

Workmanship Standards *for* Licensed Contractors

JUNE 2009



MAIN OFFICE
1700 W. Washington St., Ste. 105
Phoenix, AZ 85007-2812
(602) 542-1525
TDD (602) 542-1588

Or Toll Free Within Arizona
1-877-MY AZROC (1-877-692-9762)

Visit Our Website at
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DOUGLAS A DUCEY
GOVERNOR

JEFF FLEETHAM
DIRECTOR

WEATHER STRIP AND THRESHOLDS

- 1. PD Drafts around doors and windows.
AT Some infiltration of moisture and dust is normally noticeable around doors and windows, especially during high winds and heavy rain. Excessive infiltration resulting from open cracks, poorly fitted doors and windows or poorly fitted weather stripping is unacceptable.
CR The contractor should adjust or correct open cracks, poorly fitted doors or windows or poorly fitted weather stripping. If necessary, the contractor should adjust or replace the weather stripping or threshold one time during the first year of occupancy.

- 2. PD Threshold leaks water.
AT None.
CR Contractor should make necessary repairs.

- 3. PD Weather strips missing or damaged on windows.
AT None.
CR Contractor should make necessary repairs.

- 4. PD Excessive gap between doors at T astragal on double doors.
AT None.
CR Contractor should make necessary repairs.

- 5. PD Weather strip missing at T astragal.
AT None.
CR Contractor should make necessary repairs.

**STATE OF ARIZONA
REGISTRAR OF CONTRACTORS**



FIELD OFFICES

FLAGSTAFF OFFICE
2501 N. 4th Street #22
Flagstaff, AZ 86004-3701
By appointment only
Call 1-877-692-9762

TUCSON OFFICE
400 W. Congress, Ste. 212
Tucson, AZ 85701-1311
(520) 628-6345

PHOENIX MAIN OFFICE

1700 W. Washington St., Ste. 105
Phoenix, AZ 85007-2812
(602) 542-1525 or Toll Free Within
Arizona 1-877-MY AZROC
(1-877-692-9762)

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THE MISSION OF THE REGISTRAR OF CONTRACTORS IS TO PROMOTE QUALITY CONSTRUCTION BY ARIZONA CONTRACTORS THROUGH A LICENSING AND REGULATORY SYSTEM DESIGNED TO PROTECT THE HEALTH, SAFETY, AND WELFARE OF THE PUBLIC.

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VENTS, LOUVERS AND TURBINES

1. PD Leaks at vents, louvers or turbines other than wind-driven rain.
 AT None.
 CR Contractor should make necessary repairs.
2. PD Turbines not vertical.
 AT None.
 CR Contractor should install jacks with proper pitch for roof upon which installed.
3. PD Vents in overhang not screened.
 AT None.
 CR Contractor should make necessary repairs.

WALLS, CURBS, FENCES, ETC.

1. PD Walls, curbs, fences, etc., do not perform the function for which they were designed.
 AT Walls, curbs, fences, etc., should be designed and built in accordance with established practices and applicable building codes in the area.
 CR Contractor should make necessary repairs.

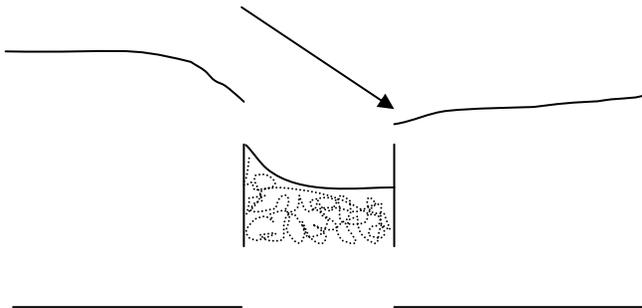
WATERPROOFING AND VAPOR BARRIERS

Waterproofing and vapor barrier requirements vary according to area. Check with the local building official about specific requirements and methods approved in that area.

1. PD Leaks in foundation or basement walls.
 AT None.
 CR Contractor should determine cause of leaks and make necessary repairs.
2. PD Leaks in conversation pit, or other areas designated to be constructed below floor level.
 AT None.
 CR Contractor should determine if leak is in foundation wall or chimney and make necessary repairs.
3. PD Leaks in gable end walls.
 AT None.
 CR Contractor should make necessary repairs.
4. PD Leaks through slump block walls.
 AT None.
 CR Contractor should make necessary repairs.

- 6. PD Limepops and cavities.
AT Limepops and cavities may be appropriately repaired if less than 1” in diameter, with no more than one repair per tile. Repaired tiles should not be excessive in number.
CR Contractor should repair limepops or cavities.
- 7. PD Grout discoloration.
AT Some discoloration is inherent in all Portland cement based products. Discoloration may occur due to jobsite conditions, individual characteristics of ceramic tile, variances in the rate of hydration, etc. Excessive grout discoloration is unacceptable. Contractor is not responsible for discoloration after the first year nor for discoloration caused by the use of waxes, sealers, cleaning solutions, etc., not applied or recommended by the contractor or manufacturer.
CR Contractor should make necessary repairs during the first year.
- 8. PD Missing or irregular grout.
AT None. Grout should be flush to the top edge of the adjacent tile.
CR Contractor should make necessary repairs.

Exposed vertical face of tile is unacceptable



- 9. PD Cracks of more than 1/16” at joints with dissimilar materials such as bath tubs.
AT None.
CR Contractor should correct one time within the first year.

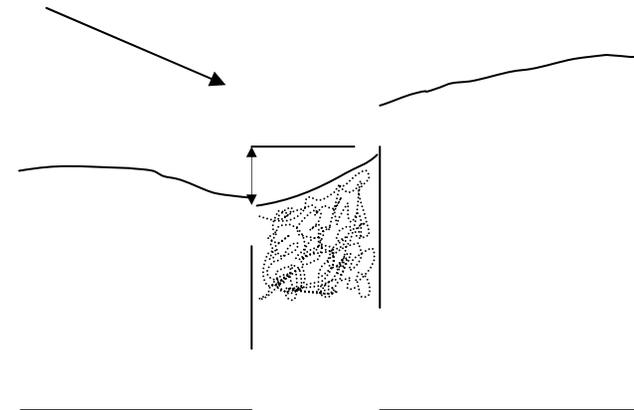
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1. PD Cracked tile.
AT None.
CR Contractor should make necessary repairs.
2. PD Loose tile.
AT None.
CR Contractor should make necessary repairs.
3. PD Hollow sounding tile.
AT Acceptable if not extensive and tile is solidly bonded to floor or slip-sheet.
CR Contractor should make necessary repairs.
4. PD Crooked, out of line tile.
AT Tile surface should be straight and reasonably flat, allowing for individual characteristics of the tile. Nominal centerline of all joints should be straight and even width, with due allowances for hand-molded or rustic tiles.
CR Contractor should make necessary repairs.
5. PD Uneven tiles.
AT Lippage of more than 3/16" is unacceptable. Inherent characteristics of the tile dictate the method of installation of the tile. All unusual characteristics of the tile should be explained to the owner or the owner's agent prior to installation.
CR Contractor should make necessary repairs.

