

INDUSTRY STANDARDS MANUAL



**Home Builders Association of Greater Cincinnati
415 Glensprings Drive
Cincinnati, OH 45246**

PREFACE

The Industry Standards set forth in this manual represent the materials and workmanship to which local builders adhere under local building codes. The purpose of these standards is to help you determine the validity of any potential question relative to defective materials and/or workmanship you might experience in your new home during the "Limited Warranty" period.

Only the most frequent items which concern new home buyers have been addressed in these Industry Standards. If a homebuyer experiences a problem or defect not found in these Industry Standards, it indicates only that the Board of Directors has not reviewed nor established Standards for that particular item.

To the extent that minimum performance standards have not been enumerated in these Industry Standards, builders shall construct new homes in accordance with acceptable industry practices, and building code requirements, which assure the home buyer quality workmanship and materials. Likewise, the validity of any complaint for which a standard has not been published shall be determined on the basis of acceptable industry practices, which assure the home buyer quality workmanship and materials; and any conciliation or arbitration of such complaint shall be conducted in accordance with this premise.

For convenience and ease of understanding, we have expressed these Industry Standards in terms of performance standards. Non-compliance with the performance standards beyond the acceptable tolerances calls for corrective action by the builder. The format for each section is designed as follows:

Problem	A brief statement in simple terms of the problems to be considered.
Acceptable Tolerance	A performance standard relating to a specific deficiency.
Builder Responsibility	A statement of the corrective action, if any, required of the builder.

The Home Builders Association of Greater Cincinnati is not a party to the transaction between the builder and his customers. This manual is a service to help eliminate confusion and clarify the quality of materials and workmanship to which Home Builders members adhere.

It is the sincere desire of the Home Builders Association and your builder that the standards and guidelines contained in this manual will assist you in understanding and enjoying your new home.

TABLE OF CONTENTS

I	Building Permits, Zoning Permits, Land Surveys.....	4
II	Excavation, Grading, Ground Removal and Fill.....	6
III	Concrete	12
IV	Blacktop Driveways.....	22
V	Masonry	25
VI	Synthetic Finishing Systems	28
VII	Wood, Plastics and Metal	30
	A) Carpentry	
	B) Finished Carpentry and Millwork	
	C) Windows, Doors and Garage Doors	
VIII	Roofing	42
IX	Insulation.....	45
X	Finishes	48
	A) Drywall and Plaster	
	B) Painting, Varnishing and Wallpapering	
	C) Resilient Flooring, Ceramic Tile, Hardwood Flooring, Laminate and Carpet	
XI	Warm Air Heating, Sheet Metal and Air Conditioning	63
XII	Plumbing.....	67
XIII	Electrical	71
XIV	Water Intrusion and Mold.....	75

Copyright © 1977, 1979, 1984, 1988, 1993, 1994, 1996, 1997, 2000, 2003 Home Builders Association of Greater Cincinnati (513) 851-6300.

Revised 3/2004

SECTION I BUILDING PERMITS, ZONING PERMITS, LAND SURVEYS

Background

It is the intention of the standard to recognize the responsibility of obtaining the necessary permits prior to construction by the contractor on the property. Before any building projects can commence, various government agencies should be contacted to see what permits must be secured prior to or during construction. Each locality has its own requirements for obtaining permits.

Building Permits

Application for construction should be made in accordance with local government agencies. It is the builder's responsibility to secure these permits unless otherwise noted in the contractual agreement with the owner. Some government agencies require inspections by government officials. It is the responsibility of the builder to insure all inspections are done on time during the building process.

1. Problem

The inspecting agent turns down approval of work.

Acceptable Tolerance

Often times an inspector will turn down an inspection because the contractor has not performed to codes regulated by the government agency.

Builder Responsibility

It is the responsibility of the builder to see that any fault be corrected before further work can proceed. The builder is responsible for making the necessary corrections and receiving approval from the inspecting official.

2. Problem

The lot does not have corner boundary stakes.

Acceptable Tolerance

The builder will do the necessary plotting of the building in accordance with local government requirements. It is common for a government agency not to require corner boundary stakes.

Builder Responsibility

None, unless otherwise noted in the contractual agreement with the owner.

SECTION II EXCAVATION, GRADING, GROUND REMOVAL AND 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 supercede or substitute for other restrictions placed by governmental agencies. It is for this reason no mention is made as to FHA requirements or disputes that may arise as a result of similar agencies. Such agencies have written manuals or means of arbitrating such disputes.

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

Excavation

The depth of the excavation is determined by the builder, based on his judgment of actual field conditions as work progresses. Trees, bushes, and grasses within and around the excavation site may be affected by the excavation.

Backfill

To fill the exterior around a foundation or in a trench using a loader or other necessary mechanical equipment, utilizing only the ground which was available from such excavation or trench. The purpose of backfilling is to improve working conditions for further construction; to attempt to protect the foundation from the elements such as frost, water, etc.; to reduce the hazards inherent to open basements or foundations and to get the process of ground settlement started, which takes three or more years depending upon the type of soil. Hauling away excess ground or hauling in additional fill, unless otherwise specified in the contract, is the responsibility of the owner. The time of backfilling in the building process is the discretion of the contractor.

Finish Grading

Using a bulldozer or other proper equipment, using the dirt on the site, and following the approved drainage plan, a proper yard grade is established with respect to the building walk, drive, adjoining properties and draining to within two inches of final landscaped grade. Depending upon the terms of the contracts, this would ordinarily include the entire front, sides and rear area on the lot affected by construction, unless otherwise specified. Finish grade does not mean the ground is prepared for seed or sod. Finish grade is when proper grade elevations have been established so that water will drain away from the dwelling and to natural or man-made water courses.

1. Problem

Settling of ground around foundation, water, sewer, septic or utility trenches.

Acceptable Tolerance

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

Builder Responsibility

As provided in the building contract, the builder is to perform the initial backfilling. If finished grading is not included in the building contract, the builder is responsible to properly notify the owner: (1) of the absolute necessity of the owner promptly following through with the grading responsibilities; (2) of the need for the owner to maintain a positive slope away from the foundation; and (3) that the lack of proper maintenance may cause foundation failure that will not be covered by the builder. Should the building contract include finished grading, the builder has the responsibility during the service period for supplying soil necessary to refill low areas, one time only, so the owner can provide positive drainage slope away from the foundation to prevent subsequent water problems. It is the owner's responsibility, unless otherwise specified by contract, to fill in such depressions as they occur, and to sod or seed, to avoid other related problems.

2. Problem

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

Acceptable Tolerance

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

Builder Responsibility

Backfill in accordance to Item No. 1.

3. Problem

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

Acceptable Tolerance

Walls should not be "wet" as a result of insufficient slope and drainage.

Builder Responsibility

If landscaping is owner's contractual responsibility and is not completed within 30 days of finished grading, there is no builder responsibility. Otherwise, builder should correct slope as needed.

It is the owner's responsibility to fill in all depressions, as they occur, due to settling and to direct all downspout or sump pump discharge lines away from the foundation.

4. Problem

Wet basement walls due to water trickling over the foundation wall from below the sill plate.

Acceptable Tolerance

Walls should not be “wet” as a result of water from below the sill plate. This condition may be due to the finished grade (or mulch above finished grade) placed above the top of the foundation wall.

Builder Responsibility

If the building contract included finished grading, the builder should alter the grade so that it finishes below the top of the foundation wall and maintains a positive slope away from the wall.

Otherwise, it is the owner’s responsibility to alter the grade as stated above. Mulch should never be placed above the top of the foundation wall.

5. Problem

Washing or erosion of landscaped areas installed by the builder.

Acceptable Tolerance

Seeded or sodded areas such as slopes and swales will wash away, depending on the amount of rain or drainage taking place prior to a proper stand of grass being established.

Builder Responsibility

The builder should not be responsible for replacing seed or sod in washed areas where finish grade has been established properly within the guidelines of government ordinances for the period of contractual warranty. In the event washing or erosion occurs as a result of water run-off from adjacent properties on to the owner's property, the builder has no responsibility. The builder is not responsible for replacing seed and sod in washed areas.

6. Problem

Landscaping, seeding, sod or trees dying.

Acceptable Tolerance

Seeding, sod, trees and landscape installed by the builder as part of the contract should be in good condition at the time of the closing. Any defects should be noted by the owner at the time of occupancy inspection or installation, whichever occurs later. Noted defects should be corrected by the builder. Builder is not responsible for the prolonged life or condition of any of the above under any circumstances.

Builder Responsibility

None, except to correct defects as noted above.

7. Problem

Existing trees, bushes die during construction after dwelling is completed.

Acceptable Tolerance

During excavation, backfill and finish grading process trees, bushes, and grasses existing on the building site could be affected by equipment the builder uses on the job.

Builder Responsibility

None.

8. Problem

Standing water in yard areas graded by the builder.

Acceptable Tolerance

Once finish grade has been established pools of water should not stand longer than a 48-hour period.

