's future performance. Proper maintenance procedures must be followed to ensure the carpet's lasting beauty. Owners should contact their local carpet store for answers to questions.

**REPAIR RESPONSIBILITY**

None. Not considered a defect.

# **FLOORING STANDARD**

## **Ceramic or Quarry**

### **Background**

Ceramic tile, quarry tile, and natural stones are used as finished flooring surfaces and in some countertop and wall applications. Hard tile is supplied as a finished product and is subject to color and size variations. The tiles may be attached with mastic (glue) or directly set into a mortar base. After the tile is set, grout is generally applied to fill the joints. The natural settling and shrinking of the home will affect grouting. Re-grouting will be required by the homeowner as normal maintenance throughout the life of the home.

Ceramic, quarry or natural stone flooring purchase and installation may be contractually assumed by the owners or may be contractually provided by the builder as an allowance item. *The method of purchase will determine areas of responsibilities.*

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

#### **1. OBSERVATION**

*Cracks or separations appear in grout or at junctions with other materials such as a bathtub.*

#### **QUALITY STANDARD**

Due to the shrinking and settling process, cracks or separations are common.

#### **REPAIR RESPONSIBILITY**

If damage to other components of the house is possible unless repair is done immediately, the builder will repair cracks and separations near the end of the warranty period. After the warranty period, such maintenance becomes the owner's responsibility.

There may be a color variation in the tile and/or grout in any repaired areas.

#### **2. OBSERVATION**

*Tile is cracked or broken.*

#### **QUALITY STANDARD**

Due to the shrinking and settling process, tile cracks and breakage are possible. At the walk-through, there should be no cracked or broken tile.

#### **REPAIR RESPONSIBILITY**

Near the end of the warranty period, the builder should repair tiles cracked or broken due to the shrinking and settling process. Cracks or breakage due to abuse are not covered by the warranty.

There may be a color variation in the tile and/or grout in any repaired areas.

#### **3. OBSERVATION**

*Tile is loose.*

#### **QUALITY STANDARD**

Due to the shrinking and settling process, loose tiles are possible. At the walk-through, there should be no loose tile.

#### **REPAIR RESPONSIBILITY**

During the warranty period, the builder should repair any loose tiles.

#### **4. OBSERVATION**

*Grout discolors.*



**QUALITY STANDARD**

At the walk-through, there should be no discoloration of grout.

**REPAIR RESPONSIBILITY**

Builder shall repair any discolorations found at walk-through. After the walk-through, the builder carries no further repair responsibility.

**5. OBSERVATION**

*Tile varies in color and/or size.*

**QUALITY STANDARD**

Variations are inherent in all tile.

**REPAIR RESPONSIBILITY**

None.

**FLOORING STANDARD****Resilient Flooring****Background**

Resilient flooring is a manufactured product. It is generally available as sheet goods (inlaid and rotovinyls), usually in 6' or 12' widths, and also as tile in 9"x9" or 12"x12" sizes.

Resilient flooring material today is composed of vinyl. Because vinyl is thermoplastic, it tends to telegraph any subfloor irregularity. Therefore, quality installation by a competent craftsman is imperative. Installation in strict accordance with manufacturer's instructions is necessary. Some vinyls have a urethane surface layer making maintenance very easy, but it is important to follow manufacturer's instructions when cleaning these floors. Vinyl flooring may not resist the extreme pressure of spike-heeled shoes. A retail salesperson should be able to answer specific performance questions.

Vinyl purchase and installation may be contractually assumed by the owners or may be contractually provided by the builder as an allowance item. *The method of purchase will determine areas of responsibilities.*

**1. OBSERVATION**

*Nail pops appear on the surface of resilient flooring.*

**QUALITY STANDARD**

Due to shrinkage and movement of building materials, nail pops may occur.

**REPAIR RESPONSIBILITY**

During the warranty period, builder shall repair nail pops by removing a small section of the flooring in the affected area, repairing the nail pops, and patching the flooring with available materials.

**2. OBSERVATION**

*Depressions or ridges appear in the resilient flooring due to underlayment irregularities.*

**QUALITY STANDARD**

Due to shrinkage and movement of building materials, some mismatch of the underlayment may exhibit and mirror itself as ridges or depressions showing on the resilient flooring. Smooth vinyl surfaces mirror and emphasize any variations of the surface to which they are applied. Ridges or depressions shall not exceed 1/8" within any 6" measurement.

**REPAIR RESPONSIBILITY**

If the variation exceeds the standard, builder to remove the resilient flooring in the minimum area where the joint will not be readily visible when repaired, re-nail the subflooring or underlayment, sand smooth and/or fill gap and re-seam the resilient flooring. If a patch is necessary, owner should note that there may be a mismatch in materials due to time difference or dye lot variations. If the material is unavailable due to discontinuation, builder shall make the repair using as closely matched materials as currently available. Builder should credit the homeowner 1½ times the builder's cost to repair if the materials were available. That would be 1½ times the minimum service charge, plus the additional hourly labor charge and material cost needed to make the repair.

**3. OBSERVATION**

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

**QUALITY STANDARD**

Under normal use and conditions, resilient flooring should not loosen during the warranty period.

**REPAIR RESPONSIBILITY**

Providing edges are still intact, builder shall re-secure the material. If not, the builder shall replace the minimum areas as per standard #2.

**4. OBSERVATION**

*Gaps appear at seams of resilient flooring.*

**QUALITY STANDARD**

Gaps shall not exceed 1/32" in width in resilient flooring seams.

**REPAIR RESPONSIBILITY**

Builder shall correct to meet Quality Standard during the term of the warranty.

**5. OBSERVATION**

*Flooring discolors.*

**QUALITY STANDARD**

At the walk-through, no discoloration caused by the builder, his/her agents or subcontractors should be apparent. Homeowner should be aware that tracking substances such as oil, fertilizers, asphalt, driveway sealers with an asphalt/cool tar base, carpet dyes, etc., onto resilient flooring can cause permanent stains, as can the use of latex or rubber-backed throw rugs. Owner should also be aware that excessive moisture or heat can cause discoloration and should be avoided.

**REPAIR RESPONSIBILITY**

Any discoloration caused by the product defect, by the builder, his/her agents or subcontractors and which are reported at the walk-through are the builder's responsibility to correct. It is the owner's responsibility to protect the flooring by eliminating exposure to potential discoloration agents.

**6. OBSERVATION**

*The color of resilient flooring fades.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

This is neither a manufacturing defect nor the builder's responsibility. It is the owner's responsibility to protect these areas by the use of drapes or blinds during times of direct sunlight exposure.

7. **OBSERVATION**

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

**QUALITY STANDARD**

No heel marks, burns, scratches, scuffs or indentations should be evident at the walk-through.

**REPAIR RESPONSIBILITY**

If builder is notified prior to occupancy or at walk-through, it is the builder's responsibility to repair, unless it is apparent damage was caused by homeowner, a homeowner's subcontractor, or others under the direction of the homeowner (i.e. appliance delivery, utility workers, etc.) After that time, it is the responsibility of the homeowner.

8. **OBSERVATION**

*Surface of resilient flooring shows wear patterns.*

**QUALITY STANDARD**

No wear should be apparent at walk-through.

**REPAIR RESPONSIBILITY**

Refer to manufacturer's warranty.

## **FLOORING STANDARD**

### **Wood Floors**

#### **Background**

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

Homeowners who want their wood floor to last, however, should note that the number one enemy of a hardwood floor is moisture. Wood floors naturally expand when moisture is present and shrink when it is not. Whether the reactions are a problem or not depends on the severity of the situation. Following are some of the common effects when water and wood floors combine:

**Cracks between boards:** Almost every wood floor endures some expansion and contraction as seasons and humidity levels change. When homes are heated, humidity levels plummet, boards shrink and spaces appear between the boards. In dry months, cracks can easily develop to the thickness of a dime on a typical solid 2 1/4" oak floor, and far greater with a softwood, with light-colored woods making the cracks appear larger. Plank floors will also show cracks more. These spaces are to be expected and usually close up as the season changes and moisture returns to the air. To reduce the degree of change, homeowners can add moisture to the air during the dry months, ideally by installing a humidifier.

**Cupping & Crowning:** As with cracks between boards, both cupping and crowning are natural reactions to moisture and should not be a concern if they occur only to a minor extent. More severe cases, however, indicate a serious moisture problem.

"Cupping" describes a condition in which the edges of a board are high and its center is lower. Humidity is usually the culprit; although cupping can also happen after water has been spilled onto the floor and absorbed into the wood. The moisture causes the wood to swell, crushing the boards together and deforming them at the edges. In order to repair the floor, the cause of the moisture must be identified. Most often, indoor humidity will have to be controlled. Other causes could include situations that can allow

moisture to migrate up into the subfloor and the wood flooring. Once the cause of the moisture is controlled, cupping many times can be reversed. Oftentimes the floor may naturally dry out and improve over time. Fans may be necessary to speed the drying process. After the floor has dried, it may be necessary to re-coat the floor with finish, or to sand and refinish the floor. "Crowning" is the opposite of cupping: The middle of the board is higher than the edges of the board. This can occur when the surface of the floor encounters moisture.

**Buckling:** Buckling is one of the most extreme reactions to moisture that can occur with a hardwood floor. It happens when the floor literally pulls away from the subfloor, up to heights as high as several inches. Fortunately, buckling is an uncommon occurrence, usually happening only after a floor has been flooded.

Controlling humidity is the most important factor in preventing problems with moisture and your wood floor. The correct maintenance will go a long way in avoiding problems.

Wood flooring purchase and installation may be contractually assumed by the owners or may be contractually provided by the builder as an allowance item. *The method of purchase will determine areas of responsibilities.*

### **Overall appearance of your wood floor**

Inspection of your finished wood floor should be done from a standing position with normal lighting. Glare, particularly from large windows, magnifies any irregularity in the floors and should not determine acceptance.

A finish similar to that found on fine furniture should not be expected. Trash in the finish, a wavy look along strips, deep swirls or sander marks, and splotchy areas can be indications of inadequate finishing or cleaning. The quality of the finish can be acceptable and still include some of these problems, but they should not appear over the entire floor.

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

These Quality Standards are applicable for the first year of warranty only.

1. **OBSERVATION**  
*Gaps in hardwood floors.*

#### **QUALITY STANDARD**

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

#### **REPAIR RESPONSIBILITY**

Builder to repair gaps in excess of 1/8". Wood filler is not an acceptable repair.

2. **OBSERVATION**  
*Wearing of finish on wood floor.*

#### **QUALITY STANDARD**

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

#### **REPAIR RESPONSIBILITY**

None

3. **OBSERVATION**

*Cupping or crowning of hardwood floors.*

**QUALITY STANDARD**

Cups or crowns in strip hardwood floorboards shall not exceed 1/16" in height in a 3" maximum span measured perpendicular to the long axis of the board. Cupping and crowning caused by exposure to moisture beyond the control of the builder is not covered. There is no warranty for cupping or crowning on a pine or soft wood floor.