Lippage of more than 3/16" is unacceptable



- CR Contractor should correct one time within first year.
- 4. PD Crooked, improperly cut or unevenly set tile.
AT None.
CR Contractor should make necessary repairs.
- 5. PD Shower floors and tubs do not slope to drain.
AT None.
CR Contractor should make necessary repairs.
- 6. PD Showers leaking through pan.
AT None.
CR Contractor should make necessary repairs.
- 7. PD Improper or omitted trim parts.
AT None.
CR Contractor should make necessary repairs.
- 8. PD Uneven tiles.
AT Inherent characteristics of the tile dictate the method of installation of the tile. All unusual characteristics of the tile regarding joint width and lippage should be explained to the owner or the owner's agent prior to installation.
CR Contractor should make necessary repairs.
- 9. PD Uneven Natural Stone Tile (Lippage)
AT Lippage of all manufactured Natural Stone Tiles are to be no greater than 1/32" between individual tiles
CR Contractor should make necessary repairs.
- 10. PD Grout discoloration.
AT Some discoloration is inherent in all Portland cement based products. Discoloration may occur due to job-site conditions, individual characteristics of ceramic tile, variances in the rate of hydration, etc.
Excessive discoloration is unacceptable. Contractor is not responsible for discoloration after the first year nor for discoloration caused by the use of waxes, sealers, cleaning solutions, etc., not applied or recommended by the contractor or manufacturer.
CR Contractor should make necessary repairs within the first year.

SALTILLO TILE AND UNGLAZED CLAY PAVERS

When an inadequate or defective substrate is present prior to installation of tile, the general contractor and/or the owner should be notified in writing by the tile contractor that a specific surface area is unacceptable for installation. Verifiable documentation that the potential problem was first submitted to the responsible party may relieve the installer of responsibility.

Irregularities in color, size and shape are normal inherent characteristics of Saltillo tile.

INTRODUCTION

These standards cover performance of those construction items of major concern to the buyer for the first two years of ownership, unless otherwise specified. The contractor should stand behind the product, but the buyer should be responsible for owner-maintenance items. Contractor responsibility under these standards should not extend to items which have been subject to owner neglect, modification or abnormal use.

The effective date for the start of coverage of these standards should begin with the close of escrow, when the buyer occupies the structure, or the date of discovery, whichever occurs first or as otherwise noted.

Defects in appliances and plumbing and electrical fixtures properly installed by the contractor should be limited to the manufacturer's warranty.

These standards are subject to revision as methods of construction or materials used in construction continue to change. If there is any conflict between the workmanship standards and building code requirements, the latter should prevail.

RULE 4-9-108 WORKMANSHIP STANDARDS

A. A contractor shall perform all work in a professional and workmanlike manner.

B. A contractor shall perform all work in accordance with any applicable building codes and professional industry standards.

C. All work performed by a contractor in a county, city, or town that has not adopted building codes or where any adopted building codes do not contain specific provisions applicable to that aspect of construction work shall be performed in accordance with professional industry standards.

DEFINITIONS

The following standards are expressed in terms of permissible tolerances. The format is designed for easy comprehension as follows:

PD Possible deficiency

A brief statement of the problem to be considered.

AT Acceptable tolerance

A statement in measurable terms above which repair may be required and below which the condition is considered to be acceptable. "None" means that the possible deficiency identified is completely unacceptable and no tolerance is allowed.

CR Contractor responsibility

A statement of the corrective action needed to correct the deficiency or damage.

A.C.I. means American Concrete Institute.

CMU means concrete masonry unit.

Substantial completion for swimming pools and spa interior cementitious finishes means 30 days from the day the pool/spa is filled with water and the equipment is in operation.

All other items on the pool equipment, such as decks, tile, pumps, etc., substantial completion means the date of the initial pool start-up.

GENERAL STATEMENTS

Contractor's responsibility on all manufactured surfaces is valid only if the damaged surface is indicated to the contractor or contractor's representative within 10 days after move-in.

Owner maintenance items include:

1. Adjustment of doors, windows and weather-stripping after the first year of occupancy.
2. Interior and exterior caulking (excluding roofing sealant) after the first year of occupancy.
3. Drips and leaks at faucets, hose bibs and other plumbing fixtures after the first year of occupancy or the expiration of manufacturer's warranty (whichever is longer) caused by normal wear of washers, seats or "O" rings.
4. Normal wear of the finish of household appliances, fixtures, painted surfaces or floor coverings.

When it is shown that any of the above items have been aggravated by the actions or inaction of the contractor, the contractor should assume responsibility for repair or replacement of these items.

AIR CONDITIONING AND HEATING

1. PD Inadequate heat.
AT Heating system should be capable of producing an indoor temperature of 70° as measured in center of room at 5' height under local outdoor winter design conditions as specified in ASHRAE Handbook (see J Manual tests as specified in ARI standards).
CR Contractor should correct the heating to provide the specified temperatures. The contractor should be responsible for balancing dampers, registers, and other minor adjustments one time for one season. Deficiencies caused by malfunction of system equipment or appliances are subject to the terms of the manufacturer's warranty unless workmanship by the contractor is involved.
2. PD Excessive noise from ducts.
AT Ducts should not rattle or "oilcan".
CR Contractor should determine cause and make necessary repairs.
3. PD Inadequate combustion air vent.

5. PD Uneven tile. (Lippage)
AT Inherent characteristics of the tile dictate the method of installation. All unusual characteristics of the tile should be explained to the owner or the owner's agent prior to installation.
CR Contractor should make necessary repairs.
6. PD Uneven Natural Stone Tile (Lippage)
AT Lippage of all manufactured Natural Stone Tiles are to be no greater than 1/32" between individual tiles
CR Contractor should make necessary repairs.
7. PD Grout discoloration.
AT Some grout discoloration is inherent in all Portland cement based products. Discoloration may occur due to jobsite conditions, individual characteristics of ceramic tile, variances in the rate of hydration, etc.
CR Excessive grout discoloration is unacceptable. Contractor is not responsible for discoloration after the first year nor for discoloration caused by the use of waxes, sealers, cleaning solutions, etc., not applied or recommended by the contractor or manufacturer.
CR Contractor should make necessary repairs during the first year.
8. PD Missing or irregular grout.
AT None.
CR Contractor should make necessary repairs.
9. PD Cracks of more than 1/16" at joints with other dissimilar materials such as bath tubs.
AT None.
CR Contractor should correct one time within the first year.