Builder Responsibility

In the event of standing water exceeding the guidelines above, it is the builder's responsibility to re-grade the affected area and re-seed and/or re-sod. The builder is not responsible for any corrections if the source of the standing water stems from flow of water from adjoining property or work performed by others.

SECTION III CONCRETE

Background

Concrete is a composite material consisting of limestone or gravel, sand, Portland cement, water and various chemical additives. All of the mixture components, the batching of the ready-mixed concrete, and the placement and workmanship are expected to meet the applicable building codes. These standards vary, depending on the local building codes and the use of concrete in the home.

The three general categories of use for residential concrete are foundation (walls and footings), interior flatwork (basement and garage), and exterior flatwork (sidewalks, patios, steps and driveways). The requirements for mix type, surface finish and homeowner maintenance vary depending on the concrete's use.

The curing of concrete is a chemical reaction, the majority of which takes place over the first year of the life of the concrete. During the first year, size, strength, surface durability and water content of concrete change dramatically. Shrinkage cracks--caused by the curing process and changes in temperature in the concrete--are a normal occurrence and do not affect the structural integrity of the slabs or walls. In some applications, particularly exterior flatwork, control joints are installed in an attempt to control--not prevent--crack formation and to provide a more attractive place for these contraction cracks to occur. Control joints are not always successful, however, and the contraction cracks that occur on occasion outside these joints do not constitute a defect in the concrete.

Likewise, micro cracks occur at the surface of the concrete due to drying. De-icing chemicals, lawn fertilizers, and ethyl-glycol (anti-freeze) can enter into these micro cracks and disrupt the integrity of the concrete surface through either mechanical or chemical means. It is strongly recommended that the homeowner seal new exterior concrete with a commercial-grade, penetrating sealer following the manufacturer's instructions prior to the next freeze-thaw season but no sooner than 30 days after concrete is poured. Maintenance of concrete should include a yearly application of sealer to help prevent widespread surface defects such as scaling and pitting. If the surface is not sealed before exposure to repeated wet-dry, freeze-thaw cycles and/or exposure to the aforementioned chemicals, surface deterioration is more likely to occur.

The texture and color of hardened concrete vary depending on aggregate and brand of cement, mix additives, placement and seasonal temperatures (typically, cold weather concrete is darker in color). Repairs, when required, will not match the color of the original concrete. The homeowner should expect color variation.

Practically all surface defects are considered cosmetic rather than structural in nature. The most common surface defects are scaling (shallow indentations usually occurring in groups); pitting (single, deeper indentations with pieces of aggregate visible); and spalling (crescent-shaped indentations occurring along joints). Defects such as scaling, spalling and cracks can be satisfactorily repaired with thin bonding polymer-modified topping materials. They can be

sealed effectively, if required, with commercial-grade elastomers in accordance with these Industry Standards.

Exterior flatwork and garage floors are exposed to a broad range of loading, weathering and chemical conditions which can affect their appearance and durability. Some of these conditions are described herein to inform the homeowner and to help avoid potential problems.

Contributing factors to scaling that occur during the initial mixing or placement of concrete are the builder's responsibility. These factors include the use of non-air entrained concrete or concrete with too little entrained air.

Other causes of deterioration are beyond the control of the builder and precautions must be taken by the homeowner. New concrete--by definition, concrete in its first year of life--is especially vulnerable to scaling, pitting, and spalling during freeze-thaw cycles. De-icing salts such as calcium or sodium chloride should not be used in the first year and are not recommended thereafter. While these salts alone will not chemically attack your concrete, they can, when mixed with water, dramatically increase the susceptibility of your concrete to scaling, pitting, and spalling, during freeze-thaw cycles. Plain, clean sand should be used for traction rather than chemical de-icers.

Some chemicals and acids cause direct damage to concrete. Fertilizers made with ammonia sulfate or ammonia nitrate can chemically attack, causing severe damage. Any fertilizer, acid or other chemical spilled on concrete should be immediately removed to avoid damage.

It is important to protect new concrete from becoming saturated with water prior to the beginning of the freeze-thaw cycle. Homeowners should seal flatwork surfaces with an approved commercial sealant that can be sprayed or brushed onto dry concrete. Late summer is the ideal time for surface treatment. It is important to apply sealers uniformly, as some sealers may change the color of the concrete.

Concrete failure may also occur from overloading concrete structures beyond their intended use. Concrete in residential structures is designed for residential uses, not heavier uses. One example is that residential driveways are designed to carry normal automobile traffic. They are not designed to carry heavy loads such as moving vans, dump trucks, topsoil deliveries, school buses or garbage trucks. Exposure to these vehicles should be prohibited as it may cause damage to the driveway not covered under this limited warranty.

Exact causes of concrete deterioration can only be addressed through extensive laboratory testing of samples secured from the area in question. The fee charged by testing agencies for this service is significant.

Concrete is a versatile and durable material that, with proper care, will provide long-term, satisfactory performance.

1. Problem

Leaks in basement or wet basement.

Acceptable Tolerance

No leaks or flow of water are acceptable, however, such items are not the responsibility of the builder when caused by improper landscaping or subterranean problems where the responsibility is defined as the owner's by the building contract. For further information on these items, refer to the Excavation, Grading, Ground Removal & Fill Standards. Leaking conditions should not be confused with dampness or moisture, which can be expected by the owner during the first year of the settling process, or with condensation during the summer months.

Builder Responsibility

Builder should correct as required. After correction, all openings should be repaired. Color variations in repairs should be expected.

2. Problem

Cracked basement walls not caused by owner's landscaping.

Acceptable Tolerance

Correct all cracks except hairline cracks in mortar joints, cast-in-place concrete or block not exceeding 1/8" average width. All cracks, regardless of size, which cause a leaking problem must be corrected.

Builder Responsibility

Unless structural danger exists, repairs should be made approximately a year after closing to permit normal settling of the home to stabilize conditions. Cracks in mortar joints, poured wall or block should be chiseled out and regouted or repaired by other acceptable methods. Broken blocks should be removed from the inside and refaced with a 4" block. Grout colors should be matched as closely as possible, but color variations should be expected by owner. Exterior repairs are not made except in cases of major structural damage.

3. Problem

Cracking of basement floor.

Acceptable Tolerance

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

- a. If the two surfaces of the crack are mismatched in height by more than 1/4".
- b. If the shrinkage occurs non-uniformly (e.g. all in one crack rather than several) and exceeds 1/4" average width.

Builder Responsibility

Builder should repair crack with a suitable joint sealant per manufacturers recommendation. If mismatched in height, grind or repair by other acceptable methods at

the builders' discretion. Owner is cautioned, repairs will not match in color. A hairline crack may reappear.

4. Problem

Water standing on basement floor slab.

Acceptable Tolerance

No measurable water depth exceeding 3/8" is permissible. The basement floor drain inlet should be lower than the basement floor.

Builder Responsibility

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

5. Problem

Cracking of garage slab.

Acceptable Tolerance

More movement should be expected in the slab since it is more subject to weather variations and settling. The acceptable tolerance is an average 1/4" for cracks in plane or width.

Builder Responsibility

Correct to meet acceptable tolerance as in Item No. 3 above.

6. Problem

Cracking of stoops or porches.

Acceptable Tolerance

Same as Item No. 3 above.

Builder Responsibility

Correction to meet acceptable tolerance as in Item No. 3 above.

7. Problem

Cracks in patios, walks and driveways.

Acceptable Tolerance

The tolerance is the same as for garage slabs in Item No. 5 above.

NOTE: Control joints are installed in an attempt to control--not to stop--the crack formation.

Builder Responsibility

Builder to repair the minimum section, which is in excess of the tolerance as in Item No. 5 above.

8. Problem

Exterior concrete flatwork surface scaling.

Acceptable Tolerance

Using the tool joints in flatwork as a square area, it should be determined whether or not thirty percent (30%) or more of that area is scaling.

Builder Responsibility

If in fact thirty percent (30%) or more of the square area is scaling then the builder is to repair or replace the square area in which scaling has taken place. However, it is the homeowner's responsibility to seal exterior concrete with an approved sealer at least once a year. It is suggested that sealing should be completed before winter.

9. Problem

Pitting of concrete patios, walks and driveways.

Acceptable Tolerance

Pitting is more accurately referred to as aggregate popping or pop-outs. Unlike scaling, pop-outs occur randomly and typically involve pieces of aggregate as opposed to paste and fines as in cases of scaling. Upon closer examination, a fractured particle of aggregate will always be visible on the underside of the pop while the corresponding segment remains embedded in the surface of the flatwork.

Builder Responsibility

None.

10. Problem

Spalling of concrete patios, walks and driveways.

Acceptable Tolerance

Spalling is often mistaken as being synonymous with scaling while in reality, it refers to pieces or chunks of concrete isolated from various cracking patterns within the flatwork itself.

Consequently, spalling often occurs in control joint areas where cracking is induced in a deliberate uniform pattern. Additionally, spalling often accompanies random cracking patterns. In those instances, the cracking actually encircles particles of aggregate which are positioned near the surface of the actual crack line.