**REPAIR RESPONSIBILITY**

Builder to repair or replace any boards that have cupped on hardwood floors. There is no warranty for cupping on a pine or soft wood floor.

4. **OBSERVATION**

*Dents in wood floors.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

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

5. **OBSERVATION**

*Fading and changing colors of wood floors.*

**QUALITY STANDARD**

Exposure to sunlight through glass can cause fading or discoloration of wood floors.

**REPAIR RESPONSIBILITY**

This is neither a manufacturing defect nor the builder's responsibility, but is the homeowner's responsibility to protect these areas by the use of drapes, blinds or area rugs during times of sunlight exposure. Wood flooring's ability to fade is no different in this instance than any drapes, furniture or carpeting in the home.

6. **OBSERVATION**

*Top coating on hardwood flooring has peeled.*

**QUALITY STANDARD**

Field applied coating shall not peel during normal usage. Prefinished coatings are the manufacturer's responsibility.

**REPAIR RESPONSIBILITY**

The builder shall refinish any field-applied finishes that have peeled.

7. **OBSERVATION**

*Hardwood floor buckles from substrate.*

**QUALITY STANDARD**

Hardwood floor should not become loose from substrate unless it is a floating floor.

**REPAIR RESPONSIBILITY**

The builder will repair to meet Quality Standard.

8. **OBSERVATION**  
*Excessive knots and color variation of strip hardwood flooring.*
- QUALITY STANDARD**  
All woods should be of the species specified in contract. Different woods allow different color variations and knots.
- REPAIR RESPONSIBILITY**  
None
9. **OBSERVATION**  
*Floors squeak. (Also see Carpentry-Rough, Ceramic Tile, Resilient Flooring, Laminate Flooring)*
- QUALITY STANDARD**  
Floor squeaks are common to new construction and a squeak-proof floor cannot be guaranteed.
- REPAIR RESPONSIBILITY**  
Builder to employ methods that minimize floor squeaks. Builder is not responsible to remove the floor covering. It should be noted that a floor above a finished area would be surface nailed in carpeted and wood floor areas and impossible to repair in vinyl or ceramic areas.
10. **OBSERVATION**  
*Slivers or splinters appear in strip flooring.*
- QUALITY STANDARD**  
Slivers or splinters that occur during the installation of the flooring are unacceptable. The imperfections that occur during installation should have been shaved and the area filled prior to sanding and finishing.
- REPAIR RESPONSIBILITY**  
Builder to repair.
11. **OBSERVATION**  
*Finish on wood floor shows wear.*
- QUALITY STANDARD**  
At the walk-through, wood floor should not show wear.
- REPAIR RESPONSIBILITY**  
The homeowner should maintain wood flooring according to manufacturer's or installer's care sheet.
12. **OBSERVATION**  
*Finish is uneven on wood floors.*
- QUALITY STANDARD**  
There should be no missed areas on the finished floor.
- REPAIR RESPONSIBILITY**  
Builder to repair if visibly uneven.
13. **OBSERVATION**  
*Foreign material is imbedded in finish.*

### **QUALITY STANDARD**

When inspected from a standing position, foreign material may be present but should not be prominent.

### **REPAIR RESPONSIBILITY**

If **excessive** foreign materials are reported to be embedded in the finish at the walk-through, the builder will repair.

## **GRADING, GROUND REMOVAL, GRAVEL & FILL**

### **Background**

It is the intention of this standard to assist in obtaining a uniform acceptable understanding of grading and related problems. The standard is not meant to supersede or substitute for other restrictions placed by governmental agencies or communities.

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

Homeowner must be aware that backfilling/grading time includes travel. Excavation, backfill, grading and filling may be contractually provided by the builder as either a "bid" included in the base price of the home or done as an allowance item. The method of purchase will determine areas of responsibilities.

These Quality Standards are applicable for the first year of warranty only.

### **Excavation**

To remove soil to the level and outline of the proposed footing. Excavated soil is normally cast (dropped on the property) around the foundation except where lot size, site conditions and/or elevation requires its removal. Trucking or grading costs to move or remove soil are the responsibility of the homeowner. In the case of no master grading plan, the builder normally sets the grade. Grading, swales and drainage systems may be required and are to be done by the homeowner in their landscaping phase.

### **Hauling (Trucking)**

Hauling away excess ground or supplying and hauling in required fill, unless otherwise specified in the contract, would be an extra cost to the homeowner.

### **Backfilling**

Backfilling is to fill the exterior around a foundation or in a trench using a bulldozer or other necessary mechanical equipment, generally utilizing only the ground that was available from such excavation or trench. Bringing in of additional stone or fill would be a cost to the homeowner. The purpose of backfilling is to improve working conditions for further construction, attempt to protect the foundation from the elements such as frost, water, etc., reduce the hazards inherent to open basements or foundations and get the process of ground settlement started, which could take three years or more depending upon the type of soil.

### **Rough Grading**

Using mechanical equipment, the grader slopes the terrain to provide drainage away from the foundation, in such a way as to indicate approximate grades at the building. This is normally done on an allowance specified in the contract. Builder is not responsible for settling.

### **Finish Grading**

The landscaper normally does the finish grading. Using mechanical equipment and the dirt on the site, the grader establishes the yard grade within 2" of final landscaped grade with respect to the building, walls, drive and adjoining properties. Depending on the terms of the contract, this would ordinarily include

the entire lot. This is normally contracted for by the homeowner and is the step just prior to landscaping; many times it's incorporated with the landscaping.

### **Landscaping**

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

These Quality Standards are applicable for the first year of warranty only.

1. **OBSERVATION**

*Ground settles around foundation, sewer or septic trenches after backfill operations.*

**QUALITY STANDARD**

Backfilled ground will settle.

**REPAIR RESPONSIBILITY**

In cases in which the builder is not responsible by contract for finish grade or landscaping, the builder will not be responsible for normal settling of backfilled or trenched areas. All repairs to rough grade are the responsibility of the party who contracts for finish grading or landscaping.

2. **OBSERVATION**

*Basement walls are wet after backfilling. "Wet" shall be defined as actual water running or trickling from, through or under the basement wall and onto the floor, thus puddling or eventually finding the floor drain. Dampness of the walls particularly at the upper two (2) and lower one (1) foot are common to new construction and should not be construed as "wet."*

**QUALITY STANDARD**

Wet walls are usually a result of sunken areas around the foundation. The subsequent proper grading and landscaping should eliminate damp or wet basements.

**REPAIR RESPONSIBILITY**

Repair of rough grade is the responsibility of the party who contracts for final grade or landscaping.

3. **OBSERVATION**

*Too much or too little fill material is hauled during excavation and backfill process.*

**QUALITY STANDARD**

Hauling at the time of excavation should leave the site within  $\pm 40$  cubic yards of rough grade needs if there is room for storage on the site. Completion of actual rough grade should leave the site within 20 cubic yards of the builder's anticipated final grade. These tolerances do not include topsoil.

**REPAIR RESPONSIBILITY**

The Builder will perform to meet Quality Standard above with owner being charged according to the terms of the contract.

4. **OBSERVATION**

*Extra costs are incurred at time of first excavation or grading due to poor subsoil conditions, rock formations, tree stumps, trees, frost, high water table, etc.*

**QUALITY STANDARD**

Responsibility for bearing extra costs as above shall be as determined by contract.

**REPAIR RESPONSIBILITY**

None.



5. **OBSERVATION**

*Improper drainage away from the foundation is observed.*

**QUALITY STANDARD**

During rough grading, the necessary temporary/initial grades and swales will be established by the builder to ensure proper drainage away from the home. No grading determination shall be made while there is frost or snow on the ground, or while the ground is saturated. Final drainage is the responsibility of the party who contracts for landscaping.

**REPAIR RESPONSIBILITY**

The builder shall perform to meet the Quality Standard.

6. **OBSERVATION**

*Improper drainage of the site.*

**QUALITY STANDARD**

If the builder has done the finish grading or landscaping, 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 that in swales that drain other areas, or in areas where sump pumps discharge, a longer period can be anticipated (generally no more than 48 hours). The possibility of standing water after an unusually heavy rainfall should be anticipated. No grading determination shall be made while there is frost or snow on the ground, or while the ground is saturated.

**REPAIR RESPONSIBILITY**

If builder has done the finish grading or landscaping, he is responsible to re-establish the proper grades and swales. The homeowner is responsible for maintaining such grades and swales once they have been re-established. If builder did rough grading only, there is no repair responsibility.

## **GUTTER STANDARD**

### **Background**

Gutters are designed to handle normal amounts of rainfall and direct water off the roof and away from the building. Most problems with gutters are due to collection of leaves and debris in the gutters. It is the homeowner's responsibility to keep the gutters and downspouts free of leaves and debris and operating properly.

1. **OBSERVATION**

*Gutters and downspouts leak at joints.*

**QUALITY STANDARD**

Gutters and downspouts should not leak.

**REPAIR RESPONSIBILITY**

During the warranty period the builder will repair so gutters and downspouts do not leak.

2. **OBSERVATION**

*Downspout leaks at the seam.*

**QUALITY STANDARD**

Properly maintained downspouts should not leak at the seam.

**REPAIR RESPONSIBILITY**

None.

3. **OBSERVATION**

*Gutters overflow.*

**QUALITY STANDARD**

Overflows can occur during extreme weather conditions.

**REPAIR RESPONSIBILITY**

Owner is responsible for keeping gutters and downspouts free of debris, which may cause overflow.

4. **OBSERVATION**

*Water stands in gutters.*

**QUALITY STANDARD**

Water may pool in gutters up to 3/4".

**REPAIR RESPONSIBILITY**

Builder to repair gutter during warranty period if water pools in excess of the Quality Standard.

5. **OBSERVATION**

*Gutters and downspouts are clogged with leaves or debris.*

**QUALITY STANDARD**

Debris can collect in gutters and downspouts.

**REPAIR RESPONSIBILITY**

It is the homeowner's responsibility to clear leaves and debris from gutters and downspouts. The homeowner may wish to install screening on the gutters to assist in keeping some of the debris out of the gutters.

6. **OBSERVATION**

*Gutters are dented.*

**QUALITY STANDARD**

There should be no dents in the gutters at the walk-through. Any dents noted during the walk-through should be noted in writing.

**REPAIR RESPONSIBILITY**

The Builder will repair dented gutters reported at the walk-through. The homeowner is responsible for any dents not reported at the walk-through.

7. **OBSERVATION**

*Fasteners are loose and/or pulled out of the building.*

**QUALITY STANDARD**

Fasteners should remain secure.

**REPAIR RESPONSIBILITY**

Builder to repair fasteners during the warranty period.

8. **OBSERVATION**

*Gutters vibrate in the wind.*

**QUALITY STANDARD**

Gutters should not vibrate in the wind.

**REPAIR RESPONSIBILITY**

Builder will repair during the warranty period.