CERAMIC AND NATURAL STONE WALL TILE

When an inadequate or defective substrate is present prior to installation of tile, the general contractor and/or the owner should be notified in writing by the tile contractor that a specific surface area is unacceptable for installation. Verifiable documentation that the potential problem was first submitted to the responsible party may relieve the installer of responsibility.

1. PD Ceramic tile cracks or becomes loose.
AT None.
CR Contractor should make necessary repairs.
2. PD Missing or irregular grout.
AT None.
CR Contractor should make necessary repairs.
3. PD Cracks of 1/16" or more at joints or with other dissimilar materials such as bath tubs.
AT None.

- AT Tile should be level within a tolerance of + or – 1/4" from level at time of substantial completion.
- CR Contractor should make necessary repairs.

SWIMMING POOLS - WATER QUALITY

- 1. PD Water is not clear because circulation and filtration equipment provided do not meet the design requirements specified in the NSPI design standards.
 - AT None - Complete written operating instructions should be provided owner along with verbal instructions.
 - CR Contractor should evaluate owner's water quality problem, provide instructions covering equipment furnished and provide up to one hour verbal assistance including time spent on owner water samples and make necessary repairs.
- 2. PD Poor surface skimming or circulation.
 - AT Inlets, skimmers, main drains, etc., should be provided and installed in accordance with the appropriate NSPI design standard. Written operating instructions should be provided owner.
 - CR Contractor should make necessary repairs.

TILE

CERAMIC AND NATURAL STONE FLOOR TILE

When an inadequate or defective substrate is present prior to installation of tile, the general contractor and/or the owner should be notified in writing by the tile contractor that a specific surface area is unacceptable for installation.

- 1. PD Cracked tile.
 - AT None.
 - CR Contractor should make necessary repairs.
- 2. PD Loose tile.
 - AT None.
 - CR Contractor should make necessary repairs.
- 3. PD Hollow sounding tile.
 - AT Acceptable if not extensive and tile is solidly bonded to floor membrane.
 - CR Contractor should make necessary repairs.
- 4. PD Crooked, out of line tile.
 - AT Tile surface should be straight and reasonably flat, allowing for individual characteristics of the tile. Nominal centerline of all joints should be straight and even width, with due allowances for hand-molded or rustic tiles.
 - CR Contractor should make necessary repairs.

- AT Combustion air should be according to manufacturer's specifications.
- CR Contractor should make necessary repairs.

- 4. PD Unit too close to door.
 - AT As established by code or manufacturer.
 - CR Contractor should make necessary repairs to provide clearance specified by code or as recommended by the manufacturer of unit.
- 5. PD Improper clearance to change filters.
 - AT Filter should be easily accessible.
 - CR Contractor should make corrections to allow easy removal of filter.
- 6. PD Air conditioner does not adequately cool structure.
 - AT Unit should cool structure 30° (32° in Scottsdale) lower than outside air temperature when measured in center of room at 5' height. Minimum indoor temperature should be 78°.
 - CR Contractor should make proper repairs or adjustments to meet temperature conditions.
- 7. PD Equipment fails.
 - AT None.
 - CR Contractor should correct deficiency if within one year or within limits of manufacturer's warranty.
- 8. PD Condensate lines broken, incomplete or improperly routed.
 - AT None.
 - CR Contractor should make necessary repairs.
- 9. PD Water leaking into distribution system, return air or supply system.
 - AT None.
 - CR Contractor should make necessary repairs.

CABINETS AND VANITIES

It should be noted that it is not unusual for the color of installed cabinets to be slightly different from the samples shown at the time of selection. Color can differ with wood grain variations and stain lots. Excessive variation is not acceptable.

- 1. PD Cabinet malfunctions.
 - AT Cabinet doors, drawers and other operating parts should function properly. A warp of 1/8" in 30" is considered acceptable.
 - CR Contractor should repair, adjust or replace operating parts as required within first year.
- 2. PD Cabinet doors not at same height.
 - AT Tops of cabinet doors must be in the same horizontal plane, within 1/8".

- CR Contractor should adjust doors to meet above standard once within first year.
- 3. PD Voids or open knots on outside of cabinet.
- AT Voids or open knots should not be on outside of cabinet unless special effect is requested.
- CR Contractor should repair or replace.

CARPENTRY

CARPENTRY - FINISH - (EXTERIOR)

Due to varying moisture conditions throughout Arizona, wood products will continue to expand and contract. This action is normal and beyond the contractors control.

- 1. PD Crooked, warped facias.
- AT Excessively crooked or warped facias are unacceptable.
- CR Contractor should repair or replace one time within first year.
- 2. PD Wavy or improperly supported soffits.
- AT Soffits should be reasonably straight, properly supported and nailed.
- CR Contractor should make necessary repairs.
- 3. PD Trim omitted at juncture of soffit to wall when specified.
- AT None.
- CR Contractor should install proper trim per plans and specifications.
- 4. PD Shingle mold crooked, improperly nailed.
- AT Shingle mold should follow line of facia and be nailed securely to facia.
- CR Contractor should make necessary repairs.
- 5. PD Door casing, window casing or brick mold loose, out of square or does not fit.
- AT Door, window trim and brick mold should fit, be square and securely attached.
- CR Contractor should make necessary repairs.
- 6. PD Corner boards too short or loose.
- AT Corner boards should be of proper length and securely attached.
- CR Contractor should make necessary repairs.
- 7. PD Hammer marks on trim.
- AT Un-repaired hammer marks are unacceptable.
- CR Contractor should make necessary repairs.
- 8. PD Spliced barge rafters.

These cracks are not structural cracks; they penetrate only the surface area (per ASTM C-42-61 specifications). Proper care and curing can keep this problem minimal. To minimize the shrinkage cracks the gunite must be kept moist. Gunite is porous and has the ability to absorb a large volume of water, much like a sponge. The gunite should be saturated with water until it is no longer absorbed. This process should be repeated every two hours during the day for five days after installation. The structure along with the interior lining should form a single waterproof unit.

- CR Contractor should make necessary repairs.
- 2. PD Structure is cracked, torn or otherwise separated.
- AT None - The structure should not crack, tear or separate and should be designed to withstand all normally anticipated loads or stresses.
- CR Contractor should make necessary repairs.
- 3. PD Pool/spa is unlevel.
- AT At the time of substantial completion of the work, the pool/spa should be within +/- (plus or minus) 1/4" (1/2" of level - from high to low) when measured at the waterline tile. In the absence of such tile or when a vinyl lined interior is used or the unit is a one-piece fiberglass pool, water level should be +/- 1/2" (1" of level from high to low) when measured at the uppermost surface of the structure.
- CR Contractor should make necessary repairs.
- 4. PD Exterior and/or interior contours of irregular shape and/or profile.
- AT All designs should be in accordance with the applicable NSPI standards and all workmanship should be within the construction tolerances allowed therein.
- CR Contractor should make necessary repairs.
- 5. PD Pool shell or liner floats when pool water is removed.
- AT Pools are designed to remain relatively full of water. At time of substantial completion, written instructions covering this, as well as how to drain the pool should be furnished with instructions on who to contact should additional information or help be desired.
- CR Contractor should make necessary repairs.