Builder Responsibility

Builder to repair only the spalled area. There will be color and texture variation.

11. Problem

Powdering or chalking of concrete work.

Acceptable Tolerance

These defects are not permissible, but should not be confused with construction or household dust. As a rule of thumb, if the surface can be readily gouged with a car key, it requires correction. Further hardness tests can be made to fully ascertain condition.

Builder Responsibility

Sealing the affected surface with a concrete sealing compound.

12. Problem

Low spots in driveways and other concrete slabs, except for stoops or porches.

Acceptable Tolerance

No measurable water depth exceeding 3/8" is permissible on driveways and other concrete slabs.

Builder Responsibility

Correct to meet tolerance by filling with a latex or equivalent filler or grind as necessary or any acceptable method at the builder's discretion. Finished repair should be feathered and smoothed. Color variations are to be expected.

13. Problem

Water standing on stoops or porches.

Acceptable Tolerance

No measurable water depth exceeding 1/4" permissible on stoops or porches.

Builder Responsibility

Correct to meet tolerance by filling with a latex filler or grout, or grind as necessary. Color variations are to be expected.

14. Problem

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

Acceptable Tolerance

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

Builder Responsibility

Correct to meet tolerance by filling with a latex or equivalent filler. Finished repair should be feathered and smoothed. Color variations are to be expected.

15. Problem

Uneven color or discolored concrete.

Acceptable Tolerance

Atmospheric/environmental conditions and various protective measures can have an effect on the color of concrete. Concrete placed at different time periods or placed in sunny or shaded areas can also have an effect on the color of concrete. *Calcium chloride is needed in colder months to accelerate the rate of strength development, decreasing the time which protection against freezing is needed. Calcium chloride tends to darken the color of the concrete.

Builder Responsibility

None.

16. Problem

Mud embedded in surface of concrete.

Acceptable Tolerance

If mud deposits are embedded in concrete and visible at surface of flatwork, this item should be addressed by builder.

Builder Responsibility

Builder should remove noticeable mud deposits embedded in concrete and repair with suitable concrete repair material. Homeowner to be informed that color of repair will not match color of existing concrete. Builder is not responsible for any surface staining of concrete resulting from mud.

SECTION IV BLACKTOP DRIVEWAYS

Background

Blacktop, like concrete, is a man-made product consisting of natural materials that are subject to natural phenomena such as variances in size and texture, expansion, contraction and shrinkage. Because of these natural tendencies, cracks up to 1/2" are acceptable and will require no corrective action.

Blacktop driveways shall be adequate to carry normal automobile traffic. They are not designed to carry heavy loads such as moving vans, school buses, or garbage trucks.

Also, blacktop is subject to chemical/solvent attack and surface deterioration in hot weather. For example, gasoline will attack and break down the bituminous mixture that surrounds the aggregate in blacktop. During periods of hot weather, blacktop surfaces may be damaged under some types of vehicle wheel traffic, bicycle kick stands, etc. Color variations are also to be expected.

Blacktop owners should fill all cracks over ¼" in size, seal blacktop, including edges, on a yearly basis with an approved sealer. This should be done as normal maintenance.

1. Problem

Low spots in driveways in which water pockets appear, not caused by conditions stated above.

Acceptable Tolerance

No measurable water depth exceeding 1/2" is permitted on blacktop driveways.

Builder Responsibility

Correct to meet tolerance by filling with blacktop. The finished repair should be feathered and smoothed. Color and texture variations are to be expected.

2. Problem

Excessive sinking or cracking of blacktop driveway.

Acceptable Tolerance

Blacktop driveway should not sink or crack more than 1/2" or cave in under normal use.

Builder Responsibility

Correct cracks exceeding acceptable tolerance by patching. Areas sinking more than the acceptable tolerance are to be corrected. Finished repair to be feathered and smoothed. Color and texture variations are to be expected.

3. Problem

Mud in surface.

Acceptable Tolerance

During construction you can expect to get mud and dirt in porous blacktop surface.

Builder Responsibility

None.

4. Problem

Chipping at edges of blacktop.

Acceptable Tolerance

This section of blacktop is tamped in by hand and will crack more than 1/2" and cave in when heavy vehicles are driven over it.

Builder Responsibility

None.

5. Problem

Variances in the granular texture of the finish layer.

Acceptable Tolerance

There will be a variance in the size of the aggregates in the top coat.

Builder Responsibility

None.

SECTION V MASONRY

Background

Masonry work is performed with quarried natural materials or with products manufactured by relatively simple processes which have been selected for their wearing qualities. As such, they are subject to the same weathering phenomena as in their natural state, such as erosion, freezing and thawing, chipping, natural color variations and nonuniformity of size. Masonry work can be performed with an almost infinite variety of materials, methods of application and techniques of installation. This permits the owner an almost infinite range of personal choice, but, at the same time, creating, once that choice has been made, a situation that can never again be exactly duplicated. Masonry is more dependent upon the variation of the techniques of the individual workman.

When selecting a veneer material, predominantly a matter of owner's preference, many factors enter in, such as the bond or pattern to be used for the brick or the stone; the selection of the type of mortar joint, whether raked, struck, or weeping pattern; the color of the mortar and the shading variation from batch to batch; the shades of the mortar chosen; the choice of the material size, whether a regular or normal size brick, or the type of stone chosen; and, finally, the individual workmanship performed by the mason doing the work. All of these variations set up a distinctive situation within the masonry field.

Masonry work consists of two primary divisions:

1. The veneering of the exterior of some structures with brick or stone or other masonry products.
2. The construction of fireplaces and chimneys.

1. Problem

Efflorescence, a white chalk-like substance appears on the surface of the brick work.

Acceptable Tolerance

Such occurrence, usually white in color, results from water soluble salts migrating through the masonry structure where they are deposited on the surface through evaporation. Because it appears on the face of the wall it is often erroneously assumed to be the brick that are at fault. To the contrary, efflorescence results from chemical compounds inherently found in the various elements of the masonry i.e. brick mortar, mixing water etc. and as such they do not reflect a defect in the brick.

Builder Responsibility

None.

2. Problem

Brick veneer leaking.

Acceptable Tolerance

Brickwork does absorb water. However, it should not result in water penetrating into the house. Builder should inspect brickwork for apparent voids at windows, door openings, and any mechanical penetrations.

Builder Responsibility

Builder to correct leaking brickwork which results in water penetrating into the house.

3. Problem

Color variations in mortar joints.

Acceptable Tolerance

Color variations can occur in mortar joints due to weather conditions and is acceptable.

Builder Responsibility

None.

4. Problem

Fireplace or chimney does not draw properly.

Acceptable Tolerance

Builder should properly construct a chimney or fireplace that is operable under all conditions except the following:

- a. Temporary downdrafts created by abnormal weather conditions.
- b. Conditions where large obstructions, such as trees, cause a poor draft, in which case it shall be the owner's responsibility to extend the chimney to a height necessary for proper draft or add a downdraft deflector or to remove the obstructions.

Builder Responsibility

Correct fireplace or chimney to meet acceptable tolerance and/or local building codes applicable at time of construction.

5. Problem

Deterioration of used brick.

Acceptable Tolerance

The performance of used material cannot be warranted. The owner has the responsibility of making repairs should deterioration occur.

Builder Responsibility

None. The owner is responsible for periodic siliconing of used brick as part of normal home maintenance.

**SECTION VI
SYNTHETIC FINISHING SYSTEMS
(EIFS)**

Background

An exterior finishing system is an exterior wall building system made up of various key components; reinforcing fabrics, primus/adhesive, synthetic plaster finish, and/or insulation board.

1. Problem

Cracks, buckling, wrinkling or delamination of insulation board in system.

Acceptable Tolerance

Cracks, buckling, wrinkling or delamination of insulation board in system under normal circumstances should not occur unless due to impact.

Builder Responsibility

Builder to check and repair affected areas, matching texture and color as closely as possible. Owner must understand repair will not match exactly. The builder shall repair in accordance with standards of good workmanship, but no warranty will be extended on the newly repaired surfaces.

**Homeowner Maintenance
Responsibility**

Although EIFS has been marketed as a low maintenance material, the sealant/caulking must be maintained to avoid any moisture penetration into the system. The sealant/caulking creates a water tight seal between the window, doors, mechanical penetrations and the exterior EIFS system. It is extremely important the caulking remains intact and in good condition at all times. Homeowner should inspect the sealant/caulking on the exterior of the home at all openings into the EIFS system at least once a year. Openings include but are not limited to the windows, doors and mechanical penetrations. The sealant material should not be cracked, broken or missing. The wall material should not be punctured or cracked. These conditions may allow water penetration behind the system and cause premature failure to parts of your home. Deterioration that occurs as a result of improper/or insufficient maintenance is not covered by the warranty.

Consult manufacturer recommendations for specific cleaning instructions.

2. Problem

Water leaks and water streaking.