## **HVAC STANDARD** **(Heating, Ventilation, Air Conditioning)**

### **Background**

HVAC is a term commonly used to refer to the heating, ventilating, and air conditioning systems within a home. Because of the complexity of these systems, homeowners incur significant risk if the home is left unattended.

Of the three systems, heating, ventilating, and air conditioning, the performance of heating and ventilation systems is governed by state Code. The equipment size and capacity of heating and cooling systems is dependent on the heat loss/gain of the home.

There are various types of heating systems, including forced air, radiant, hydronic, electric, and combinations thereof. Cooling systems are forced air.

For optimal performance, HVAC systems require regular preventive maintenance.

1. **OBSERVATION**

*Heat is insufficient.*

**QUALITY STANDARD**

Heating system shall be capable of producing a minimum inside temperature of 70 degrees Fahrenheit when measured in the center of a room at a height of five feet above the floor, under local outdoor winter design conditions of -15 degrees specified per state Code.

\*When dealing with the heating or cooling of certain rooms (such as bonus rooms or sunrooms) special consideration may have to be given in the design of the HVAC system in order meet the standards below.

**REPAIR RESPONSIBILITY**

If there is insufficient heat in a room, builder shall identify the cause of the problem and repair as necessary to provide the required temperatures as noted in the Quality Standard.

2. **OBSERVATION**

*Heat is uneven.*

**QUALITY STANDARD**

Heating system shall be capable of producing a minimum inside temperature of 70 degrees Fahrenheit when measured in the center of a room at a height of five feet above the floor, under local outdoor winter design conditions of -15 degrees specified per state Code.

**REPAIR RESPONSIBILITY**

Upon request by the homeowner, once during the warranty period, the builder shall arrange for the heating contractor to assist the homeowner in balancing the heating system and to acquaint the homeowner with how to maintain the proper heating/cooling balance.

3. **OBSERVATION**

*Furnace, ductwork, registers and thermostat were not placed as per plan.*

**QUALITY STANDARD**

Due to heating design, venting and layout, the location of the furnace, venting, ductwork, registers and thermostat is to be determined by the heating contractor.

**REPAIR RESPONSIBILITY**

None.

4. **OBSERVATION**

*Temperature at thermostat is different than temperature set on the thermostat.*

**QUALITY STANDARD**

If thermostat is properly calibrated according to equipment specs, temperatures at thermostat should not differ more than  $\pm 2$  degrees from the standard heating set point of 70° Fahrenheit.

**REPAIR RESPONSIBILITY**

Builder to repair if there is a difference at the thermostat of more than  $\pm 2$  degrees from the standard heating set point of 70° Fahrenheit.

5. **OBSERVATION**

*Furnace is noisy.*

**QUALITY STANDARD**

Manufacturer's specifications determine the acceptable sound level of a furnace.

**REPAIR RESPONSIBILITY**

Builder shall determine if the noise level of the furnace exceeds manufacturer's specifications and repair to meet those specifications.

6. **OBSERVATION**

*Cooling is insufficient or uneven.*

**QUALITY STANDARD**

Air conditioning is an optional feature included in some residences. Most cooling systems are designed to state and local Codes and use the ASHRAE standards as a guide. The design of the cooling system generally accommodates the cooling load for the heat gain throughout the entire home and may include the assumption that all glass areas are shaded. Since large areas of glass place excessive loads on a system designed to cool the home evenly, the homeowner should be aware that rooms with substantial glass areas will be warmer than other spaces.

**REPAIR RESPONSIBILITY**

Builder to repair if there is a difference of more than  $\pm 2$  degrees at the thermostat location with a standard cooling set point of 78° Fahrenheit when the outdoor temperature is below the applicable Outdoor Design Conditions temperature as specified by Code. (Note: the applicable temperature varies by geographic zone within the state.)

7. **OBSERVATION**

*Ductwork is ticking or crackling.*

**QUALITY STANDARD**

Ductwork expands when it is heated and contracts when it cools. When ductwork comes into contact with other building components during the expansion and contraction process, it may result in "ticking" or "crackling." A booming sound within the ductwork, normally called "oilcanning," may also be caused by deflection in the ductwork.

**REPAIR RESPONSIBILITY**

Ticking, crackling, and booming noises are normal occurrences in a forced air heating system. If the heating system is accessible, the builder may be able to reduce or eliminate the noises.

8. **OBSERVATION**

*Cold air enters the home through exhaust fans.*

**QUALITY STANDARD**

All exhaust fans, by Code, must be vented to the exterior and have dampers. During cold or windy conditions, some air may by-pass the damper and enter the home.

**REPAIR RESPONSIBILITY**

Builder shall ensure that dampers are in place and operating properly.

9. **OBSERVATION**

*Condensate drain lines clog up.*

**QUALITY STANDARD**

Condensate drain lines may eventually clog under normal use, possibly resulting in water spillage causing damage to the electronic components of the furnace and/or furnace shutdown. Builder shall provide unobstructed condensate drain lines at time of first occupancy.

**REPAIR RESPONSIBILITY**

None. Homeowner is responsible for proper maintenance of HVAC systems, including condensate drain lines.

10. **OBSERVATION**

*Air conditioning condenser is not placed as per plan.*

**QUALITY STANDARD**

For optimal performance, air conditioning condensers should be placed as closely as possible to the furnace. Builder and the heating contractor are responsible for placing the condenser in accordance with local Codes and restrictive covenants.

**REPAIR RESPONSIBILITY**

If the builder has performed to the Quality Standard, the builder carries no repair responsibilities.

11. **OBSERVATION**

*Air conditioner pad settles.*

**QUALITY STANDARD**

Air conditioner pad should be level.

**REPAIR RESPONSIBILITY**

During the warranty period, builder is responsible for maintaining level air conditioner pad provided the builder is responsible by the contract for final grading. After the warranty period, this is a homeowner maintenance item.

12. **OBSERVATION**

*Owner detects gaseous or other fuel odors.*

**QUALITY STANDARD**

There should be no leaks in fuel supply piping.

### **REPAIR RESPONSIBILITY**

Homeowner should immediately call utility or fuel supplier to determine cause of leak. Builder is responsible for repair of leaks during the warranty period.

## **INDOOR AIR QUALITY STANDARD**

### **Background**

Odors, chemical pollutants (from furniture, rugs, insulation, cleaning fluids), radon gas, biological pollutants (such as mold and mildew), and particulates (such as dust, pollen, and cigarette smoke) are typically found in the air of every home. A house is said to have poor air quality when the air inside contains a large enough concentration of any substance to adversely affect the comfort, health or safety of the occupants. If the rate of pollutant generation indoors is high, or the ventilation rate is low, indoor pollutant concentrations may be high enough that the comfort or health of the occupants is jeopardized.

Sensitivities to indoor air pollutants vary greatly from occupant to occupant. It is necessary that occupants of each household assess their own exposures and risks and take full responsibility to maintain acceptable indoor air quality.

Ventilation is the process of supplying or removing air by either natural or mechanical means to or from a specific space for the purpose of ensuring acceptable indoor air quality. The purpose of ventilation is to provide outside air to the house in order to control indoor levels of moisture, odors and indoor air contaminants. Although homeowners can provide proper ventilation by opening doors and windows, various factors such as the homeowner's degree of sensitivity and desired level of air exchange and energy conservation may necessitate installation of optional mechanical ventilation systems.

Refer to the Moisture Standard and the Insulation and Weatherization Standard for more information.

#### 1. **OBSERVATION**

*Odors recur.*

#### **QUALITY STANDARD**

The house must be built to meet minimum air changes as per Code.

#### **REPAIR RESPONSIBILITY**

If the house is built to Code for minimum air changes, the builder has no repair responsibility.

#### 2. **OBSERVATION**

*Radon levels are elevated.*

#### **QUALITY STANDARD**

There is currently no method of predicting or testing home sites for radon levels before construction. Therefore, prior to construction, it is impossible to predict levels of radon exposure. The Environmental Protection Agency (EPA) maintains a recommended action level for radon exposure. The homeowner may implement an on-going follow up testing program and, if necessary, install a comprehensive radon mitigation system.

#### **REPAIR RESPONSIBILITY**

None.

#### 3. **OBSERVATION**

*Allergic reactions are caused by biological pollutants.*

### **QUALITY STANDARD**

The house must be built to meet minimum air changes as per Code.

### **REPAIR RESPONSIBILITY**

Homeowner should control humidity levels to discourage biological growth. Ventilation, mechanical dehumidification or elevated temperatures can be used as appropriate.

#### **4. OBSERVATION**

*Excessive dust, pollens or other particulates accumulate in the house.*

### **QUALITY STANDARD**

The house must be built to meet minimum air changes as per Code.

### **REPAIR RESPONSIBILITY**

Homeowner must ensure that filters in heating and cooling equipment are in place and maintained. As necessary, higher efficiency filtration systems should be installed at homeowner's expense to control to acceptable levels.

## **INSULATION AND WEATHERIZATION STANDARD**

### **Background**

Insulating is the process by which a material is installed at the envelope of the structure to create a resistance to heat flow. This produces a more controlled interior comfort climate and conserves energy.

The measurement of insulating effectiveness is called "resistance to heat flow" and is expressed as "R-value." Each manufacturer is required to label its materials with its resistance to heat flow (R-value). R-value is a number rating system. As R-value increases, the overall effectiveness of the insulating material increases, but at a decreasing rate. For example R40 is not twice as effective as R20.

The commonly used insulating materials are mineral wool, fiberglass, cellulose, and rigid board insulation. Types of insulating materials include blown, loose material, or batt forms. Types of rigid materials include polyurethane, polyisocyanurate, or polystyrene, all of which are usually supplied in panel form or are sprayed in their application.

To maintain a healthy atmosphere in a house, a reasonable level of air change is necessary. A natural air change is driven by wind and internal use of air, such as a furnace without an outside combustion air supply. In general, air escapes from upper levels and ceilings and is replaced at the lower levels of the home. **Under these conditions some air change (air infiltration and exfiltration) is both unavoidable and necessary.**

Air change can be minimized by the proper installation of weather-stripping, caulking, vapor retarders, house wraps and sheathing tapes. Some air change will occur under certain temperature and wind conditions. Wall and ceiling penetrations, such as electrical boxes, fireplaces, attic access and exhaust fans may contribute to air change even if caulked and sealed.

Moisture in insulation causes it to lose its insulating value. Therefore, vapor retarders are placed on the warm side of frame walls and ceilings above grade to protect the components of walls and ceilings from moisture damage. Below grade vapor retarders in walls are not required by code. Ceilings and attics must be ventilated according to Code to prevent moisture damage.

There is a correlation between insulation, weatherization, moisture and air quality. Refer to the Moisture Standard and Air Quality Standard chapters for additional information.

#### **1. OBSERVATION**

*Frost or condensation appears on the inside of exterior walls.*

**QUALITY STANDARD**

Some condensation and frost may appear during extreme weather conditions and are caused by either cold surfaces, high indoor humidity and/or both.