SWIMMING POOLS - TILE

- 1. PD Ceramic tile cracks or becomes loose.
- AT None.
- CR Contractor should make necessary repairs.
- 2. PD Cracks appear in grout or grout becomes loose.
- AT Checks in grouting are normal shrinkage conditions and should be maintenance responsibilities of the owner.
- CR Contractor should repair loose grouting or cracks in grouting one time within the first 12 months.
- 3. PD Tile out of level.

- A. In mild freezing climates contractor should design the system so that by circulating the water all components and pipes are protected.
 - B. In moderately severe climates, the piping should be placed below the frost line and the equipment placed in a heated area.
 - C. As an alternate for severe climates all piping and equipment subject to freezing should be capable of being conveniently drained.
- CR Contractor should instruct owner of the method of freeze protection designed into system and should repair/replace freeze damage caused by an improperly installed system.

SWIMMING POOLS - SOLAR HEATERS - MECHANICAL

- 1. PD Solar pool heating collectors or plumbing damaged by freezing during a power failure.
- AT Solar pool heating systems should be equipped with a fail-safe diversion valve allowing collectors to drain. Valve should return to an open position during a power failure or equipment malfunction.
- CR Contractor should make necessary repairs.

SWIMMING POOLS - SOLAR HEATERS - ON THE BUILDING

- 1. PD Roof leaks due to improper penetration and/or sealant.
- AT None - Protection against water penetration around solar components or tie down penetrations should be in accordance with local building codes. Properly tested roof sealant should be used per collector manufacturer's recommendation, so as not to interfere with the integrity of the existing waterproof membrane.
- CR Contractor should make necessary repairs.
- 2. PD Roof leaks where supply and return piping penetrate eaves.
- AT None – Holes made for pipes to penetrate eaves should be protected by roof jacks (flashing material), so as not to interfere with the integrity of waterproof characteristics of the roof membrane.
- CR Contractor should make necessary repairs.
- 3. PD Roof under solar collectors showing signs of deterioration (rot).
- AT None - All solar pool heaters should be installed in such a way as to not encourage premature roof deterioration.
- CR Contractor should make necessary repairs.

SWIMMING POOLS - STRUCTURE

- 1. PD Will not hold water.
- AT None – Shotcrete or gunite shrinks, as there is a drying out of the original moisture content. Shrinkage cracks occur because the surface of the gunite dries out faster than the underlying layers.

- AT Long barge rafters may be spliced by approved methods, but splice should not separate or sag more than 1/8".
- CR Contractor should make necessary repairs.
- 9. PD Exterior (including garage doors) warping, splintering, shrinking and exposing unfinished areas.
- AT Exterior doors should be sealed on all six sides and finished per specifications.
- CR Contractor should repair and refinish as necessary one time within the first year.

CARPENTRY - FINISH - (INTERIOR)

- 1. PD Poor workmanship on interior trim.
- AT All joints on molding, casing, etc., should fit and be securely attached, as well as properly filled and sanded.
- CR Contractor should make necessary repairs.
- 2. PD Pocket door rubs against frame or casing.
- AT Door units should be installed square and plumb with proper guides, hang evenly in frame and work smoothly.
- CR Contractor should adjust pocket door one time within the first year.
- 3. PD Bypass sliding doors uneven.
- AT Bypass door units should be installed square and plumb with proper guides, hang evenly in frame and work smoothly.
- CR Contractor should repair and/or adjust properly, one time within the first year.
- 4. PD Exposed nails on trim.
- AT Nails on trim should be installed properly.
- CR Contractor should make necessary repairs.
- 5. PD Doors bind or rub against jamb.
- AT Doors should clear 1/8" at top and sides.
- CR Contractor should make necessary repairs one time within first year.
- 6. PD Door will not stand open.
- AT Doors should not move to open or closed when 45° to opening.
- CR Contractor should make necessary repairs.
- 7. PD Interior or exterior door warped.
- AT Warping more than 1/4" when measured in any direction is unacceptable.
- CR Contractor should replace warped door and finish to match existing doors one time within first year.

CARPENTRY - FRAMING

Framing lumber should meet lumber industry standards.

1. PD Floors squeak or sub-floor appears loose.
AT Floors and subfloors should not have excessive squeaks or be loose.
CR Contractor should make necessary repairs.
2. PD Wood or metal framed floors uneven or out of level.
AT Unevenness of floor should not exceed 3/16" in 48". Floors should be level within 1/2" in any 12'.
CR Contractor should make necessary repairs.
3. PD Walls not straight or not plumb.
AT Walls should be straight within 1/4" and plumb within 1/4" measured from floor to ceiling at corners.
CR Contractor should make necessary repairs.
4. PD Walls not 90° angles to each other.
AT Walls should be perpendicular within 1/4" in 10'.
CR Contractor should make necessary repairs.
5. PD Rough openings for doors and windows are not properly dimensioned, plumb and level.
AT The rough openings should satisfy the manufacturer's recommendations.
CR Contractor should repair to assure that openings are structurally sound, plumb, level and properly sized.
6. PD Warped or twisted studs or ceiling joists.
AT Stud walls and ceilings should be flat and not bulge more than 3/8" in 8'.
CR Contractor should make necessary repairs.
7. PD Twisted or warped interior and exterior posts or beams.
AT Beams or posts should not twist more than 1/16" per foot of 4" x 12" descending ratio as follows:

4" x 12", 1/16" twist per foot, 1 1/4" total allowable
4" x 6", 1/32" twist per foot, 9/16" total allowable
4" x 4", 1/40" twist per foot, 1/2" total allowable

Warpage or twisting should not damage beam pocket.
CR Contractor should make necessary repairs.
8. PD Cracked interior beams.
AT Cracks in finished interior beams, which do not affect structural integrity, are acceptable if repaired.
CR Contractor should make necessary repairs.
9. PD Improper crickets.

continuing problem due to poor workmanship. The owner should be responsible for any grass; shrubs or other landscaping affected by placement of such fill.

2. PD Standing water.
AT At time of substantial completion the necessary grades and swales should have been established to insure proper drainage away from the improvements. Site drainage is limited to the immediate grades and swales affecting the improvements. No standing or ponding of water should remain in this immediate area after a rain, except swales, which may drain other areas after a rain.
CR The contractor should establish the proper grades, elevations and swales and the owner should maintain such grades and swales after substantial completion.
3. PD Site cleaning, leveling, trench backfilling not satisfactory.
AT All construction debris should be removed. Site contours should be graded so that they may be mowed with normal equipment, rocks and boulders removed and/or covered with suitable topsoil (or if impractical, so designated in the pre-construction plans).
CR Contractor should provide a one-time site clean up and grading prior to substantial completion.
4. PD Irregular contours in site and/or drainage passages.
AT Site drainage should, if carried on the surface of the ground, be carried in swales of cross sectional contours easily mowed with normal equipment.
CR Contractor should correct as necessary.