Acceptable Tolerance

Water penetrating through surface may occur; however, it should not accumulate behind the surface.

Builder Responsibility

Make repairs per manufacturers specifications and standards of good workmanship.

3. Problem

Cracks, gaps or insufficient sealant/caulking around penetrations in the wall system.

Acceptable Tolerance

All finish system penetrations should be completely sealed/caulked with approved materials as per the finish systems manufacturers specifications.

Builder Responsibility

Builder to correct to meet manufacturers specifications.

SECTION VII WOOD, PLASTICS AND METAL

Background

This section of standards applies to the dimensional framing materials and exterior trim components of a house and their installation; i.e. floors, trusses, windows, siding, etc.

The species of lumber used in these building components are many and are transported to this area from all parts of the United States and Canada, and in some instances, outside of North America.

Since almost all lumber used in home construction here is not indigenous to this area, it goes through a period known as "stabilization." This stabilization period usually lasts through one complete change of all seasons, or in some cases longer. During this stabilization of material, it is not uncommon for it to swell, bow, bleed, twist, or contract through drying or curing, and in general, deviate to different degrees from its original form when installed. Since much of this movement is hidden behind finished surfaces such as drywall, carpet, door jambs, etc., the effect is many times seen only on the outside; such as mitered joints that were once closed, now open up; and doors that initially operated efficiently now will not latch properly. These problems are due mainly to the stabilization of lumber and should be attended to as late in the service period as possible so as to allow sufficient time for this inherent characteristic of lumber to stabilize.

Metal products are an acceptable material for construction and should be installed according to the manufacturer instructions.

A) CARPENTRY

1. Problem

Squeak in floors.

Acceptable Tolerance

Extensive research on this subject concludes that little can be done about floor squeaks. Generally, these will appear and disappear with changes in weather conditions.

Builder Responsibility

Within reasonable repair capability, locate squeak and face nail, screw floor from below, or wedge cedar shingle with feathered edge between the floor joist and sheeting in basement at point of squeak. Due to the nature of floor squeaks, total elimination may not be possible.

2. Problem

Uneven floors.

Acceptable Tolerance

Floor should not be more than 3/8" off level in 32".

Builder Responsibility

Builder to correct to meet acceptable tolerance.

3. Problem

Ceilings uneven.

Acceptable Tolerance

Ceiling should be not more than 1/2" off level in a 48" span.

Builder Responsibility

Builder to correct to meet acceptable tolerance.

4. Problem

Walls uneven.

Acceptable Tolerance

Walls should be even within 3/4" vertically or horizontally on any given wall within any 8' span.

Builder Responsibility

Builder to correct to meet acceptable tolerance.

5. Problem

Delamination or premature deterioration of exterior siding.

Acceptable Tolerance

Siding should not delaminate or deteriorate within the manufacturer's specifications.

Builder Responsibility

Builder should correct to manufacturers specifications unless caused by owner's neglect to maintain siding properly.

6. Problem

Exterior butt and miter joints do not fit properly.

Acceptable Tolerance

It is feasible that these joints can open to as much as 3/8" tolerance because of material expansion, contraction and stabilization.

Builder Responsibility

Builder should correct to meet acceptable tolerance, caulking is acceptable.

7. Problem

Fluctuation of roof sheathing between rafters or trusses.

Acceptable Tolerance

Sheathing should not fluctuate more than 1/2" between adjacent structural members.

Builder Responsibility

Builder to correct to meet acceptable tolerance.

8. Problem

Ripples and noise in metal and vinyl siding.

Acceptable Tolerance

These are inherent characteristics of metal and vinyl siding.

Builder Responsibility

None.

B) FINISHED CARPENTRY AND MILLWORK

Background

Wood and wood like products are the basic materials used in finish carpentry. Wood is a natural product and there are individual grain variations in each piece of wood. Therefore, it is understood that grain matching is not to be expected. Grain matching techniques, especially in plywood, are possible, but are not the normal industry standard and could only be accomplished as a specific contractual agreement between the owner and builder and the careful selection of matching panels by the lumber supplier.

It should be noted that over the past several years, a marked change has taken place in the area of finish carpentry. Considerably less of the labor is being done on the site and more of it is being done off-site by specialists such as cabinetmakers, paneling firms and mills, often out-of-state. There is less emphasis on the custom-made cabinet and more on purchasing pre-manufactured, pre-finished units. As such, almost all millwork, paneling, cabinetry, windows and doors are purchased by the builder as a completed product and are covered by separate manufacturer's standards and warranty. The standards listed below are guidelines to a performance warranty designed to assure the proper functioning of the particular components involved in the finished carpentry area. In unusual cases, it may be necessary for the builder to bring in a manufacturer's representative on the particular component for more detailed analysis of the nature of the problem and the recommended correction and possible replacement and/or adjustment under the manufacturer's warranty.

All warpage, shrinkage and swelling corrections after occupancy are covered only if the owner maintains proper temperature control and humidity within the house. These standards apply to finished living areas and not to basements and garage areas.

1. Problem

Cabinet doors or drawers warp and cannot be closed or will not stay closed.

Acceptable Tolerance

All cabinet doors or drawers should open and close properly.

Builder Responsibility

Builder to correct to meet acceptable tolerance.

2. Problem

Cracks, gaps in miter joints, or other workmanship imperfections.

Acceptable Tolerance

Cracks and gaps in miter joints should not be noticeable at the time of closing. However, mitered joints may open during the stabilization period of the building.

Builder Responsibility

Builder to correct any cracks, gaps in miter joints, or other workmanship imperfections noted at the time of closing. Correction of defects through the use of sanding, filling, puttying and staining is acceptable. If cracks and gaps appear during the stabilization period the builder has no responsibility.

3. Problem

Scratches and swirls in natural marble and manufactured cultured marble countertops and window sills.

Acceptable Tolerance

When manufactured, marble countertops and window sills are buffed to a high gloss finish, under certain lighting conditions such as down lights, swirls from the polishing process are visible. Such swirls are normal and do not require any action by the builder. There should be no other imperfections in the tops at the time of closing.

Builder Responsibility

Builder has no responsibility for swirls from the manufacturing process. Builder should correct defects noted at the time of closing. Since the tops are subject to owner damage, defects occurring after closing are the responsibility of the owner.

4. Problem

High pressure laminate (Formica) surfaces crack, chip, delaminate or are burned or scratched.

Builder Responsibility

None, except to correct defects noted at time of closing. Since the tops are subject to owner damage, defects occurring after closing are the responsibility of the owner.

5. Problem

Cabinets separate from wall or loosen.

Acceptable Tolerance

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

Builder Responsibility

Correct any installation separations of cabinetry from the mounting surface, except those due to shrinkage.

6. Problem

Basement stairs and/or stringers split.

Acceptable Tolerance

Since basement stairs are usually in an unfinished area, splitting is acceptable unless it is affecting the structural stability of the stairs.

Builder Responsibility

Builder should correct to meet acceptable tolerance.

7. Problem

Cracking in caulking applied to wood joints.

Acceptable Tolerance

Cracking in caulking is to be expected due to wood shrinkage during the stabilization process.

Builder Responsibility

None.

8. Problem

Trim material loose from wall surface.

Acceptable Tolerance

All trim material should be secure to wall surface and should not move to touch.

Builder Responsibility

Trim material should be secured to wall surfaces by nailing or gluing.

9. Problem

Shelving sags or pulled away from wall surface.

Acceptable Tolerance

Shelving materials will sag or pull away from wall when heavy materials are placed on them. Shelving supports should be located in accordance to manufacturer's specifications.

Builder Responsibility

Add shelving supports where shelving expanses have exceeded manufacturer's specifications and/or replace warped or damaged shelf material if necessary.

C) WINDOWS, DOORS AND GARAGE DOORS

Background

Problems with the operation and performance of windows and doors are usually the result of improper installation or failure to perform routine maintenance. All window and door products in your home have specific installation, warranty, and maintenance information supplied by the respective manufacturer and given to your builder. Please retain this information for your reference. It is imperative to operate all window and door products in your new home before your closing to make sure all fenestration products open and close properly and can securely keep air and water from entering your home.

A) WINDOWS

1. Problem

Windows do not operate properly.

Acceptable Tolerance

All windows should operate as designed by the manufacturer after the initial stabilization period.

Builder Responsibility

Adjust and/or repair window units that fail to function under manufacturer's operating directions after the initial stabilization period.

2. Problem

Glass breakage or leakage in windows.

Acceptable Tolerance

Any broken, cracked or scratched glass should be noted by the owner at the time of closing and should be corrected by the builder, unless otherwise covered by insurance. Insulated glass (thermo pane) often carries extended manufacturer's warranty against leakage-related defects.

Builder Responsibility

None, except to correct defects noted at the time of closing. Defects occurring after that time are the owner's responsibility for correction since these surfaces are subject to owner's damage.

B) DOORS

1. Problem

Warpage or non-closing of exterior doors.

Acceptable Tolerance

Because of the security provided by these doors, the doors must be adjusted or corrected as required throughout the initial first year's service period to maintain the security of the building.