**REPAIR RESPONSIBILITY**

The builder shall investigate and determine the cause. If the home has been built and insulated to Code, there is no builder responsibility. If not built to Code, builder shall repair to Code. See the chapter titled Moisture Standard for additional information.

**2. OBSERVATION**

*Air infiltrates at baseboards.*

**QUALITY STANDARD**

Air infiltration in these areas is possible even if sealed according to code.

**REPAIR RESPONSIBILITY**

Builder will attempt to seal affected areas with caulk once during the warranty period.

**3. OBSERVATION**

*Air infiltration at electrical openings.*

**QUALITY STANDARD**

Air infiltrates in these areas is possible even if sealed according to Code.

**REPAIR RESPONSIBILITY**

Homeowners concerned about air infiltration in these areas may purchase an air barrier gasket for each affected electrical opening on exterior walls.

**4. OBSERVATION**

*Air infiltration from recessed lights, ceiling fans, vent fans.*

**QUALITY STANDARD**

Air infiltrates in these areas is possible even if sealed according to Code.

**REPAIR RESPONSIBILITY**

The builder has no repair responsibility as long as there is insulation around the unit.

**5. OBSERVATION**

*Air infiltrates around doors and windows.*

**QUALITY STANDARD**

Air infiltration in these areas is possible.

**REPAIR RESPONSIBILITY**

To minimize air infiltration, once during the warranty period the builder will, after the initial settling period, return to adjust the hardware on affected doors and windows.

**6. OBSERVATION**

*Insulation in attic appears to be insufficient.*

**QUALITY STANDARD**

Insulation shall be installed according to the contracted R-value, or if no contract exists, shall be installed to Code.



### **REPAIR RESPONSIBILITY**

Builder to correct to the contracted R-value.

## **LANDSCAPING STANDARD**

### **Background**

Landscaping deals with final restoration of the owner's property and the engineering of drainage. Establishment of the lawn, through seeding or sodding, is the first priority. Additionally, optional items such as plantings, patios, decorative walks, fencing, etc., are handled either by the owner or by the builder, depending on the contract terms.

A landscaper's involvement may begin very early in the construction process.

Landscaping is the final solution to the erosion control needs of the site. For this reason, the lawnwork should be scheduled as soon as possible to coincide with completion of the home. Responsibility for erosion control passes to the homeowner at time of closing.

Unless noted otherwise in the building contract, existing trees are not covered by the builder's warranty. Landscaping may be contractually provided by the builder on a bid or as an allowance item. The method of purchase will determine areas of responsibility.

#### **1. OBSERVATION**

*Seeding washes out.*

### **QUALITY STANDARD**

The contractor will place seed only once. Seeded areas are susceptible to washouts.

### **REPAIR RESPONSIBILITY**

Owner is responsible for repair and re-seeding of washed-out areas.

#### **2. OBSERVATION**

*Mulch blows off seeded lawn.*

### **QUALITY STANDARD**

Mulch is susceptible to wind. The contractor may place mulch on seeded areas one time.

### **REPAIR RESPONSIBILITY**

It is the owner's responsibility to keep mulch moist to keep it in place. If wind blows mulch off, the owner is responsible for re-spreading as necessary.

#### **3. OBSERVATION**

*Rocks appear in seeded lawn.*

### **QUALITY STANDARD**

After the lawn is finish graded, there should be no rocks larger than 3/4" in diameter visible when seed and mulch are placed.

### **REPAIR RESPONSIBILITY**

The homeowner is responsible for removing any rocks, which appear after seed and mulch are placed. Homeowner should be aware that rocks may work their way to the surface -- this is a natural process.

4. **OBSERVATION**

*Birds feed on newly seeded lawn.*

**QUALITY STANDARD**

Birds will eat microorganisms brought to the surface during the landscaping process. Birds rarely eat lawn seed.

**REPAIR RESPONSIBILITY**

None.

5. **OBSERVATION**

*Weeds appear in a newly seeded lawn.*

**QUALITY STANDARD**

Weed seeds are always present in the air and in the soil.

**REPAIR RESPONSIBILITY**

None. Homeowner is advised not to pull the weeds since pulling will disturb roots of the grass. Homeowners are advised not to use a chemical herbicide for one year; fertilizer should be applied as advised by the landscaper.

6. **OBSERVATION**

*Bare spots appear in a lawn that has been seeded.*

**QUALITY STANDARD**

A seeded lawn should be free of large bare spots. With proper maintenance, including mulching and watering, bare spots should not occur.

**REPAIR RESPONSIBILITY**

The homeowner shall water and fertilize the lawn according to landscaper's specifications.

7. **OBSERVATION**

*Sod turns brown.*

**QUALITY STANDARD**

Sod must be kept wet for a minimum of ten days after installation.

**REPAIR RESPONSIBILITY**

Homeowner is responsible for maintaining moisture in sod based on landscaper's recommendations.

8. **OBSERVATION**

*Sod slides.*

**QUALITY STANDARD**

Sod laid on any slope with a rise greater than one foot in every four feet of length (25% grade) should be pinned.

**REPAIR RESPONSIBILITY**

If sod was not pinned (staked) for a slope greater than 4'/1', landscaper shall repair.

9. **OBSERVATION**

*Soil erodes from a retaining wall.*

**QUALITY STANDARD**

Some erosion will occur until vegetation is established in gaps of a retaining wall.

### **REPAIR RESPONSIBILITY**

Homeowner is advised to establish vegetation as quickly as possible after installation of a retaining wall.

10. **OBSERVATION**

*Retaining wall has failed.*

### **QUALITY STANDARD**

A retaining wall should not fail during the warranty period, unless changes, which could affect the integrity of the wall, were made to the adjacent area.

### **REPAIR RESPONSIBILITY**

Landscape shall repair to Quality Standard, unless failure is due to changes to the area affecting the wall.

11. **OBSERVATION**

*Newly installed plant material dies.*

### **QUALITY STANDARD**

Plantings should perform according to the landscaper's warranty, provided that plant material has received proper care and watering. No warranty is provided for damage caused by winter injury, animals, machinery, carelessness, etc.

### **REPAIR RESPONSIBILITY**

Landscape shall replace dead plantings within the warranty period as per Quality Standard specifications above.

12. **OBSERVATION**

*Soil settles.*

### **QUALITY STANDARD**

Soil will settle. Different soils settle at different rates.

### **REPAIR RESPONSIBILITY**

Homeowner is responsible for repair due to settling.

## **LIGHTING FIXTURE STANDARD**

### **Background**

Lighting fixtures are products that have a "finish" which should be protected, especially during painting and staining. Initial care for fixtures requires only periodic cleaning with a soft cloth or slightly dampened cloth.

Products such as lacquer thinner, solvents, cleaners and cleaning solutions, etc., should not be used to clean fixtures.

Over time, contact with the natural chemicals in the human body will cause a breakdown of the finish of lighting fixtures. Protective coatings will gradually tarnish, taking on an "antique" appearance. In addition, atmospheric conditions, direct sunlight, caustic agents such as cleaners, or scratches from contact with other objects may crack or peel the protective coating, exposing the natural material and causing spotting and discoloration. The integrity of the surface under such conditions of exposure is not warranted.

Variations in finish color either from fixture to fixture or within the same fixture are possible.

1. **OBSERVATION**

*Finish on lighting fixture wears off or shows color variation.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

If the defect was noted prior to occupancy, the builder should replace or repair. If due to natural causes or negligence on the part of the homeowner, the builder would not be responsible.

2. **OBSERVATION**

*Finish of outdoor fixtures installed on masonry is deteriorated.*

**QUALITY STANDARD**

Due to the chemical reaction of dissimilar materials, metal fixtures installed directly on masonry may deteriorate. All outdoor lighting fixtures should be installed per the manufacturer's instructions.

**REPAIR RESPONSIBILITY**

If the deteriorating outdoor lighting fixtures have not been installed per manufacturer's instructions, the builder shall replace the fixture during the warranty period.

3. **OBSERVATION**

*Fixtures do not work.*

**QUALITY STANDARD**

Fixtures should perform per manufacturer's specifications during the warranty period.

**REPAIR RESPONSIBILITY**

Builder should determine the cause of the problem. If it is found that the fixture is inoperative, it would fall under a manufacturer's warranty. If the fixture was builder-supplied, the builder will repair or replace at his/her option. If the fixture was owner supplied, the owner will be responsible for the cost of the service call.

4. **OBSERVATION**

*Glass in light fixture is broken.*

**QUALITY STANDARD**

Fixture glass should not be broken prior to occupancy.

**REPAIR RESPONSIBILITY**

Builder is to repair or replace all broken glass prior to occupancy. After occupancy it is homeowner's responsibility.

5. **OBSERVATION**

*Fluorescent lights hum.*

**QUALITY STANDARD**

Some fluorescent ballasts will hum. Fluorescent ballasts are sound rated ("A" Low, "C" High). Most four-foot ballasts are "A" rated, others are rated "B" or above.

## **REPAIR RESPONSIBILITY**

None.

# **MASONRY STANDARD**

## **Background**

In this chapter "masonry" will refer primarily to veneer, non-load-bearing applications. Masonry work is performed with quarried natural materials or with manufactured products that have been selected for their wearing qualities. As such, they are subject to the same weathering phenomena as in their natural state, such as erosion, freezing and thawing, chipping, and natural color variations. Masonry work can be performed with a variety of materials, methods of application and techniques of installation. This permits the owner a wide range of personal choices; however, once a choice has been made and work performed, it creates a situation that can never again be exactly duplicated. Masonry is dependent upon the variation of the product and the techniques of the individual worker.

The homeowner should inspect masonry annually to maintain the integrity of the product.

### **1. OBSERVATION**

*Cracks are visible in mortar joints of masonry veneer walls.*

#### **QUALITY STANDARD**

Small hairline cracks due to shrinkage are common in mortar joints in masonry veneer construction and are acceptable if they do not exceed 1/8" in width.

#### **REPAIR RESPONSIBILITY**

If necessary, once during the warranty period, the builder will repair cracks in excess of Quality Standards by pointing or patching. Owner should note that there will be a color variation between old and new mortar.

### **2. OBSERVATION**

*Masonry appearance is different than what was selected.*

#### **QUALITY STANDARD**

Differences in masonry color and texture are normal due to the fact that masonry is a natural material. Even within the same lot, masonry products may vary in color. Since mortar is mixed with natural materials in small quantities, some color variations can be expected.

#### **REPAIR RESPONSIBILITIES**

None.

### **3. OBSERVATION**

*A chalky substance appears on the surface of masonry products.*

#### **QUALITY STANDARD**

Salts leaching out of the masonry products in the presence of moisture cause a chalk-like appearance on the face of masonry products, called efflorescence. The presence of efflorescence is a natural phenomenon that can be an ongoing occurrence or a temporary condition.

#### **REPAIR RESPONSIBILITY**

None. If the presence of efflorescence is an aesthetic concern to the homeowner, products are available to control this condition.