SWIMMING POOLS - SOLAR HEATERS

Plumbing lines in solar pool heaters should not have mineral build up with normal water and contractor is not liable for mineral build up due to water conditions and/or chemical imbalance.

1. PD System does not perform properly.
AT Solar equipment should be covered by a written manufacturer or contractor's performance warranty delivered to owner prior to or at substantial completion of the work.
CR Contractor should make necessary repairs.
2. PD Equipment not properly secured, level or plumb.
AT Collectors, pipes, conduits, etc., should be secured and adequately braced. Piping and collectors should be level and plumb wherever possible.
CR Contractor should make necessary repairs.
3. PD Solar collectors and/or system have no freeze protection.
AT The collectors and related piping system should be designed and installed so as to provide freeze protection.

5. PD Water pipes or equipment have no freeze protection.
 AT Contractor should provide freeze protection for pipes and equipment.
 A. In mild freezing climates contractor should construct the system so that by circulating the water all components and pipes are protected.
 B. In moderately severe climates the piping should be placed below the frost line and the equipment placed in a heated area.
 C. As an alternate for severe climates all piping and equipment subject to freezing should be capable of being conveniently drained.
 Contractor should instruct owner of the method of freeze protection designed into system. The owner should insure said method is properly carried out during freezing weather.
 CR Contractor should make necessary repairs.
6. PD Clogged suction line.
 AT Suction lines to the recirculating pump should not be stepped down in size on the way to the pump except at equipment connection. Openings from the suction line into the pool/spa should be covered by suitable grates, screens, etc., to keep large objects from entering.
 CR Contractor should make necessary repairs.
7. PD Pump will not prime.
 AT Pool/spa pumps should not require an owner to do more than fill certain components with an open garden hose, seal such openings, operate the necessary valves and turn the system on.
 CR Contractor should design and install a system to accomplish the standard.
8. PD Mechanical components damaged by system vacuum.
 AT Mechanical components should be installed in such a way that a normally created vacuum in system will not cause damage to any of the mechanical equipment.
 CR Contractor should make necessary repairs.
9. PD Difficulty in servicing mechanical and electrical components.
 AT Pool/spa mechanical and electrical components should be installed in a manner that allows normal access for ease of servicing.
 CR Contractor should make necessary repairs.

SWIMMING POOLS - SITE WORK

1. PD Settling of ground around the improvement, utility trenches or other filled areas.
 AT Settling should not interfere with water drainage away from the improvements.
 CR Contractor should fill excessively settled areas one time during the 12-month period following substantial completion unless there is a

- AT None - Crickets must be constructed to provide proper drainage.
 CR Contractor should make necessary repairs.
10. PD Roof holds water.
 AT Minor ponding (up to 1/2" deep in small areas equivalent to no more than 1/3 of span) is acceptable providing roof is dry within 48 hours after rainfall.
 CR Contractor should make necessary repairs.
11. PD Scuppers installed too high.
 AT Scuppers should be installed low enough to drain roof.
 CR Contractor should be responsible for repairing or replacing improperly installed scuppers.

CARPET

Tackless carpets should be tightly stretched and securely attached to the tack strip at all perimeters. Bubbles or ripples should not be visible in the carpet.

Seams should be of a good appearance from a standing position; however, seams normally have some visibility.

Some of the contributing factors to seam visibility are:

Peaking - Due to the additional thickness of the seam tape and the action of the heat from the seaming iron, slight peaking can occur at the seam. This will be particularly apparent in lower profile and velvet type textures.

Textures - Various textures have an effect on seam visibility. Loop pile, loop pile berber and dense velvet finishes will generally create more visible seams than other textures.

Contractors who install carpeting should resolve problems regarding manufacturing defects with the manufacturer on behalf of the owner if the contractor was responsible for the sale and or selection of the carpeting.

1. PD Pile crushing in new installations.
 AT Some pile crushing is not uncommon when the installation is new. This will normally self correct within 90 days.
 CR If severe crushing persists after 90 days, carpet should be replaced.
2. PD Excessively visible seams.
 AT Seams should be tightly fitted with no gaps or overlaps in the seam.
 CR Contractor should remake seam if gaps or overlaps are present.
3. PD Defective materials.
 AT None.
 CR Defective materials should be replaced.
4. PD Carpet seams placed in "T" configuration.

- AT Carpet seams placed in "T" configuration are unacceptable except where other methods are impractical.
- CR Contractor should correct seam or replace affected area.

CONCRETE

This section applies to standard steel troweled or light broom finishes. Specialty finishes are not included.

Settling or heaving of soils under concrete caused by alteration of grades by owner or owner's agent, which create excessive ponding or moisture adjacent to concrete foundations, walks, drives, slabs, or patios, should not be considered the contractor's responsibility providing the contractor has met all the conditions called for in the contract, plans, specifications, and all code requirements.

The contractor should be responsible to correct or ensure correction of settling or heaving if compaction is not according to the licensed soils engineer's report or if no alterations have been made by owner or owner's agent.

All concrete should be placed in compliance with applicable codes and standards. This will apply to design strengths, testing, dimensions, frost lines, and reinforcement along with items not specifically contained in the codes, such as proper placement in a good and workmanlike manner to achieve appearance and function of the finished product.

CONCRETE – EFFLORESCENCE

The potential for efflorescence exists in all portland cement-based products. Efflorescence is a salt that is left on the surface of concrete upon drying and is generally of only cosmetic concern in nature. It often dissipates with contact with water or the passage of time. Efflorescence that is severe, recurring, or accompanied by degradation of the concrete surface may indicate the application of excessive moisture, an elevated concentration of salts in the applied water, numerous cycles of wetting and drying and/or a more substantial presence of salts within the surrounding environment.

NATURAL CONCRETE – COLOR AND SHADE VARIATIONS

Color and shade variations are inherent in all portland cement-based products. These variations may occur and are generally acceptable. These differences can be attributed to a wide variety of causes. Some causes include variable jobsite conditions and changes in aggregate source, age, degree of curing, and specified slab substrate.

POST – TENSION

Cracking in a post-tensioned slab is normal, and often post-tensioned slabs exhibit fewer cracks in number but, hairline cracks are not uncommon. The purpose of the steel cable is to improve the structural performance of the slab and foundation system, per the structural engineer's design, often to improve performance on expansive or weaker soils. The post-tensioned slab and foundation system is designed to act as an integral unit, distributing its own weight and the loads it carries uniformly into the supporting soils.