Builder Responsibility

Correct to maintain the security of the building. Replace or repair any exterior doors whose warpage cannot be corrected by adjustment of jams, stops, and/or hinges to properly latch after the initial stabilization period of the building.

2. Problem

Loosening or separation of veneer in flush doors.

Acceptable Tolerance

Veneer should not crack or separate during the first year's service period provided the doors have been properly finished by the builder if part of the contract. If painting is part of the owner's contract, the owner is cautioned to finish the veneer doors on all surfaces at the earliest possible opportunity to prevent weathering deterioration of the door, which can lead to veneer delamination or warpage.

Builder Responsibility

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

3. Problem

Shrinkage or swelling of paneled doors or paneling.

Acceptable Tolerance

Shrinkage of recessed panel doors or paneling should not create actual gaps between the panels and their frame or meeting surface. It should be noted by the owner, however, that the panels may shrink in the stabilization process and the unfinished portions of the paneling could be exposed.

Builder Responsibility

It is the builders responsibility to touch-up those gaps between panels during the initial stabilization period if the painting was part of the builder's contract.

4. Problem

Panels or door graining do not match.

Acceptable Tolerance

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

Builder Responsibility

None.

5. Problem

Interior door sticks, will not open or close without rubbing jamb material.

Acceptable Tolerance

A minimal margin of 1/16" clearance should be between door and jamb.

Builder Responsibility

Builder to correct to tolerance by sanding and/or planing or adjusting hinges and touch up door finish as required.

C) GARAGE DOORS

1. Problem

Garage door fails to operate properly.

Acceptable Tolerance

Garage doors should operate under normal conditions.

Builder Responsibility

Builder shall correct or adjust garage doors as required.

2. Problem

Water leaks under garage door because seal at door bottom is not airtight, blowing winds may force rain under garage bottom.

Acceptable Tolerance

The minimal acceptable clearance between the bottom of the garage door weather strip and the floor is 1/16".

Builder Responsibility

Builder to correct to tolerance. Rain water may enter beneath any garage door installation but should not leak into interior living areas.

SECTION VIII ROOFING

Background

The purpose of roofing material is to form a weatherproof surface which prevents water from entering the house. There are several types of roofing material used, including asphalt, fiberglass, wood, tile, slate and metal. In single family residential construction, the most common material used is the seal down asphalt shingle. This common fiberglass shingle is manufactured by coating a dry felt core with asphalt and rolling colored granules on the outer surface to provide the finished color. Because the process of coating shingles with colored granules is a batch-type process, dye lots and color variations can result. This is quite common.

The shingle manufacturer holds all warranties for their product. Homeowners should familiarize themselves with these warranties.

1. Problem Roof leaks.

Acceptable Tolerance

Roof should not leak. On some occasions, a driving rain with high wind velocity from a particular direction with relation to the shingle can produce a temporary leaking condition.

Builder Responsibility

The leakproofness of the roof is a combination of the characteristics of the shingling material and the sheet metal work which is used at the junctures of various angles of the roof and at the opening, such as chimneys. Builder is to correct to meet acceptable tolerance.

Homeowner Maintenance Responsibility

Excessive ice or snow build-up with alternate freezing and thawing can create a capillary effect causing leakage, which is a homeowner maintenance responsibility. Owner can correct this by preventing leaf build-up in gutters and removal of excess snow and ice. In severe cases, a gutter heating cable can be used.

2. Problem Wind damage.

Acceptable Tolerance

Shingles should not blow off under normal conditions. However, in excessive high wind shingles may stand up in the air or possibly blow off if the shingles have not had ample sunlight and roof heat to activate the seal down strip. Some shingles may require one full summer to complete the sealing process.

Builder Responsibility

Ensure installation is in accordance with manufacturer instructions. Provide manufacturer warranty, and handle grievance in accordance thereof.

3. Problem

Inadequate nailing or stapling of shingles.

Acceptable Tolerance

Shingles should be fastened in the proper location with the correct number and size fastener as specified in the manufacturer's instructions.

Builder Responsibility

Correct deficiencies to bring roof in compliance with installation requirements.

4. Problem

Shingle color mismatch.

Acceptable Tolerance

Manufacturers do not warrant uniform color. Some color mismatches occur from sun reflections, minor differences in colors between shingles in the same lots and the aging and weathering of shingles. Shade variations are to be expected and impossible to duplicate.

Builder Responsibility

None.

5. Problem

Moss, fungus and algae on roof.

Acceptable Tolerance

Sunlight obstructions such as northern exposure, shade, overhangs and trees may increase the build up of moss, fungus and algae.

Builder Responsibility

None.

SECTION IX INSULATION

Background

Insulating is the process by which an inert, fire-resistant material is applied to walls, ceilings, and floors of a structure to act as a barrier which creates a resistance to heat flow (R-value). This produces a more controlled interior climate within the home and conserves energy and fuel usage.

The commonly used insulation materials are rock wool, fiberglass, mineral wool, cellulose and various types of foams and bead boards. The insulation materials are manufactured in batt form, as loose-blown material, and in sheet form, all having individual specific uses. A secondary function of the insulating material is to provide a vapor barrier to restrict migration moisture between walls. These materials are either kraft paper, foil facing or polyethylene sheets.

- 1. Problem**
Pipes freeze.

Acceptable Tolerance
None.

Builder Responsibility

Correct the situation to prevent pipes from refreezing. The correction will involve opening the walls for access to the pipe and either adding or replacing insulation which may have moved during the construction process or leaving a permanent vent into the warmer space to prevent the freeze from reoccurring.

- 2. Problem**
Condensation, frost or ice build-up on interior window surfaces.

Acceptable Tolerance
Due to weather conditions and interior humidity factors, condensation, frost, and/or ice build-up may occur.

Builder Responsibility
None.

NOTE: Excess moisture will be present in the house during the first year of occupancy due to the natural drying of the building materials (such as lumber and concrete). If a humidifier or dehumidifier is installed on the furnace, owner should adjust the settings for proper operation. A dehumidifier in the basement may be helpful.

- 3. Problem**
Drafts and temperature variation at mechanical penetrations.

Acceptable Tolerance

Mechanical penetrations of walls produce an air-flow passage whereby the cold or outside air can be drawn into the home.

Builder Responsibility

Caulk and seal open penetration.

4. Problem

Drafts around doors and windows.

Acceptable Tolerance

Proper installation, weather-stripping, caulking and insulating around these areas can minimize air passage. However, under certain temperature and wind conditions, some infiltration will occur.

Builder Responsibility

Inspect to see that doors or windows are installed and adjusted correctly. Check to assure that the air leakage is within manufacturers limits and correct as necessary.

5. Problem

Movement of blown attic insulation.

Acceptable Tolerance

On occasion, due to attic ventilation or unusually high winds, blown-in attic insulation will tend to move from its original position. In such cases, it should be repositioned by the owner.

Builder Responsibility

None.

SECTION X FINISHES

A) DRYWALL AND PLASTER

Background

In reviewing drywall and plaster problems which occur during the first year of service, 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 and plaster are a relatively inflexible gypsum material which are applied to the interior surfaces created by the rough carpentry step. Both are applied in sheets which are attached, nailed, or screwed to the studs or joists for application. The sheets are then taped and finished and the entire surface is painted or textured to produce a finished surface which is judged on its appearance. In plaster, the final coats are trowelled or sprayed on.

Because the drywall or plaster has been placed on lumber surfaces which are subject to shrinkage and warpage and which are not perfectly level and plumb, problems occur through stress and strain placed on drywall during the stabilization of the lumber. This is inherent in the construction of a home. For example, if a stud twists in the drying process, this twist will be reflected in either a concave or a convex surface to the drywall or plaster. If this shrinkage in any particular area exceeds the flexibility of the gypsum wall board, an imperfection will occur.

In evaluating the need for drywall and plaster repairs, the general rule to be applied is, if the defect is readily noticed by visual inspection, it should be repaired. However, due to the initial stabilization problem which exists with the new home, it is impossible to correct each individual defect as it occurs, and for that matter, it is essentially useless to do so.

The entire house will tend to stabilize itself near the end of the service period, and one repair should be made when necessary, preferably near the end of the 12th month after closing, upon request by the homeowner. Repairs will be made no more than one time during the service period.

Since drywall and plaster are finished materials, repairs will be slightly visible due to a color or texture mismatch after they have been made. The mismatch will be even more critical when a special textured finish has been employed. Repairs do not require repainting when they are applied on unpainted surfaces such as ceiling cracks or when the builder did not contract for the painting. When it is part of the contract, 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 repainting.

These drywall and plastering standards apply to finished living areas and not to basements or garage areas.

1. Problem

Visual defects, such as cracks, corner bead cracks, seam lines or ridging are generally caused by lumber stabilization.

Acceptable Tolerance

Any of the above defects, which can be readily determined by visual inspection without resorting to intense artificial or natural light placement, shall be repaired by the builder, except where normal repainting will cover the defect, as in the case of the hairline crack.