# MOISTURE STANDARD

## Background

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

The installation of dehumidification and humidification equipment and air-to-air exchangers is an owner/builder option. Excess moisture is usually a symptom of today's airtight homes. Just as too much moisture causes problems, insufficient humidity, or excessive dryness can cause other serious problems.

The homeowner must maintain proper levels of humidity. This can be accomplished by the use of operable windows and exhaust fans. Additionally, advanced ventilation systems, or humidification systems can be added for automatic control. In homes with humidification equipment, the formation of moisture on the windows is an indication that the humidifying equipment is set too high and producing too much moisture.

Household size, lifestyle and outdoor temperatures will affect the humidity level in the home. An enclosed pool in a home, for example, can be the source of excessive damaging moisture and requires special care in design, use and maintenance. To a lesser degree, saunas, hot tubs, and whirlpools also require similar care. **The owners are responsible for maintaining proper temperature and humidity in the home as well as for damage caused by failure to do so.**

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

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

### 1. OBSERVATION

*Moisture condensates on windows and skylights.*

### QUALITY STANDARD

Moisture condenses on the window since it is usually the coldest object in any given room. Moisture condensation on windows occurs when the moisture in the room exceeds the design specifications of the window or skylight; therefore, the homeowner can expect condensation to occur when the surface temperature of the glass reaches the dewpoint of the indoor air. Moisture on windows can be reduced in one of two ways: 1) reducing the humidity level in the room; or, 2) raising the temperature of the indoor glass surface.

### REPAIR RESPONSIBILITY

None

### 2. OBSERVATION

*Moisture or frost is present in the attic.*

**QUALITY STANDARD**

Under severe weather conditions, it is possible for moisture/frost to appear in the attic. Builder must provide adequate ventilation to all areas of attic according to Code.

**REPAIR RESPONSIBILITY**

If home is not built according to Code, builder should repair to Code.

**3. OBSERVATION**

*Frost or condensation appears on interior walls, cantilevered bays or closets.*

**QUALITY STANDARD**

Frost or condensation may appear during extreme weather conditions.

**REPAIR RESPONSIBILITY**

If home has been built to Code, there is no builder responsibility. If home is not built to Code, builder should repair to Code. Homeowner may be able to reduce moisture on walls in one of two ways: 1) reducing the humidity level in the room; or, 2) raising the temperature of the indoor wall surface.

**4. OBSERVATION**

*Dampness and moisture appear on below-grade walls, floors, pipes, etc.*

**QUALITY STANDARD**

Surfaces below grade will tend to condensate due to the cool temperature of such surfaces versus the warm, humid air available in summer.

**REPAIR RESPONSIBILITY**

None. However, dehumidification may be necessary for any sub-grade areas. Homeowner is responsible for maintaining proper dehumidification as needed in sub-grade areas.

**5. OBSERVATION**

*Water penetrates basement walls or floor.*

**QUALITY STANDARD**

Water should not penetrate basement walls or floor. Leaks may be caused by a number of factors, including but not limited to: improper ground pitch away from the foundation, improper landscaping, improper diversion of water from roof, high water table, or unprotected window wells.

**REPAIR RESPONSIBILITY**

There are a number of options available to prevent water from penetrating. The builder's contract may have included one or more of these options. If the builder's contract *did* include such options, the builder should correct to meet contract specifications. If the builder's contract did *not* include such systems, repair and correction is the homeowner's responsibility.

The builder will determine the cause of the problem. Should the problem be improper drainage, the party who contracted for the elements of construction that affect proper drainage is responsible for correcting and maintaining proper drainage. Ground settling around the foundation and other excavated areas is normal. Owners have the responsibility of maintaining proper pitch away from the foundation.

# OVERHEAD GARAGE DOOR STANDARD

## Background

Residential garage doors are available in three common materials: steel, wood panel, and hardboard. Hardboard and steel doors have the option of being insulated.

Electric operators are available as an option for any overhead garage door.

Garage doors operate with the assistance of a high-tension spring mechanism. The homeowner should not attempt to adjust this mechanism.

### 1. OBSERVATION

*Hardboard garage door bows and/or warps.*

#### QUALITY STANDARD

Changes in temperature and humidity will cause a hardboard garage door to bow and/or warp. A dark color paint applied to the door will increase the likelihood of this, especially if the door receives direct sunlight. Manufacturer's warranties require that a final finish (paint or stain) must be applied to the inside and outside surfaces and all edges of hardboard doors during the construction period. The party contractually responsible for finishing should apply this finish.

#### REPAIR RESPONSIBILITY

None. Due to the nature of hardboard, bowing and/or warping may occur.

### 2. OBSERVATION

*Overhead garage door delaminates.*

#### QUALITY STANDARD

Overhead doors should not delaminate during the warranty period, if finished per manufacturer's requirement.

#### REPAIR RESPONSIBILITY

Builder shall repair any delamination that occurs during the warranty period.

### 3. OBSERVATION

*Weatherstripping on bottom of overhead garage door does not fit flush to the floor.*

#### QUALITY STANDARD

There are two types of bottom weatherstrip: U-shaped and single edge flap. Weatherstripping will eliminate up to 1/2" difference on an unlevel floor.

#### REPAIR RESPONSIBILITY

Builder shall correct as necessary so the weatherstripping sits flush to the floor.

### 4. OBSERVATION

*Garage doors allow snow or water to enter.*

#### QUALITY STANDARD

Garage doors should be installed as recommended by the manufacturer. Even with proper installation, some leakage of the elements can be expected under severe weather conditions.

#### REPAIR RESPONSIBILITY

Builder will adjust or correct doors to meet manufacturer's recommendations.



5. **OBSERVATION**

*Overhead garage door does not fit tightly at the sides and top.*

**QUALITY STANDARD**

Doors should contact weatherstripping at side and top.

**REPAIR RESPONSIBILITY**

During the warranty period, builder shall adjust door so that it comes into contact with weatherstripping.

6. **OBSERVATION**

*Wood panel garage doors sag when closed.*

**QUALITY STANDARD**

Due to the weight and construction of a wood panel door, some sagging may occur over time. Overhead wood panel garage doors should not sag during the warranty period.

**REPAIR RESPONSIBILITY**

Builder shall correct problem during the warranty period.

7. **OBSERVATION**

*Wood garage door panel splits or cracks.*

**QUALITY STANDARD**

Doors must be finished as per manufacturer's instructions. Split panels should not allow light to be visible through the door.

**REPAIR RESPONSIBILITY**

During the warranty period, builder will replace split panels if light is visible.

8. **OBSERVATION**

*Garage door fails to operate under normal use.*

**QUALITY STANDARD**

Garage door should operate properly.

**REPAIR RESPONSIBILITY**

Builder will correct or adjust garage door during the warranty period. Homeowner should not attempt to adjust spring tension.

9. **OBSERVATION**

*Garage door frosts up.*

**QUALITY STANDARD**

Frost may occur on overhead doors due to moisture present in the garage. Low outdoor temperatures may exacerbate the occurrence of frost.

**REPAIR RESPONSIBILITY**

None.

10. **OBSERVATION**

*Steel doors rust.*

**QUALITY STANDARD**

Steel doors should not rust within the manufacturer's warranty period.

**REPAIR RESPONSIBILITY**

Builder will replace or repair within the one-year warranty period. Owner to contact manufacturer directly for warranty after one year.

**11. OBSERVATION**

*Electric garage door opener fails to operate.*

**QUALITY STANDARD**

Electric garage door opener should operate.

Remote control should operate the door from a distance of 50' or less.

Electric garage door openers are equipped with photo eye sensors at the inside bottom edges of the door frame, which reverse the downward action of the electric opener if any person or object interrupts the sensor's beam.

**REPAIR RESPONSIBILITY**

Homeowner is responsible for ensuring that power is available to the opener and that the batteries in the transmitter are operable. Homeowner is responsible for keeping photo eye sensors in proper alignment. During the warranty period the builder will correct other malfunctions.

## **PAINTING, STAINING, AND WALLPAPERING STANDARD**

**Background**

The primary purpose of painting, varnishing and staining is the preservation and protection of exposed surfaces. These processes protect exposed surfaces, both interior and exterior, from environmental conditions and moisture penetration.

Because the primary cost in this type of work is labor, owners often undertake all responsibility for painting/staining their homes. In the event that the painting and staining is done on an allowance basis, as opposed to a "bid" or is simply included in the base price of the home, the labor performed is considered to be under the direction and control of the owner. In such cases, the owners undertake all responsibility for the painting/staining contract unless otherwise specified. In any event, the party who undertakes the painting/staining contract, be it owner or builder, assumes responsibility for:

- 1) Promptly and properly providing protection to exposed surfaces to prevent damage due to deterioration of unfinished surfaces, such as warping, checking, cracking, dry rot and blackening of lumber millwork, which takes place due to improper, untimely or no painting/staining. Millwork manufacturers do not normally extend warranties on their product against warping or cracking unless the surface has been properly finished. Special care must be exercised to ensure that all sides and edges of doors are sealed to prevent warping.
- 2) Properly preparing the surface to accept paint, stain or wallpaper, which includes filling nail holes and filling or sanding of imperfections.
- 3) Properly applying material in accordance with manufacturer's recommendations.
- 4) Replacing hardware, fixtures and doors if they are removed for painting/staining or other finishing.
- 5) If builder does the interior staining and owner does interior painting, the owner is responsible for doing any paint touch-up over stain and varnish.

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

Grain variations in wood will accept stain differently; therefore, it is not uncommon for two pieces of the same type of wood, stained with the same product, to vary in color. If any paint is left after completion of the painting/staining, the painter should leave remaining paints and stains for future touch up.

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

Varnished, painted, or stained millwork and floors must be cared for like fine furniture. Exterior varnished surfaces require more maintenance than painted surfaces.

In evaluating the need for paint, stain, and wallpaper repairs, the general rule to be applied is that if the defect is readily noticed by visual inspection under normal lighting conditions, it should be repaired. The term "normal lighting conditions" is defined as diffused, indirect, general lighting. Homeowners should be aware that a direct light source parallel or nearly parallel to a surface will reveal normal, acceptable paint/stain/wallpaper seams.

In both interior and exterior painting and staining, both physical problems and aesthetic concerns will be discussed below.

1. **OBSERVATION**

*Exterior paint peels or fades, including gutter downspouts or other sheet metal areas.*

**QUALITY STANDARD**

Some common reasons for peeling are high moisture content, excess wood sap, and improper priming. Peeling should not occur during the warranty period. Under normal conditions, some fading is normal on surfaces exposed to direct sunlight.

**REPAIR RESPONSIBILITY**

High moisture can be caused by excess indoor humidity, for which the homeowner is responsible.

The builder should correct peeling problems caused by exterior or mechanical sources if within the warranty period, unless the homeowner has contributed to the problem (for example, water sprinkling, foundation plantings placed too close to the house, etc.)

If excess wood sap causes paint to peel, the builder shall repair the affected area once during the warranty period.

The builder shall identify the cause of peeling. If the cause is determined to be due to work performed by the builder or his/her subcontractors, the builder should properly prepare and repaint affected areas, matching color as closely as possible. The homeowner must understand that touch-up may not match exactly. Should the paint deterioration affect the majority of a wall or area, the area should be repainted.