- CR Contractor should make necessary repairs.

- 2. PD Wrinkles or folds of material.
- AT At the time of substantial completion of the pool, the liner should be as wrinkle free as possible and should have no folds.
- CR Contractor should reset liner to eliminate excessive wrinkles and folds at substantial completion.
- 3. PD Tears or cuts in vinyl liner.
- AT At the time of substantial completion, the interior lining should form a single waterproof unit. The interior lining should be designed to provide for patching (sealing) of the vinyl liner with similar vinyl material and adhesive.
- CR Contractor should make necessary repairs and contractor should carry out all liner warranties.

SWIMMING POOLS - MECHANICAL

- 1. PD Mechanical and/or electrical equipment supplied and installed does not perform correctly.
- AT All equipment supplied should be covered by a manufacturer's warranty delivered to owner prior to or at the time of substantial completion of the work.
- CR During the first 30 days following substantial completion of the work contractor should carry out all manufacturer's equipment warranties at the site of the installation. Thereafter, any manufacturer's warranties should be carried out at contractor's place of business.
- 2. PD Water, gas and waste lines do not function properly or are not installed in accordance with established trade practices or codes.
- AT None - Water, gas and waste lines should be of adequate size and installed in accordance with established trade practices and applicable building codes.
- CR Contractor should make necessary repairs.
- 3. PD Mechanical equipment not level or plumb.
- AT All mechanical equipment supplied and installed by contractor should be done so that the completed appearance of the system(s) and piping are level and plumb whenever possible.
- CR Contractor should make necessary repairs.
- 4. PD Water leaks from equipment or piping.
- AT All mechanical equipment and related components and piping should be air and water tight in the range of 1.5 times the normal operating pressure.
- CR Contractor should make necessary repairs.

4. PD Rough plaster and highlighting.
 AT Contractor should provide an acceptable plaster finish before substantial completion. At the time of the substantial completion inspection, owner should advise contractor of any unacceptable plaster roughness, irregularities or highlighting.
 CR Contractor should provide an acceptable plaster finish before substantial completion. After substantial completion the contractor should not be responsible for plaster roughness caused by mineral deposits on pool surface and stains and/or roughness caused by pool water chemicals.
5. PD Trowel burns.
 AT None.
 CR Contractor should one time within the first ninety- (90) days following substantial completion remove all trowel burn discoloration.
6. PD Excessive shading or mottling.
 AT At the time of substantial completion, owner should notify contractor of any excessive shading or mottling of the plaster finish. Minor shading or mottling of the plaster finish is acceptable. (NOTE: Colored plaster finishes may have an even more pronounced degree of shading or mottling because of factors inherent in colored finishes. Normal variations in pool water chemistry and ultraviolet action will cause some discoloration or shading of the plaster finish after completion and is considered normal. Calcium or alkali may precipitate out of pool water onto the plaster surface causing discoloration or roughness.)
 CR Contractor should make necessary repairs.
7. PD Spot etching at or prior to substantial completion.
 AT The owner should notify the contractor of any spot etching at substantial completion. Contractor should provide an acceptable plaster finish prior to substantial completion.
 CR After substantial completion, contractor should not be responsible for spot etching caused by water chemistry.
8. PD Calcium or whiteness on colored plaster or that has settled in checks or crazing cracks.
 AT This is a normal occurrence. It is noticeable on colored plaster because of the color contrast. Contractor should provide an acceptable plaster finish at substantial completion.
 CR After substantial completion, the contractor should not be responsible for plaster discoloration or stains on pool surfaces caused by water chemistry.

SWIMMING POOLS - INTERIOR FINISH - VINYL LINER

1. PD Liner comes loose from fastening around top of pool.
 AT None.

CONCRETE - FREEZE (OR FROST) LINES ZONE 2 + 3

In areas above 3000', ft. elevation concrete should be air entrained according to A.C.I. specifications for the aggregate size of the concrete being placed. It is recommended that denser concrete be placed to offset the effects of freeze and thaw along with placing the concrete below the freeze line. The freeze line will vary with the elevation. Recommended depths are as follows:

Elevation	3000-4999 Ft.	18"
Elevation	5000-6999 Ft.	24"
Elevation	7000-8000 Ft.	36"

Check with local building officials for required depth in the area where the construction is planned.

1. PD Cracks in "cast in place" concrete stems..
 AT Cracks wider than 1/8" should be properly repaired with appropriate material. Cracks over 1/4" indicate the possibility of settlement, heaving or other failure.
 CR Contractor should properly fill cracks with appropriate materials over 1/8" but less than 1/4". If cracks are 1/4" or wider, contractor should determine the cause and make proper repairs. Repairs should be made near the end of first year to allow the building to stabilize.
2. PD Cracks in basement floors.
 AT Cracks in excess of 3/32" width or 1/8" vertical displacement or compound cracks in excess of 1/16" in width are not acceptable.
 CR If vertical displacement in excess of 1/8" or compound cracking in excess of 1/16" in width is present, affected area should be replaced.
3. PD Cracking of garage slabs, carports, exterior slabs, patios, driveways and sidewalks.
 AT Cracks in excess of 3/32" width or 1/8" vertical displacement or compound cracks in excess of 1/16" in width are not acceptable. Cracks of 3/16" are acceptable for sidewalks.
 CR If cracks in excess of 3/32" width are present (3/16" for sidewalks), or compound cracking is in excess of 1/16" in width, or vertical displacement exceeds 1/8"; the affected areas are to be replaced.
4. PD Patio or carport slab cracking at columns.
 AT Half moon cracking at column base is unacceptable.
 CR Contractor should make necessary repairs.
5. PD Settling or heaving of stoops or steps.
 AT Settlement or heaving more than 1/4" is unacceptable.
 CR Contractor should make necessary repairs.

6. PD Spalling or pitting of concrete.
 AT Concrete should not deteriorate to the extent that the aggregate is exposed or the aesthetics are destroyed under normal use and weather conditions.
 CR Contractor should take corrective action necessary to repair or replace defective areas. Contractor should not be responsible for damage caused by chemicals applied by others.
7. PD Ponding or standing water on garages, patios, stoops, carports, walks and driveway concrete surfaces.
 AT Water should drain. Standing water exceeding 3/32" is unacceptable. Standing water exceeding 3/16" on driveways is unacceptable. Flood, wait 30 minutes and then check for ponding.
 CR Contractor should make necessary repairs.
8. PD Improper expansion and/or control joints in driveways.
 AT Driveways should have expansion joints at carport or garage and at curb or sidewalk. Control joints at least 1/5 the thickness of the slab should be placed no more than 10' apart.
 CR Contractor should correct to provide proper control or expansion joints.
9. PD Cracks in control joints.
 AT Concrete should crack in control joints. Cracks exceeding 3/8" are excessive.
 CR Contractor should make necessary repairs.
10. PD Uneven or wavy floors.
 AT Floors should not vary from flat more than 1/4" over a 10' area provided the deviation is gradual. Deviations, dips, or sags over short distances and easily visible to the eye may be considered unacceptable.
 CR Contractor should make necessary repairs.
11. PD Floors not level.
 AT Floors should be level within 1/4" in any 12' run.
 CR Contractor should make necessary repairs.
12. PD Corners chipped or broken during construction.
 AT Chipped or broken corners in concrete may occur during construction. These chips and broken corners are unacceptable at move-in.
 CR Contractor should make necessary repairs.
13. PD Different elevations between slabs.
 AT Vertical displacement between two adjacent slabs should not be a trip hazard.
 CR Contractor should make necessary repairs.