Builder Responsibility

Repair to original finish as closely as possible, except builder has no responsibility to repair if tape cracking or breaking is caused by truss uplift as described in Problem No. 3. When repair is builder's responsibility, repairs will be made only one time during the service period, preferably near the end of the 12 month period. Builder is not responsible for repainting where repairs are made on a painted surface.

2. Problem

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

Acceptable Tolerance

Defects which can be readily observed by visual inspection without resorting to intense artificial or natural light placement should be corrected, except where normal repainting will cover the defect.

Builder Responsibility

Correct such defects to meet acceptable tolerance.

3. Problem

Cracks or breaks in tape where walls meet insulated ceiling.

Acceptable Tolerance

Cracks where interior walls meet insulated ceilings are caused by the bowing of the roof trusses. Roof trusses will rise in the winter, especially when the bottom chord of the truss is surrounded by a thick layer of insulation that prevents the bottom chord from obtaining the same temperature and moisture content as the top chord. This lifts the ceiling drywall and cracks the tape. Short of removing the attic insulation which is not recommended, truss uplift cannot be prevented.

Builder Responsibility

None.

4. Problem

Hairline cracks and nail pops.

Acceptable Tolerance

Hairline cracks and nail pops are a normal part of the stabilization process.

Builder Responsibility

None.

5. Problem

Repaired textured ceiling or walls do not match.

Acceptable Tolerance

Texture and color variations are to be expected.

Builder Responsibility

None.

B) PAINTING, VARNISHING AND WALLPAPERING

Background

The purpose for painting is more than decoration, in that paint or stain protects exposed surfaces from the weather. Preservation is the primary purpose for painting, varnishing and staining, and the intent is to produce a surface sealed from moisture penetration. Millwork manufacturers do not normally extend warranties on their product against warping or cracking. When the owner has contracted for painting, the builder is responsible to properly apply the material in accordance with manufacturer's recommendations and industry standards of proper workmanship. Nail holes on interior surfaces must be puttied and all joints must be properly caulked. These standards apply to finished living areas and not to garage and basement areas.

Interior wall paint coverage can be affected by the color of the selected paint. In general, pastel colors do not cover well and may take three or more coats. The owner should refer to his/her contract in such cases. Stained interior trim and millwork is colored by applying one coat of stain to the bare wood and then wiping off the excess. Differences in the wood grain and the manufacturing process can cause porosity variations which will then cause color variations of the finished product. This can even occur within one board as well as different pieces from the same lot. Due to the length of the stabilization process of a new home, it is recommended for the owner's protection that no wallpaper be installed during the first year of occupancy.

1. Problem

Exterior paint or stain peeling, chalking or fading except gutters, downspouts or other sheet metal areas.

Acceptable Tolerance

The occurrence of peeling, chalking or fading, except through normal oxidation process, should not occur during warranty period.

Builder Responsibility

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

2. Problem

Painting required as a result of other repair work, except drywall.

Acceptable Tolerance

Industry standards require that the builder repaint new areas or repaired areas where painting has been affected (except drywall repairs or where painting was not part of the builder's contract.)

Builder Responsibility

Same as stated in No. 1 above.

3. Problem

Varnished or stained millwork which deteriorates due to weather conditions (inclusive of sunlight).

Acceptable Tolerance

Millwork must be cared for, like furniture it cannot be scrubbed. Due to varying weather conditions, including exposure to sunlight, the finish on varnished or stained millwork cannot be warranted. Varnished or stained millwork requires more frequent refinishing than do painted surfaces.

Builder Responsibility

All stained millwork should have a minimum of one coat of stain and one coat of sealer or polyurethane.

4. Problem

Insufficient coats applied.

Acceptable Tolerance

Builder is responsible to apply the number of coats specified in the contract. Pre-primed millwork has a prime coat. The number of prime coats and final coats shall be the same throughout the house unless otherwise specified in the contract.

Builder Responsibility

Provide the proper number of coats. If a prime coat has been omitted an additional final coat may be added as a substitute.

5. Problem
Wall covering losing adhesion.

Acceptable Tolerance
Wall covering should not lose adhesion under normal wear.

Builder Responsibility

- a. Provided the wall covering is in the builder's contract, it should be repaired or replaced.
- b. If a patch or repair must be made, builder shall match as closely as possible. Because of dye lot differences, owner must understand an exact match may not be possible.
- c. If installed by the owner, wallpaper repairs are the owner's responsibility.

6. Problem
Owner's wall covering or owner's painting is affected by related repairs.

Acceptable Tolerance
The owner should inspect the surface prior to painting or papering. Since the work was done by the owner, the owner accepted the surface as satisfactory for the original work at the time of installation. The owner is responsible for any subsequent paint and paper repairs to that surface.

Builder Responsibility
None.

7. Problem
Washability of painted surfaces.

Acceptable Tolerance
Washable as defined by paint manufacturer.

Builder Responsibility
None.

8. Problem
Color variation of stained woodwork.

Acceptable Tolerance
Stain color will vary in look on different types of wood. Stain color may vary even though the wood type is the same because of the grains.

Builder Responsibility
None.

C) RESILIENT FLOORING, CERAMIC TILE, HARDWOOD FLOORING, LAMINATE AND CARPET

Background

All types of flooring are subject to conditions and stresses of the surfaces to which they are applied. These conditions and stresses include but are not limited to expansion and contraction, warpage, settling, moisture and temperature fluctuations which usually occur during the stabilization period.

This section concentrates on the installation and workmanship of flooring products which are the builder's responsibility. The quality (of the product itself not considering installation) and durability of flooring products are judged and warranted according to the manufacturers specifications and warranties. It is recommended that the owner(s) familiarize themselves with the manufacturers warranties. Since dirt and grit can permanently damage resilient flooring, it is important to clean the flooring frequently. It is important to use only those cleaning products recommended by the manufacturer.

Resilient Flooring

Resilient flooring is a term which describes relatively non-porous materials including but not limited to: sheet vinyl, linoleum, and vinyl tiles. Resilient flooring is secured to the properly prepared surface with adhesive designed specifically for this application. Sheet vinyl is often glued only around the perimeter and at the seams.

All resilient flooring is subject to normal manufacturing tolerances, which may be noticed within the same pattern when replacement or repair work is performed. "Dye Lot" refers to a limited quantity of material produced at a given time. There are differences noticeable in the same pattern of flooring produced from one dye lot to another, such as: color, texture, and pattern variations. A common flooring problem occurs when repair is needed and there is not an exact match between the replacement and existing flooring due to dye lot variations.

Other factors outside the builders control which may contribute to the impossibility to make an exact match, even within the same dye lot, are: wax and cleaning product build-up on the existing floor, environmental differences such as sunlight variations, chemical reactions, etc. Also, it may be impossible for the builder to obtain the same pattern if it has been dropped from production.

The surface of many resilient floors may be permanently deformed when subject to high concentrated loads such as unprotected furniture legs. It is recommended that all furniture used on resilient floors have protectors to help preserve flooring. Wheeled casters can damage resilient flooring. Because of the above mentioned factors and normal wear and tear, the owner should expect some noticeable difference to repaired resilient flooring: however, the builder should attempt to match as close as possible the pattern, color and texture of the existing flooring.

Ceramic Tile

Ceramic tile is a product manufactured in many sizes shapes and colors. Ceramic tile is usually bought and installed as individual pieces or small sheets of tile. It is secured to the

properly prepared surface with adhesive designed specifically for ceramic tile installations. Most of the problems with ceramic tile occur due to the stabilization of the surfaces which the tile is applied as discussed earlier in this background.

Hardwood Flooring

Hardwood flooring, (whether pre-finished or sanded and finished on the job), because of its very nature as a wood product, may expand, contract, cup and warp due to seasonal moisture and temperature variations in the home. Because of these changes taking place in the wood itself, separations or gaps will be seen between individual boards and at butt edges. Hardwood is also subject to "creaking, cracking, and popping" sounds under normal foot traffic. It should be noted that these characteristics will not necessarily be consistent throughout the entire floor area. All of these situations should be expected and will warrant no concern or correction.

Laminate Flooring

Laminate flooring has a wear-resistant decorative surface made of resin-based melamine which is bonded to a moisture-resistant wood based core. Laminate flooring is typically a tongue and groove interlocking system that rests on top of an existing surface. Some brands of laminate flooring recommend that joints be glued together while other manufacturers use a snap together system requiring no adhesive. Follow the manufacturer's recommendations regarding the use and maintenance of this product.

Carpet

Carpeting is manufactured in a variety of weaves, patterns, weights, and grades. Carpeting is subject to the same type of dye lot considerations as mentioned above in the resilient tile section. It is very important to stress the required maintenance involved to get the best wear possible from carpeting. It includes: frequent and thorough vacuuming, prompt cleanup of spills and stains, periodic professional care and cleaning, and other maintenance recommended by the manufacturer.