2. **OBSERVATION**

*Exterior stain fades or discolors.*

**QUALITY STANDARD**

Because stains have less pigment than paint, they tend to weather more quickly.

**REPAIR RESPONSIBILITY**

None. Reapplication of stain by owner should be expected as part of normal home maintenance.

3. **OBSERVATION**

*Repainting of areas affected by drywall repairs.*

**QUALITY STANDARD**

Since drywall and plaster are finish materials, repairs will be slightly visible due to a color or texture mismatch after they have been made. Repairs do not require repainting when they are applied on unpainted surfaces such as unpainted ceiling or when the builder did not contract for the painting. The builder will attempt to match the repair texture as closely as possible, but the exact color match of the unpainted surface is impossible to achieve. Where the repair has been made on a painted surface, the builder will not be responsible for paint touch-ups.

**REPAIR RESPONSIBILITY**

Builder to repair areas as indicated above.

**4. OBSERVATION**

*Ceiling not painted originally or after repair.*

**QUALITY STANDARD**

Industry standards do not require painting of ceilings, as long as a drywall spray is used, unless specified in contract or specifications. Ceiling drywall repairs do not require painting if the painting of ceilings was not specified in the contract.

**REPAIR RESPONSIBILITY**

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

**5. OBSERVATION**

*Deterioration of varnish, urethane, acrylic or lacquer finishes, etc.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

Builder will refinish affected areas of interior woodwork, matching the color as closely as possible if staining was included in the contract on a bid basis.

**6. OBSERVATION**

*Coats of paint/stain applied are insufficient.*

**QUALITY STANDARD**

Coats include spray coat, hand texture, stain, sealer, primer, and varnish. The builder is responsible to apply the number of coats specified in the contract. All coats need not be applied on the jobsite; prefinishing offsite is acceptable.

**REPAIR RESPONSIBILITY**

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

**7. OBSERVATION**

*Mildew or fungus appear on painted surfaces.*

**QUALITY STANDARD**

Mildew or fungus will form on a painted surface if the structure is subject to excessive moisture. Mildew or fungus is not related to the quality of the paint or varnish.

**REPAIR RESPONSIBILITY**

The builder should identify the cause of the problem. Mildew or fungus is a condition the builder may not be able to control and may be a homeowner maintenance item. The homeowner is responsible for the effects of high humidity.

8. **OBSERVATION**

*Similar woods show color variations.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

None.

9. **OBSERVATION**

*Color variations between different types of wood are evident.*

**QUALITY STANDARD**

Since wood is a natural product and its grain structure is unique to each type of wood, dissimilar wood cannot be matched exactly.

**REPAIR RESPONSIBILITY**

None.

10. **OBSERVATION**

*Unfinished edges appear on floating panels, such as in raised panel doors, raised panel cabinet doors, and raised panel wainscoting.*

**QUALITY STANDARD**

Due to the construction of products containing floating panels, panels may shrink or move, causing unfinished surfaces to appear.

**REPAIR RESPONSIBILITY**

None.

11. **OBSERVATION**

*Wallcovering pulls loose.*

**QUALITY STANDARD**

Wallcovering should not pull loose.

**REPAIR RESPONSIBILITY**

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

12. **OBSERVATION**

*Edges are mismatched in pattern of wallcovering.*

**QUALITY STANDARD**

Wallcovering should match as closely as possible. At any point along a vertical seam, wallcovering patterns should match within a 1/8" tolerance. Horizontal seam tolerances are based on manufacturer's standards, which vary from manufacturer to manufacturer.

**REPAIR RESPONSIBILITY**

The builder shall repair per Quality Standard above.

13. **OBSERVATION**

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

**QUALITY STANDARD**

Finish quality may be lower in closets. Closets do not need to be painted, may be drywall sprayed.

**REPAIR RESPONSIBILITY**

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

14. **OBSERVATION**

*Doors or drawers warp.*

**QUALITY STANDARD**

- a. The homeowner should note that during the initial building stabilization period, it is not unusual for doors to warp or twist and periodically stick or not close as the home goes through a settling and drying period, especially over the first heating season. The builder is obligated only to make replacements or adjustments after this initial stabilization period, since often the door straightens during this process. Doors **MUST** be sealed on all six sides by the person contractually responsible for painting/staining in order to be warranted.
- b. All interior doors, closet doors or drawers whose warpage exceeds 3/8" and where the warp cannot be corrected by adjustment of either jambs, stops, and/or hinges and cabinet catches to properly latch after the initial stabilization period of the building at the end of the first year, shall be replaced by the builder. Doors **MUST** be sealed on all six sides by the person contractually responsible for painting/staining in order to be warranted.

**REPAIR RESPONSIBILITY**

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

15. **OBSERVATION**

*Wallcovering, painting or staining done by homeowner, or included on an allowance basis, is affected by other repairs.*

**QUALITY STANDARD**

This is a consequential damage and may be covered by the homeowner's insurance. As such, the homeowner is responsible for any subsequent paint, stain and wallcovering repairs or other consequential damages.

**REPAIR RESPONSIBILITY**

None.

16. **OBSERVATION**

*Shrinkage cracks in painted woodwork.*

**QUALITY STANDARD**

Hairline cracks at flat joints are acceptable.

**REPAIR RESPONSIBILITY**

None on flat joints. Builder to caulk hairline cracks in miters during first year.

17. **OBSERVATION**  
*Scratches on glass or mirrors not caused by vandalism.*

**QUALITY STANDARD**

Glass or mirror surfaces shall not have scratches visible from six feet under normal lighting conditions. Scratches caused by homeowner during cleaning or using razor blades are not the builder's responsibility.

**REPAIR RESPONSIBILITY**

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

## **PLUMBING STANDARD**

### **Background**

A plumbing system consists of drain, vent and domestic water supply as well as the fixtures and appurtenances installed in conjunction with plumbing operations. Licensed contractors in accordance with detailed plumbing code requirements in effect at the time of original construction perform plumbing system installation. Plumbing system components supplied by the owner and not by the builder are not warranted by the builder. Unless specified in the building contract, the builder does not warrant the quality of the water used by the plumbing system.

1. **OBSERVATION**  
*Pipes leak.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

During the warranty period, builder shall make necessary repairs to eliminate leakage.

2. **OBSERVATION**  
*Faucet or valve leaks.*

**QUALITY STANDARD**

No valve or faucet should leak.

**REPAIR RESPONSIBILITY**

During the warranty period, builder shall repair or replace the leaking faucet or valve. After the warranty period, such repair becomes the homeowner's responsibility.

3. **OBSERVATION**  
*Water pipes band or hammer.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

If the domestic water piping system is installed per Code, the builder carries no repair responsibility.

4. **OBSERVATION**

*Fixtures do not hold water.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

Builder shall correct so that fixtures hold water to meet Quality Standard.

5. **OBSERVATION**

*Porcelain, fiberglass surfaces or faucets are cracked, scratched or chipped.*

**QUALITY STANDARD**

At the walk-through, there shall be no chips, cracks or scratches on plumbing fixtures, faucets, and accessories.

**REPAIR RESPONSIBILITY**

Builder shall repair any fixture, faucet or accessory that has chips, cracks, or scratches at the walk-through. After the walk-through, such repairs are the homeowner's responsibility.

6. **OBSERVATION**

*Sewers, fixtures, and drains are stopped up.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

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

7. **OBSERVATION**

*Garbage disposal does not operate properly.*

**QUALITY STANDARD**

Disposal unit should function to manufacturer's standards.

**REPAIR RESPONSIBILITY**

If the builder installed the garbage disposal and if the malfunction is not due to homeowner misuse or negligence, the builder will repair or replace the disposal during the warranty period.

8. **OBSERVATION**

*Toilets do not adequately remove waste.*

**QUALITY STANDARD**

It is not unusual for a toilet to be flushed twice or more due to water conservation fixtures.

**REPAIR RESPONSIBILITY**

None, unless it is a manufacturer's defect.

9. **OBSERVATION**

*Plumbing pipes freeze and/or burst.*



**QUALITY STANDARD**

Drain, waste, vent, and water pipes should be adequately protected from freezing, as required by applicable Code for normally anticipated cold weather, and as defined in accordance with ASHRAE design temperatures.

**REPAIR RESPONSIBILITY**

Builder will correct situations not meeting the Code. Homeowner should be aware that outdoor hoses should be removed before the onset of freezing temperatures.

**10. OBSERVATION**

*Condensation (sweating) appears on pipes and fixtures.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

None. The homeowner can reduce condensation by using a dehumidifier and/or by installing pipe/tank insulation.

**11. OBSERVATION**

*Finish on fixtures/faucets tarnishes, shows color variation, or wears off.*

**QUALITY STANDARD**

Caustic agents such as cleaners, and/or scratches from contact with abrasive materials may cause the finish to crack, peel, or corrode, causing discoloration. The integrity of the surface under such conditions of exposure is not warranted. The homeowner should carefully follow cleaning and care procedures for fixtures/faucets spelled out in manufacturer's instructions. The quality of water can also affect the finish of the fixtures. Homeowners are responsible for monitoring the mineral quality of water.

**REPAIR RESPONSIBILITY**

If the defect of the finish was noted prior to occupancy, the builder will replace or repair. If due to natural causes or negligence on the part of the homeowner, the builder would not be responsible.

**12. OBSERVATION**

*Sump pump does not operate.*

**QUALITY STANDARD**

The sump pump should operate according to its designed performance standards during the warranty period, unless unusual conditions such as underground springs or high water tables are encountered. The homeowner is responsible for maintaining a proper grade and using downspout extensions to keep water from pooling near the foundation.

**REPAIR RESPONSIBILITY**

During the warranty period, the builder shall repair or replace malfunctioning sump pump, except under the unusual conditions noted above.

**13. OBSERVATION**

*Vent freezes.*

**QUALITY STANDARD**

Homeowner is responsible to keep vent for plumbing on roof clear.

**REPAIR RESPONSIBILITY**

None.

14. **OBSERVATION**

*Defective appliances or fixtures supplied by homeowner.*

**QUALITY STANDARD**

The builder will not warrant any appliances or fixtures supplied by the homeowner for leakage, etc. There may be some instances where a plumber will not install a homeowner's fixtures if the fittings are not proper.

**REPAIR RESPONSIBILITY**

None.

15. **OBSERVATION**

*Sewer odor in basement.*

**QUALITY STANDARD**

Homeowner to check to see if septic sump is sealed. Water should be put in all drains, including floor drain and rough-ins.

**REPAIR RESPONSIBILITY**

Homeowner to add water to all drains. Builder to check septic sump if smell persists.

16. **OBSERVATION**

*Self-rimming sink does not sit flush to countertop.*

**QUALITY STANDARD**

¼" average caulk gap is acceptable.

**REPAIR RESPONSIBILITY**

Builder to repair to Quality Standards.