- AT None.
 CR Contractor should make necessary repairs.
2. PD Erratic performance.
 AT None - All electrical circuits, controls, etc., should be installed to meet the requirements of the N.E.C. and local electrical codes.
 CR Contractor should make necessary repairs.

SWIMMING POOLS - INTERIOR FINISH - FIBERGLASS/ACRYLIC

1. PD Finish has hairline cracking, checking or blistering.
 AT None.
 CR Contractor should make necessary repairs.

SWIMMING POOLS - INTERIOR FINISH - FIBERGLASS/ACRYLIC/PAINTED

1. PD Black spots, bubbles, surface separation or imperfections.
 AT None.
 CR Contractor should make necessary repairs.

SWIMMING POOLS - INTERIOR FINISH - PLASTER

Colored plaster: It is the nature of colored plaster to accentuate characteristics normally found in white pool plaster. Mottling can be more pronounced, the plaster may exhibit pigment stains, streaks, fade out or get gradually lighter and the color shade may not be exactly as anticipated.

It is recommended the contractor advise the pool owner of these characteristics prior to finalizing the contract.

1. PD Cracks, tears that allow water passage out of the pool/spa.
 AT None - The structure along with the interior lining should form a single waterproof unit.
 CR Contractor should make necessary repairs.
2. PD Hairline checks and crazing or cracks in plaster.
 AT Owner should provide the water and allow the pool to be filled upon completion of plaster finish. Hairline checks and crazing that may appear in plaster are normal. Plaster cracks that appear within the first 12 months of substantial completion are unacceptable.
 CR Contractor should make necessary repairs.
3. PD Rust stains.
 AT There should be no rust stains in plaster finish occurring from reinforcing steel, tie wires or other contractor-installed components.
 CR Contractor should remove rust stains and remedy reason for occurrence matching the repair area with rest of surface as close as possible. Contractor is not responsible for rust stains caused by objects placed in pool by others.

- 3. PD Irregular appearance and/or finish.
- AT All concrete deck work should be equivalent to any sample or display of that finish displayed to owner. In the absence of a display sample, owner and contractor should rely upon the standards of quality found in similar work in the area.
- CR Contractor should provide at least the consistency of workmanship called for in the standard. Colors should match as closely as reasonably possible.

SWIMMING POOLS – DECKS - EQUIPMENT

- 1. PD Deck equipment such as slides, diving boards, ladders; etc., installed with the pool/spa are either loose, not level or plumb.
- AT None - Deck equipment supplied and installed as part of the work should be securely anchored, mechanically firm as a unit and installed in a true, level and aligned fashion.
- CR Contractor should make the necessary changes and/or corrections to installation of the equipment to comply with the standards.

SWIMMING POOLS - DECKS - WOOD

- 1. PD Finished product does not match plans.
- AT A scale drawing of top and side of deck in relationship to pool/spa and structure, should be supplied to owner prior to start. The decking should match within reason the scale drawing.
- CR Contractor should make necessary repairs.
- 2. PD Decking sags, has excessive springiness or motion when in use or otherwise provides an unstable structure.
- AT At time of substantial completion, decking should be firm and stable in normal use.
- CR Contractor should make necessary repairs.
- 3. PD Loose or rusty nails, splintered or split boards, excessive loose knotholes.
- AT During a period of thirty days following substantial completion, the deck should not exhibit any of the above deficiencies.
- CR Contractor should make necessary repairs.

SWIMMING POOLS - ELECTRICAL

POTENTIALLY HAZARDOUS SITUATIONS SHOULD BE CORRECTED IMMEDIATELY.

- 1. PD Electrical boxes, conduits, disconnects or equipment not level or plumb.

- 14. PD Excessive crazing of finished exterior concrete surfaces.
- AT None.
- CR Contractor should make necessary repairs.

- 15. PD Improper, inadequate, unsightly finishing.
- AT None.
- CR Contractor should make necessary repairs.

- 16. PD Frozen or frost bitten concrete.
- AT None.
- CR Contractor should make necessary repairs.

- 17. PD Pop-outs in concrete slabs.
- AT Minor pop-outs are acceptable if repaired. Slabs with an excessive amount of pop-outs are unacceptable.
- CR Contractor should make necessary repairs.

- 18. PD Post-tension cable design.
- AT Review by designing structural engineer.
- CR Follow the direction of the structural engineer.

COUNTERTOPS

LAMINATED

High Pressure Decorative Laminate and its substrate are usually wood-based products, which typically expand and contract with humidity. In order to maintain long lasting, functional, and aesthetic usage, it is necessary to practice regular maintenance. Heat-generating appliances should not be placed on or near seams and/or joints. Moisture should never be allowed to stand on seams and/or joints for more than 24 hours.

- 1. PD Scratches and chips in laminate.
- AT Scratches that cannot be seen looking straight down at a distance of 12" nor felt with fingernail are considered acceptable. Notable scratches or chips should be reported on walk thru or within 10 days after move-in.
- CR Contractor should repair or replace as necessary.

- 2. PD Tops bowed or warped.
- AT Bow or warp should not exceed 1/16" per lineal foot.
- CR Contractor should repair or replace as necessary.

- 3. PD Defects or flaws in plastic laminate.
- AT None.
- CR Contractor should repair or replace as necessary.

- 4. PD Loose self-edge at laminate edge or splash.
- AT None - Self-edge should be completely adhered to the substrate.
- CR Contractor should repair or replace as necessary.

SWIMMING POOLS

- 5. PD Moisture damage at seams, joints or around the sink.
AT None - All seams and joints should comply with the American National Standard Institute guidelines.
CR Contractor should repair or replace as necessary (except where there is owner neglect, modification or abnormal use).
- 6. PD Cuts - Burns - Abrasions - Stains.
AT Cuts, burns, abrasions and/or stains should be reported on walk thru or within 10 days after move-in.
CR Contractor should repair or replace as necessary.