Carpet which has specific trademarks (i.e. Stain Master, Scotch Guard, etc.) are not impervious to staining; however, they are less prone to permanent staining and usually cleanup better than carpet without such trademarks. This standard is concerned mostly with the installation of carpeting as the performance of the carpeting will be judged by the manufacturer.

1. Problem

Nail or staple pops appear on the surface of resilient flooring.

Acceptable Tolerance

All nail or staple pops should be repaired at normal service periods.

Builder Responsibility

Correct all nail or staple pops which have not broken the surface of the goods by driving the fasteners back into place. Replace any tiles where the fasteners have broken the surface of the tile. Plug or replace sheet goods in the minimum area where the joint will not be readily noticeable where the fastener broke the surface.

2. Problem

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

Acceptable Tolerance

In the natural stabilization process, some mismatch of the subfloor may exhibit itself as ridges or depressions showing on the surface goods. If the ridge or depression effect exceeds 1/8" and cannot be corrected from below, the resilient floor must be corrected. The ridge measurement 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 floor and the straight edge at the other end.

Builder Responsibility

Remove the sheet goods or tile in the minimum area where the joint will not be readily visible when repaired, renail the subflooring, sand smooth and/or fill gap and replace the sheet goods or tile.

3. Problem

Resilient flooring lifts, bubbles, or becomes unglued at joint. (NOTE: Perimeter glued vinyl may be able to be lifted, especially at a distance from the glued edges. This is intentional and is not a defect.)

Acceptable Tolerance

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

Builder Responsibility

Providing edges are still intact, re-secure the material. If not, replace the minimum area as per standard No. 2.

4. Problem

Shrinkage gaps show in vinyl or composition tile.

Acceptable Tolerance

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

Builder Responsibility

Repair as necessary.

5. Problem

Shrinkage of sheet goods at baseboards and door jambs.

Acceptable Tolerance

Shrinkage shall not exceed 1/16" from baseboard to material installed.

Builder Responsibility

Toe strip and/or caulking shall be applied.

6. Problem

Cracks appear at joints in ceramic tile.

Acceptable Tolerance

Cracks at the joints of ceramic tile are common due to the settling process, especially between the horizontal and vertical surfaces or the butting of dissimilar materials.

Builder Responsibility

None.

7. Problem

Ceramic tile cracks or becomes un-cemented.

Acceptable Tolerance

None.

Builder Responsibility

Replace any cracked tiles and recement any loose tiles, unless the defects were caused by the owner's negligence. Replaced tile and grout will not be an exact match to the original.

8. Problem

Gaps appearing in hardwood flooring at seams and butt joints.

Acceptable Tolerance

Because of the nature of the product, hardwood gapping or separation can be expected.

Builder Responsibility

None.

9. Problem

Hardwood cracking or popping under normal foot traffic.

Acceptable Tolerance

Because of the nature of the product, hardwood cracking or popping is unavoidable.

Builder Responsibility

None.

10. Problem

Subflooring loose under hardwood flooring.

Acceptable Tolerance

Builder to repair loose subfloor, nailing thru face of hardwood is permissible to achieve this end.

Builder Responsibility

Renail or repair as necessary.

11. Problem

Scratches or gouges in hardwood floors which appear during construction.

Acceptable Tolerance

Obvious scratches or gouges are not acceptable.

Builder Responsibility

Repair in a workmanlike manner. Puttying and restaining is acceptable.

12. Problem

Color variation of carpet.

Acceptable Tolerance

Color may vary from dye lot to dye lot.

Builder Responsibility

None.

13. Problem

Carpet seams visible.

Acceptable Tolerance

Carpet seams will be seen at times due to the fabric type of carpet, sunlight and grain of fabric. Carpet grain in a room should run in the same direction. Seams should be installed according to the manufacturers carpet installation standard. Especially in large rooms where a seam is needed near the middle of the room, carpet may appear lighter on one side of the seam due to light refraction.

Builder Responsibility

None, unless seams are installed with a gap of 3/16" or more or if backing is overlapped.

14. Problem

Matting, shedding or crushing of carpet.

Acceptable Tolerance

Matting, shedding or crushing of carpet may occur.

Builder Responsibility

Provide manufacturer warranty and handle grievance in accordance with it.

SECTION XI
WARM AIR HEATING, SHEET METAL AND AIR CONDITIONING

- 1. Problem**
Insufficient heat.

Acceptable Tolerance

Builder shall install a heating system capable of maintaining an inside temperature of 70 degrees F. when outside temperature is 0 degrees F. Up to a 6 degree temperature difference in different rooms and from floor to floor is considered acceptable. Such temperature difference should only be measured in Finished Rooms. For purpose of Article XI, "Finished Rooms" shall mean rooms which have been enclosed with drywall or plaster and which contain heating and cooling ducts.

Builder Responsibility

- a. The warm air heating installation shall be made in accordance with the standards, practices and methods set forth in the current manuals of the National Environmental Systems Contractors/Sheet Metal & Air Conditioning Contractors National Association (NESCA), which represents the national standards of the warm air heating industry, and in compliance with all local municipal codes.
- b. Heat loss and heat gain calculations shall be made from the plans and specifications of the specific structure in accordance with manual "J," the current edition, for equipment selection, and the air distribution system designed and installed in accordance with what is currently manual "K."
- c. Gas furnaces used shall be approved by the American Gas Association and bear the AGA seal of approval. Oil and electric furnaces and heat pumps shall be approved by Underwriters Laboratories and bear the UL seal of approval.
- d. Each individual room supply register shall be equipped with a damper and it shall be the owner's responsibility to so adjust them to achieve the room condition desired.
- e. The furnace blower must deliver rated air over the heating surface or cooling coil. In order for the blower to deliver acceptable rated air, clean filters must be installed by the owner as necessary every 30 days year round.
- f. There shall be sufficient air delivered to each Finished Room to maintain the condition described in the Acceptable Tolerance above. The builder shall have no responsibility to heat or cool any unfinished rooms. This condition can be maintained if provision is made to return air from each living level the same amount of air delivered to it, either by means of a return from each room or by undercutting the doors to provide free area equal to the supply register free area, or by means of a relief grille of such free area.

- g. The thermostat shall be located so that it reflects the true condition of the house. It should not be affected by extraneous sources of heat, such as open bathroom or kitchen doors, second floor heat risers or heat from lights. Nor shall it be located so that it can be affected by the radiant heat from a fireplace or sun heat through a window.
- h. If the heating installation does not maintain the conditions described above, the builder shall have it revised so that it does.

2. Problem

Ductwork noise.

Acceptable Tolerance

- a. When metal is heated it expands and when cooled it contracts. The result is "ticking" or "crackling" which is generally to be expected and shall be considered acceptable.
- b. Gauge of the metal used shall be such that supply ducts and plenums do not "oilcan." The booming noise caused by "oilcanning" is not acceptable.
- c. In the case of electric forced air heating systems (heat pump), a higher level of air noise is generally to be expected and shall be considered acceptable.
- d. With new 78% EFI Furnaces today there is a higher pitch noise from the motor start-up.

Builder Responsibility

The booming noise caused by "oilcanning" and ductwork "popping" noise is not acceptable and builder must take necessary steps to correct.

3. Problem

Insufficient cooling.

Acceptable Tolerance

The cooling system, if installed by the builder, shall maintain an inside temperature of 75 degrees F. when an outside temperature is 90 degrees F. Up to a 6 degree temperature difference in different rooms and from floor to floor is considered acceptable. Such temperature difference should only be measured in Finished Rooms.

Builder Responsibility

To correct cooling system to meet acceptable tolerance.

4. Problem

Noise generated by furnace or heat pump.

Acceptable Tolerance

Units should be rated in accordance with Air Conditioning and Refrigeration Institute Standard 270-84 (standard or sound rating - specific to individual manufacturer's equipment).

Builder Responsibility

Must assure that equipment conforms to above ARI Standard.

SECTION XII PLUMBING

1. Problem

Leakage of any kind of piping.

Acceptable Tolerance

No leaks of any kind should exist in any soil, waste, vent or water pipe except where soil pipe leaks due to flooded or inoperative septic system.

Builder Responsibility

Builder shall make necessary repairs to eliminate leakage.

2. Problem

Faucet leak or valve leak.

Acceptable Tolerance

No valve or faucet should leak because of defects in either material or workmanship.

Builder Responsibility

Builder shall repair or replace the leaking faucet or valve, unless leakage is due to a worn washer. Washer replacement is a homeowner's responsibility.

3. Problem

Fixtures do not hold water.

Acceptable Tolerance

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

Builder Responsibility

Builder to correct until fixture holds water to meet acceptable tolerance.

4. Problem

Chipped, warped, or defective plumbing fixtures and brass goods.

Acceptable Tolerance

In case of questions between owner and builder as to the seriousness of the defect, the fixtures should be inspected by the manufacturer's representative and judged according to their manufacturing standards.

Builder Responsibility

Builder may repair or replace any fixture or fitting which is outside acceptable standards as defined by the manufacturer. In the case of chipping, the builder may repair or replace

the fixture if the chipping is noted on the occupancy inspection. After occupancy the responsibility for chipped fixtures is the owner's.