17. **OBSERVATION**

*Toilet tank is leaking through seal.*

**QUALITY STANDARD**

Tank should not leak.

**REPAIR RESPONSIBILITY**

Builder to repair, unless owner has used bleach tablets which soften and deteriorate the rubber seal. If bleach tablets have been used, repair is homeowner's responsibility.

## **ROOFING STANDARD**

### **Background**

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

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

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

Shingle underlayment must be applied directly to roof sheathing per manufacturer's specifications. The purpose of this underlayment is to be a secondary barrier to roof covering.

Under normally anticipated conditions, roofs or flashing should not leak. However, occasional leakage may result from severe weather conditions, such as ice buildup, high winds, driving rain, or driving snow. Excessive ice or snow buildup with alternate freezing and thawing can create a condition causing leakage, which is a homeowner maintenance responsibility. Owners can reduce the probability of leakage by preventing leaf buildup in gutters and valleys and by removing excess snow and ice. In severe cases, a gutter heating cable can be used.

Repair of roof damage due to storms is the responsibility of the homeowner. Homeowners should check with their insurance carriers regarding appropriate coverage.

In the case of a repair to a roof during the warranty period, every effort should be made by the builder to match material and color as closely as possible. Because an exact match cannot be guaranteed, the homeowner must expect color variations.

1. **OBSERVATION**  
*Roof leaks.*

**QUALITY STANDARD**

Under normally anticipated conditions, a roof should not leak. The integrity of the roof is dependent upon the performance of many trades. Roofing application, sheet metal work, siding application, masonry, carpentry and plumbing may all have an effect on the ultimate performance of the roof system.

**REPAIR RESPONSIBILITY**

When a leak appears during the warranty period under normally anticipated conditions, the builder should inspect the roof to determine the source of the leak and make necessary repairs.

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

2. **OBSERVATION**  
*Flashing leaks.*

**QUALITY STANDARD**

Under normal conditions, flashing should not leak.

**REPAIR RESPONSIBILITY**

When a leak appears during the warranty period under normally anticipated conditions, builder should inspect the flashing to determine the source of the leak and make necessary repairs.

3. **OBSERVATION**  
*Shingles blow off.*

**QUALITY STANDARD**

Except under storm conditions, which include winds of 55 m.p.h. or greater, shingles should not blow off. It should be noted that seal down shingles require heat from the sun to create an effective seal; some warm weather is required to effect the full seal.

**REPAIR RESPONSIBILITY**

If shingles blow off during the builder's warranty period, except under storm conditions which include winds of 55 m.p.h. or greater, builder shall replace the shingles which have blown off. If due to storm conditions, homeowner should submit to their homeowner's insurance company. Homeowner should be aware that there will be variations in color between existing shingles and replacements.

4. **OBSERVATION**

*Shingle color varies.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

None.

5. **OBSERVATION**

*Roof buckles or dips.*

**QUALITY STANDARD**

See Carpentry (Rough) Standard chapter.

**REPAIR RESPONSIBILITY**

See Carpentry (Rough) Standard chapter.

6. **OBSERVATION**

*Water stands on flat roof.*

**QUALITY STANDARD**

It is normal for water to stand on a flat roof.

**REPAIR RESPONSIBILITY**

The builder carries no repair responsibility unless the standing water causes a leak. If the standing water causes a leak during the builder's warranty period, the builder shall repair as necessary. The builder should repair to manufacturer's specifications.

7. **OBSERVATION**

*Moss and fungus grow on shingles.*

**QUALITY STANDARD**

Under some conditions, moss and/or fungus will grow on roofing materials.

**REPAIR RESPONSIBILITY**

None.

8. **OBSERVATION**

*Skylights leak.*

**QUALITY STANDARD**

Under normal conditions, skylights should not leak. The owner should be aware that condensation and/or droplets from condensation may occur but should not be confused with a leak. Refer to Moisture chapter for more information.

**REPAIR RESPONSIBILITY**

The builder should repair leak during the builder's warranty period.

9. **OBSERVATION**

*Roof vents leak.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

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

10. **OBSERVATION**

*Broken shingles.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

Builder to repair and match shingles as closely as possible.

11. **OBSERVATION**

*Ridges of roof decking showing through roof.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

Builder to meet Quality Standard.

12. **OBSERVATION**

*Asphalt shingle edges or corners are curled or cupped.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

None.

13. **OBSERVATION**

*Asphalt shingles do not overhang edges of roof, or hang too far over edges of roof.*

**QUALITY STANDARD**

Asphalt shingles shall overhang roof edges by not less than 1/4" and not more than 3/4" unless the manufacturer's standards/specifications indicate otherwise.

**REPAIR RESPONSIBILITY**

The builder will reposition or replace shingles as necessary to meet the Quality Standards.

14. **OBSERVATION**

*Roof sheathing is wavy or appears bowed.*

**QUALITY STANDARD**

This problem may be inherent due to the shrinkage of the wood underneath. Roof should not be greater than ½" out of plane in a two-foot length.

**REPAIR RESPONSIBILITY**

Builder to repair to meet Quality Standard.

15. **OBSERVATION**

*Sheathing or roofing nails have loosened from framing and raised asphalt shingles.*

**QUALITY STANDARD**

Nails shall not loosen from roof sheathing to raise asphalt shingles from surface.

**REPAIR RESPONSIBILITY**

Builder shall repair all areas as necessary to meet the Quality Standard.

16. **OBSERVATION**

*Existing roof shingles telegraphing through new asphalt shingles.*

**QUALITY STANDARD**

Some telegraphing is normal when re-roofing over existing roofing.

**REPAIR RESPONSIBILITY**

None.

## **SIDING STANDARD**

### **Background**

There are numerous types of siding. Some of the most common are wood and wood products, aluminum, vinyl, cement board and steel. Each product is different and has its own inherent characteristics.

## **SIDING STANDARD**

### **Aluminum or Steel**

Aluminum or steel siding is manufactured in several different gauges, different finish coatings, sizes and patterns; this type of siding comes with a variety of manufacturer's warranties and performance standards.

Application of aluminum or steel siding should conform to manufacturer's recommendations.

1. **OBSERVATION**

*Aluminum or steel siding buckles or ripples.*

**QUALITY STANDARD**

By the nature of the products, aluminum or steel siding will expand and contract. Siding should perform to the manufacturer's specifications.

**REPAIR RESPONSIBILITY**

The builder will determine the cause of the problem and will make necessary repairs if the problem is determined to be an improper application.

2. **OBSERVATION**

*Dents, chips, or scratches are visible on the aluminum or steel siding.*

**QUALITY STANDARD**

There should be no dents, chips, or scratches on the aluminum or steel siding at the walk-through. Defects are to be noted in writing at the walk-through.

**REPAIR RESPONSIBILITY**

Builder will repair if notified prior to occupancy. Homeowner should be aware that the repaired area may not match in color and/or texture.

3. **OBSERVATION**

*Aluminum or steel siding comes loose.*

**QUALITY STANDARD**

Aluminum or steel siding should not come loose.

**REPAIR RESPONSIBILITY**

Builder should refasten during the warranty period. Storm damage is the homeowner's responsibility. Homeowner may elect to pursue a claim with their casualty insurance carrier.

4. **OBSERVATION**

*Aluminum or steel siding fades or chalks.*

**QUALITY STANDARD**

Aluminum or steel siding may fade or chalk. Homeowner should refer to manufacturer's warranty for performance standard.

**REPAIR RESPONSIBILITY**

None. Homeowner should refer to manufacturer's warranty.

## **SIDING STANDARD**

### **Vinyl Siding**

Vinyl siding is manufactured in several different thicknesses, different finishes, sizes and patterns, and also comes with a variety of manufacturer's warranties and performance standards.

Application of vinyl siding should conform to manufacturer's recommendations.

1. **OBSERVATION**

*Vinyl siding buckles or ripples.*

**QUALITY STANDARD**

By the nature of the product, vinyl siding will expand and contract. Vinyl siding should perform to manufacturer's standards.

**REPAIR RESPONSIBILITY**

The builder will determine the cause of the buckling or rippling and make necessary repairs if the problem is determined to be improper application.

2. **OBSERVATION**

*Vinyl siding cracks or scratches.*

**QUALITY STANDARD**

There should be no cracks or scratches on the vinyl siding at time of walk-through. Cracks or scratches should be noted in writing at walk-through.

**REPAIR RESPONSIBILITY**

Builder will repair if notified prior to occupancy. Homeowner should be aware that the repaired area may not match in color and/or texture.

**3. OBSERVATION**

*Vinyl siding comes loose.*

**QUALITY STANDARD**

Vinyl siding should not come loose. Storm damage is the homeowner's responsibility. Homeowner may elect to pursue a claim with their casualty insurance carrier.

**REPAIR RESPONSIBILITY**

Builder should refasten during the warranty period.

**4. OBSERVATION**

*Vinyl siding fades or chalks.*

**QUALITY STANDARD**

Vinyl siding may fade or chalk. Homeowner should refer to manufacturer's warranty for performance standard.

**REPAIR RESPONSIBILITY**

None. Homeowner should refer to manufacturer's warranty.

## **SIDING STANDARD**

### **Wood**

Wood siding is manufactured from several species of wood in a variety of patterns and textures. Solid wood siding generally will not be warranted, while plywood siding will carry a manufacturer's warranty. All wood siding should be applied per recommendations of the Western Wood Products Association (WWPA). Wood siding should be protected with a suitable coating such as painting or staining.

**1. OBSERVATION**

*Wood siding shrinks.*

**QUALITY STANDARD**

Due to its inherent characteristics, wood will shrink.

**REPAIR RESPONSIBILITY**

Builder shall caulk any gaps in excess of 1/4" if noted prior to occupancy. Due to the characteristics of wood, however, homeowner should expect caulk to pull loose in a relatively short period of time. Caulking of siding after occupancy, including repair of original caulk that has pulled loose, is a homeowner maintenance item.

**2. OBSERVATION**

*Wood siding splits or cracks.*

**QUALITY STANDARD**

Due to the nature of wood siding, hairline cracks or splits in wood siding will occur.



**REPAIR RESPONSIBILITY**

If splits or cracks are noted to builder prior to occupancy, builder shall elect repair by either caulking or replacing the cracked or split siding and duplicating the original finish. Homeowner should be aware that replaced pieces may not match in color.

3. **OBSERVATION**

*Wood siding twists, bows, and knots fall out.*

**QUALITY STANDARD**

This is a normal occurrence in wood siding. This condition is more prevalent on unstained wood.

**REPAIR RESPONSIBILITY**

None.

4. **OBSERVATION**

*Wood bevel siding has an inconsistent lap.*

**QUALITY STANDARD**

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

**REPAIR RESPONSIBILITY**

Builder should repair to meet Quality Standard.

5. **OBSERVATION**

*Exposed areas of courses or rows of siding vary in dimension.*

**QUALITY STANDARD**

All courses or rows of siding shall be uniform within 1/2".