5. Problem

Stopped-up sewers, fixtures, and drains.

Acceptable Tolerance

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

Builder Responsibility

Because sewers, fixtures, and drains can easily be clogged through the owner's negligence, builder shall make the necessary repairs to put the sewer in proper operating condition within the first 30 days of occupancy. However, if the problem which caused stoppage of the sewer can be shown to be due to owner's negligence, the owner shall assume the cost of repair.

6. Problem

Cracked laundry tubs.

Acceptable Tolerance

Laundry tubs should not leak.

Builder Responsibility

Builder has no repair responsibility on tubs unless the defect was noted on the occupancy inspection.

7. Problem

Noise in water pipes.

Acceptable Tolerance

There should be no objectionable water sounds, except those due to expansion, contraction or flow through the pipes. Water pressure exceeding 65 pounds per square inch may cause noise in water pipes.

Builder Responsibility

Builder should remove noise other than that due to expansion, contraction or the flow of water. If local water pressure exceeds 65 pounds per square inch, builder should provide a pressure reducing valve.

8. Problem

Sump pump does not operate.

Acceptable Tolerance

Sump pump should operate according to the manufacturer specifications.

Builder Responsibility

Builder shall repair or replace malfunctioning sump pump, as required.

9. Problem

Hose bibs damaged by freezing temperature.

Acceptable Tolerance

Hose bibs should not freeze if installed properly, providing the owner has removed the hose and any attachments from the spigot during the cold weather.

Builder Responsibility

Inspect the hose bib for proper installation. If installation was incorrect, replace hose bib. If installation was correct, builder responsibility is none.

SECTION XIII ELECTRICAL

Background

In reviewing this section, it is necessary to establish guidelines for proper usage of the electrical system. In order for the electrical system to perform properly, it is important that the system be used in the manner in which it was designed. For this reason, recognized electrical codes have established the following norms; ground fault current interrupters of GFCI protection is required at all sink areas (kitchen, wet bar, bathroom vanities), garages, unfinished basements and exterior outlets at ground level. Appliances using large amounts of current, such as freezers and refrigerators connected to these outlets may cause your GFCI to trip. A dedicated outlet for such appliance should be used. No more than 1500 watts per lighting circuit is allowed. Motors can be connected to lighting circuits provided the total wattage connected does not exceed the above limit.

Effective January 1, 2002, all new residential dwellings shall include the use of ARC Fault Circuit Interrupters (AFCI) on all bedroom circuits. AFCI breakers may trip due to worn electrical insulation, damaged wires or cords, or loose electrical connections.

Exceeding these guidelines may cause circuit breakers to trip. This tripping should not be viewed as a nuisance, but a warning that the circuit is overloaded.

It is the owner's responsibility to ensure that the circuits are not overloaded. If a service call to repair an electrical problem reveals that the problem is due to overloading by the owner, the owner shall pay for the service charge and any subsequent expenses.

1. Problem

Lights, switches and receptacles do not work.

Acceptable Tolerance

All lights, switches and receptacles shall work properly.

Homeowner Maintenance Responsibility

Check to see if outlet is on a switch. Check reset on GFCI outlets. Check circuit breaker. Check light bulbs.

Builder Responsibility

Repair wiring or replace defective lights, switches and/or receptacles to work properly.

2. Problem

Lights flicker in parts of residence.

Acceptable Tolerance

Lights may flicker or dim due to start of some appliances or motor driven equipment.

Builder Responsibility

Builder to check wiring for original equipment per manufacturer requirements and local building codes. Builder to repair wiring if not in conformity.

3. Problem

Fuses blow or circuit breakers kick out.

Acceptable Tolerance

Fuses and circuit breakers should not activate under normal usage, except in the case of GFCI outlets which are susceptible to moisture and/or weather conditions. No more than 1,500 watts per lighting circuit allowed.

Builder Responsibility

Inspect wiring to insure conformity with local electrical code requirements. Repair wiring if not in conformity. If problem is due to owner equipment or misuse, the owner shall pay for the service charge.

4. Problem

Lights flicker in entire residence.

Acceptable Tolerance

Lights should not flicker throughout entire residence at one time.

Builder Responsibility

If the local utility company is not the source of the problem, builder should then check internal wiring and repair as necessary.

Homeowner Maintenance Responsibility

Owner should first check with the local utility company for possible defects in supply sources.

5. Problem

Recessed electrical fixtures shut off.

Acceptable Tolerance

Recessed electrical fixtures are manufactured with a device that forces the unit off should overheating occur.

Builder Responsibility

Builder to inspect fixture for proper installation and repair as necessary.

Homeowner Maintenance Responsibility

Install replacement light bulbs that do not exceed recommended wattage by manufacturer for any fixture.

6. Problem
Light fixtures appear tarnished.

Acceptable Tolerance
Fixtures can tarnish and lose luster to their finish.

Homeowner Maintenance Responsibility
Maintain finish per manufacturer's recommendation.

Builder Responsibility
None. Exterior light fixtures will tarnish. Builder has no responsibility to correct.

SECTION XIV WATER INTRUSION AND MOLD

Background

Mold is a type of fungus. It occurs naturally in the environment, and it is necessary for the natural decomposition of plant and other organic material. Mold spreads by creating reproductive cells known as “spores.” Mold spores are airborne and can enter a home through open doors and windows, by attaching to a person’s skin, clothing or other belongings, or by attaching to the fur of a pet.

Residential home construction is not, and cannot, be designed to exclude mold spores from a home. If the growing conditions are right, mold spores can grow in your home. Most homeowners are familiar with mold growth in the form of bread mold, and mold that may grow on bathroom tile.

In order to grow, mold requires a food source. This might be supplied by items found in the home, such as fabric, carpet or even wallpaper, or by building materials, such as drywall, wood and insulation, to name a few. Also, mold growth requires a temperate climate. The best growth occurs at temperatures between 40° F AND 100° F. Finally, mold growth requires moisture. Moisture is the only mold growth factor that can be controlled in a residential setting. By eliminating water intrusion and by minimizing moisture, a homeowner can reduce or eliminate mold growth.

Moisture in the home can have many causes, spills, leaks, overflows, condensation and high humidity are common sources of home moisture. Good housekeeping and home maintenance practices are essential in the effort to prevent or eliminate mold growth. Moisture problems should be attended to immediately upon detection, because mold growth occurs within 24 to 48 hours if the conditions are favorable. Early detection will afford a homeowner a better chance of controlling the problem, and will cost significantly less to remedy.

The homeowner is responsible for periodically inspecting the home for plumbing leaks, caulking around windows and doors, visible evidence of excessive moisture or mold growth and performing routine maintenance on the home in order to keep the home in good repair and condition. The homeowner should contact the builder immediately if it appears that abnormal amounts of moisture are accumulating in the home, if a water leak is discovered or mold is found. The builder is not responsible for any damage resulting from the failure of the homeowner to promptly notify the builder of the presence of excessive moisture or mold once the homeowner is aware of such condition.

There is currently a debate as to whether exposure to mold may result in health problems. Infants, pregnant women, and persons suffering from allergies, compromised immune systems, or lung disease are reported to be most susceptible to adverse health effects. The federal government has not established standards for permissible indoor levels of mold. In light of the differing opinions, the safest and most prudent course of action is to treat all molds with caution and remove them from the house as soon as possible.

1. Problem

Moisture intrusion and/or resulting mold growth arising from defective construction on the part of the builder.

Builder Responsibility

Builder or builder's representative should visit the home and assess the origination of the problem in a timely manner. If the water intrusion and/or mold growth is a result of defective construction, the builder should promptly make repairs as necessary as determined by the builder. The homeowner is responsible for timely cooperation with the builder in order to allow the builder the opportunity to inspect the home and to make such repairs. Additionally, in the event of mold growth, remediation should be performed in accordance with professionally established standards.

2. Problem

Water intrusion and/or mold growth resulting from failure of homeowner to address routine maintenance of the home.

Builder Responsibility

There is no builder responsibility. Ongoing maintenance of a home is the responsibility of the homeowner, not the builder. If homeowner fails to properly maintain the home, then the builder is not responsible for any resulting damage. If mold growth has been discovered, it is recommended that the homeowner should contact a skilled professional to handle any mold removal.

3. Problem

Water intrusion and/or mold growth resulting from final grading performed by homeowner or landscaping installed by homeowner that adversely affects the water drainage established by the builder.

Builder Responsibility

There is no builder responsibility. If the homeowner makes improvements to the property and fails to take drainage issues into consideration, it is not the responsibility of the builder. Homeowner should consult with experienced professionals to perform final grading or re-establish proper drainage channels on the property. A skilled professional should also be consulted to address any resulting problems from water damage to the home.

INDUSTRY STANDARDS MANUAL



**Home Builders Association of Greater Cincinnati
415 Glensprings Drive
Cincinnati, OH 45246**