**REPAIR RESPONSIBILITY**

If noted prior to occupancy, builder should repair to meet the Quality Standard.

6. **OBSERVATION**

*Streaks or stains appear where nails penetrate siding.*

**QUALITY STANDARD**

This is a normal occurrence in wood siding. This condition is more prevalent on unstained wood.

**REPAIR RESPONSIBILITY**

None.

7. **OBSERVATION**

*Veneer siding delaminates.*

**QUALITY STANDARD**

All siding should be installed according to the manufacturer's specifications. If owner is responsible for staining or painting of exterior surfaces and does not complete it according to manufacturer's standards, the builder is not responsible for delamination.

**REPAIR RESPONSIBILITY**

Builder will repair or replace siding as needed within the warranty period unless delamination was caused by homeowner's failure to maintain siding properly. Repaired area may not match in color and/or texture. For surfaces requiring paint, builder will paint to duplicate original finish. The homeowner should expect that the newly painted surface may not match the original surface in color provided builder contracted to paint siding on a bid basis.

8. **OBSERVATION**

*Paint peels or fades on wood siding.*

**QUALITY STANDARD**

Refer to Painting, Staining, and Wallpapering Standards, items 1 and 2.

**REPAIR RESPONSIBILITY**

Refer to Painting, Staining, and Wallpapering Standards, items 1 and 2.

9. **OBSERVATION**

*Face nails are excessively countersunk into hardboard surface.*

**QUALITY STANDARD**

Siding nails should not be countersunk to expose visible fiber of hardboard siding.

**REPAIR RESPONSIBILITY**

The builder shall repair as necessary to meet Quality Standard. If visible fiber of hardboard siding is exposed, paint surface to coat fiber. If nail is countersunk 1/16" to 1/8", caulk and touch-up paint. If countersunk in excess of 1/8", caulk and add an additional nail flush to the surface.

10. **OBSERVATION**

*Tongue and groove wood siding is buckled.*

**QUALITY STANDARD**

Siding that projects more than 3/16" from the face of adjacent siding is unacceptable. (Note: Buckling is caused by increasing relative humidity, which causes the siding to expand.)

**REPAIR RESPONSIBILITY**

Builder will repair or replace any siding not meeting the Quality Standard.

11. **OBSERVATION**

*Cracks in exterior stucco wall surfaces.*

**QUALITY STANDARD**

Cracks are not unusual in exterior stucco wall surfaces. Cracks greater than 1/8" in width shall be repaired.

**REPAIR RESPONSIBILITY**

Builder to repair cracks exceeding 1/8" in width, one time only, during the first year warranty.

## **SIDING STANDARD**

### **Cement Board**

Cement Board is a manufactured product made from cementitious material, gray in color. It may be painted in place or have a pre-finish. Cement Board can be applied with smooth or rough side out. The material and the prefinishing process have various warranties. It is resistant to damage from moisture, insects, denting and scratching.

1. **OBSERVATION**

The splices are noticeable.

**QUALITY STANDARD**

The manufacturer recommends splicing factory ends together.

**REPAIR RESPONSIBILITY**

Some noticeable crack in the splice must be present to accommodate thermal expansion and contraction.

2. **OBSERVATION**

Wall framing material is visible through the splice.

**QUALITY STANDARD**

Each splice should have a slip sheet behind it.

**REPAIR RESPONSIBILITY**

The Builder should repair as per manufacturers installation instructions.

3. **OBSERVATION**

There is an absence of caulk at windows, door, and trim junctions.

**QUALITY STANDARD**

Window, door, and trim junctions should be caulked.

**REPAIR RESPONSIBILITY**

The absence of caulk should be noted in the initial walk through and subsequently installed by the builder; the builder should repair the caulk if necessary during the warranty period.

4. **OBSERVATION**

Siding is broken or cracked.

**QUALITY STANDARD**

There should be no broken or cracked siding at the time of the walk through.

**REPAIR RESPONSIBILITY**

Builder shall repair broken pieces prior to occupancy.

5. **OBSERVATION**

Exposed areas of courses or rows of siding vary in dimension.

**QUALITY STANDARD**

All courses or rows of siding should be uniform within ½”.

**REPAIR RESPONSIBILITY**

If noted prior to occupancy, builder should repair to meet the Quality Standard.

6. **OBSERVATION**

Paint peels or fades.

**QUALITY STANDARD**

Pre-finished siding will have its own manufacturers standard and warranty. Refer to the manufacturers manual.

For applied paint, refer to the Painting, Staining, and Wallpapering Standards, item 1.

**REPAIR RESPONSIBILITY**

Refer to Painting, Staining, and Wallpapering Standards, item 1.

# CHAPTER-BY-CHAPTER GLOSSARY

- **General**

Builder's warranty:	Contractual agreement between builder and owner
Manufacturer's warranty:	Standardized guarantee provided by manufacturer regarding product performance
Punch list:	List compiled by owner and builder of items that need to be repaired to declare the job complete
Walk-through:	Process of reviewing the building; builder and owner jointly examine the building for items which need attention, instruct, review amenities

- **Carpentry (Finish)**

Finish carpentry:	Installation of final trim components such as doors, cabinets, moldings, etc.
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- **Carpentry (Rough)**

Load bearing:	That portion of a structure that carries weight of building components and occupants above it
Out of plane:	Deviation from a straight line connecting two points
Plumb/out of plumb:	Deviation from true vertical
Sheathing:	Material which covers large surface to enclose or protect
Subfloor:	First layer of flooring which is applied directly over the floor-framing members
Truss:	An assemblage of members (as beams) forming a rigid framework.

- **Concrete**

Aggregate:	Stone and sand, naturally occurring, but processed and refined for use in making up to 75% volume of concrete.
Chalking:	Powdery surface (see dusting)
Chert:	Lightweight, absorptive, naturally occurring stone subject to freezer/thaw popping
Delamination:	Loss of bond to concrete
Dusting:	Loss of cement fines and/or aggregate fines; may be 1/8" or deeper
Floating slab:	Slab without frost depth foundations; free moving slab, not attached
Hydrostatic pressure:	Water pressure exerted against a structure
On grade:	At height or at level
Pitch:	Slope away from structure
Pitting:	Small holes generally caused by inclusions in the concrete when first installed
Scaling:	Loss of thin surface areas (up to 1/8" thick)
Spalling:	Like scaling, only deeper; may also include larger aggregate

- **Drywall and Plaster**

Compound:	Plaster-like mixture used to cover joints, fill recesses, etc., in drywall surfaces
Corner bead:	A product used on outside corners of drywall to assist in proper formation of the corner
Mudded areas:	Sections of the wall to which compound has been applied
Nail pops:	Bulge in drywall surface caused by a nail or screw coming out of an underlying framing member
Photographing:	Subsurface characteristics which show through the finished surface
Tape:	A paper, fiberglass or mesh product which spans the joints between sheets of drywall

- **Electrical**

Circuit breaker:	Device designed to open and close a circuit by non-automatic means and to open the circuit automatically on a pre-determined over current without damage to itself when properly applied within its rating
Ground Fault Circuit Interrupter (GFCI):	Device intended for the protection of personnel that functions to de-energize a circuit or portion thereof within an established period of time when a current to ground exceeds

some pre-determined valve that is less than that required to operate the over current protective device of the supply circuit

- **Excavation**

Backfill:

Material used to fill area around foundation and in trenches

Swales:

A low-lying or depressed and often wet stretch of land

- **Fireplace**

Chimney cap:

Weather resistant top of the chimney

Draw:

Air flow up the flue

Firebrick:

Brick used to line firebox

Flue:

Clay liner on masonry units or metal liner on prefab

Mortar joints:

Mortar between brick, block or stone

Tuckpoint:

Filling in any mortar joints not full

- **Flooring – Ceramic or Quarry**

Grout:

Thin mortar used for filling spaces; to fill up or finish with grout

- **Flooring – Resilient**

Inlaid:

Sheet vinyl flooring in which the pattern goes through to the backing

Resilient:

Generally thought of as a sheet of vinyl or vinyl tile flooring; not carpet, ceramic or wood

Rotovinyls:

Sheet vinyl flooring with a printed pattern protected by a tough clear or translucent vinyl wear layer

Telegraph:

Common among most modern floor products in that they will allow subfloor irregularity to show through them; irregularities show because of light reflectance

- **Flooring – Wood**

Cupping:

Process in which normally flat surfaces raise at the edges

- **HVAC**

Air conditioner pad:

Base that is placed under the outdoor air conditioning condensing unit to provide a means of leveling and to eliminate a direct contact between the earth and the unit

ASHRAE:

Industry standards set by the *American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.*

Ductwork:

Series of tubular or rectangular sections or channels that may contain elbows and connectors, fabricated as a channel to carry air from one point to another

Hydronic heat:

Science of transferring heat using a fluid. (Most commonly known in our area as hot water or steam heating.)

Radiant heat:

Transmission of heat or energy by electromagnetic waves and absorbed by a disjoined substance. (Rays from the sun is a form of radiant heat) Radiant heat has a tendency to warm the objects it strikes before it warms the air around the object.

- **Indoor air quality**

Mitigation:

Relief of contaminated air

- **Insulation and weatherization**

Condensation:

Water vapor that turns to a liquid

House wraps:

Air barriers that are permeable

Insulating glass:

Two panes or more that add insulation value

R value:

Measure of insulation value; the higher the better but on a reducing scale

Sheathing tapes:

Seal joints on sheathing to reduce air movements

Vapor retarders:

Any material with a perm of one or less to slow the movement of water vapor

Weatherstripping:

Means of limiting air intrusion

- **Landcaping**

Mulch:

A protective covering spread or left on the ground to reduce evaporation, maintain even soil temperature, prevent erosion, control weeds, or enrich the soil

- **Lighting**
  - Ballasts: A resistance used to stabilize the current in a circuit
- **Masonry**
  - Efflorescence: White substance appearing on exterior of veneer
  - Mortar joints: Space between brick or stone
  - Patching: Repairing cement or masonry
  - Pointing: Filling in mortar joints
  - Veneer: Brick or stone facing
- **Painting, Staining, & Wallpapering**
  - Checking: Wood cracking due to drying
  - Consequential damages: Damage caused by others to paint or wallpaper surfaces
  - Floating panels: A wood panel that is able to move in its frame, to allow for expansion and contraction
  - Millwork: Interior or exterior trim on a structure, doors, casing, base, crown molding, dentil moldings, grills, etc.
  - Priming: Usually the first coat of paint on a surface, used to seal and provide a good surface for succeeding coats of paint
  - Dry rot: A decay of seasoned timber
- **Roofing**
  - Flashing: Building material used in waterproofing roof valleys or hips or the angle between a chimney and a roof
  - Pitch: Slope
  - Roof decking: See sheathing (Under Rough Carpentry)
  - Seal down shingles: Shingles which adhere to one another
  - Underlayment: Building component applied under the finish material of a surface
  - Vents: Device which allows movement of air
- **Siding**
  - Course: A row of brick or siding material
  - Gauge: Refers to thickness of siding material