Swimming pool construction and design should meet or exceed the suggested minimum standards for swimming pools of the National Spa and Pool Institute, applicable building code requirements, as well as these standards. Spa construction and design is incorporated in these standards.

The construction site should be examined by the contractor and the consumer should be made aware of any conditions, which could result in future problems.

COUNTERTOPS – CULTURED MARBLE

- 1. PD Scratches in marble.
AT None - Scratches in marble should be reported to the contractor within 10 days after move-in.
CR Contractor should repair or replace as necessary.
- 2. PD Marble is bowed or warped.
AT Bow or warp should not exceed 1/16" per lineal foot in any direction.
CR Contractor should make necessary repairs.
- 3. PD Pinhole defects in marble.
AT Pinhole defects should be repaired unless excessive.
CR Contractor should make necessary repairs. Excessive pinholes may require marble replacement.
- 4. PD Tub ledge fails to drain water into tub.
AT None.
CR Contractor should take appropriate steps to insure that tub ledge drains properly.
- 5. PD Marble windowsills in bathrooms or kitchens hold water.
AT Marble windowsills in these areas should drain away from window.
CR Contractor should make necessary repairs.
- 6. PD Pattern in marble is not continuous.
AT Small areas of irregular pattern should be acceptable unless it occurs in a prominent location.
CR Contractor should replace marble where necessary.

SWIMMING POOLS - COPING

- 1. PD Coping cracks or becomes loose.
AT None.
CR Contractor should make necessary repairs.
- 2. PD Cracks appear in grout or grout becomes loose.
AT None - Checks in grouting of coping joints are commonly due to normal shrinkage conditions and as such are normal maintenance responsibilities of the owner.
CR Contractor should within the first 12 months repair loose grouting or cracks in grouting.
- 3. PD Crack in cantilever nose and cap tile grout under white cap at control joint.
AT This is a normal condition.
CR None.

SWIMMING POOLS - DECKS - CONCRETE

- 1. PD Standing water.
AT At the time of substantial completion all deck work should be sloped to drain to the exterior edge and/or to deck drains. Puddles 2' in diameter or more and/or over 1/8" in depth 20 minutes after the addition of water to the decks are unacceptable.
CR Contractor should make necessary repairs.
- 2. PD Cracks.
AT Shrinkage and minor movement cracks occur in concrete deck work without adversely affecting its serviceability. Maximum allowable horizontal or vertical displacement should not exceed 1/16" except at designed joints where horizontal and vertical displacement of up to 1/8" in 5' are acceptable.
CR Contractor may relieve the excess vertical separation at designed joints by grinding down the high side up to 1/8" and may fill the excess horizontal separation. Decks cracked in other locations in excess of the standard should be replaced matching the deck as closely as possible. Repositioning of slabs to correct the excess movement may also be done.

COUNTERTOPS & WALLS (STONE SLAB)

When an inadequate or defective substrate is present prior to installation of tile, the general contractor and/or the owner should be notified in writing by the tile contractor that a specific surface area is unacceptable for installation. Verifiable documentation that the potential problem was first submitted to the responsible party may relieve the installer of responsibility.

- CR Contractor should adjust height of heads one time after grass is established if necessary.
- 8. PD Stolenized lawns not smooth with low spots and areas between stolens.
AT None.
CR Contractor should make necessary repairs.
- 9. PD Boxes or covers not installed at solenoid valves.
AT Valves should be installed in proper box with covers when required by manufacturer's specifications or code.
CR Contractor should make necessary repairs.
- 10. PD Operating instructions not provided.
AT None.
CR Contractor should provide owner with operating instructions.

STUCCO

Stucco products should be mixed and installed to specifications.

- 1. PD Cracks in stucco.
AT Hairline cracks, if excessive, or cracks that exceed 1/16" are unacceptable.
CR Contractor should determine cause of crack and make necessary repairs.
- 2. PD Stucco falling or chipping around window or door frames.
AT None.
CR Contractor should determine cause and make necessary repairs.
- 3. PD Stucco too thin. Wire lath visible.
AT None.
CR Contractor should make necessary repairs.
- 4. PD Voids in stucco at beams, columns, etc.
AT None.
CR Contractor should make necessary repairs.
- 5. PD Stud locations visible on stucco wall.
AT None.
CR Contractor should make necessary repairs.
- 6. PD Weep screeds missing on frame walls or not properly installed.
AT None.
CR Contractor should make necessary repairs.

- 1. PD Joint width is excessive.
AT Joints should not exceed 1/16" in width.
CR Contractor should make necessary repairs.
- 2. PD Joint width between countertop and adjacent wall is excessive.
AT The width of the caulk joint between the countertop and adjacent wall should not exceed 1/8".
CR Contractor should make necessary repairs.
- 3. PD Countertop is warped or bowed.
AT 1/16" in 4' in any direction.
CR Contractor should make necessary repairs.
- 4. PD Scratches or chips in polished stone.
AT None. Notable scratches or chips should be reported at walk through or within 10 days after move-in. Fissures are natural characteristics of stone and should not be construed as scratching or pitting.
CR Contractor should make necessary repairs.
- 5. PD Vein trend.
AT In slabs with obvious veining, the slabs should be installed with vein trend running in the same direction.
CR Contractor should make necessary repairs.

ELECTRICAL SYSTEMS

POTENTIALLY HAZARDOUS SITUATIONS SHOULD BE CORRECTED IMMEDIATELY.

- 1. PD Malfunctioning of electrical fixtures, switches or outlets.
AT None.
CR Contractor should make necessary repairs.
- 2. PD Breaker trips with normal use.
AT Breaker should operate as intended.
CR Contractor should replace defective breaker in accordance with manufacturer's warranty.
- 3. PD Electrical equipment not level, plumb and true.
AT None.
CR Contractor should make necessary repairs.
- 4. PD Electrical equipment or materials not secure or adequately supported.
AT None.
CR Contractor should make necessary repairs.
- 5. PD Switch located behind door.

SOLAR HOT WATER SYSTEMS

Solar hot water systems or heating and cooling systems should be installed to I.M.P.S. Manufacturer's Installation Manual.

1. PD Solar system does not operate properly.
AT None.
CR Contractor should repair or replace components, parts or panels in accordance with manufacturer's warranties and/or guarantees if less than one year. Installer should be responsible for damage due to improper installation of solar systems for two years including interior damage caused by leaks.

SPRINKLERS, BUBBLERS AND DRIP SYSTEMS

Buyer assumes responsibility of sprinkler heads, bubbler heads and distribution tubing of drip systems after 90 days unless improper workmanship by the contractor can be shown.

1. PD System does not function.
AT None.
CR Contractor should determine cause and make necessary repairs.
2. PD System does not cover area.
AT Heads should be placed to cover area intended with water pressure and volume available.
CR Contractor should make necessary repairs.
3. PD Trenches visible over piping, improperly filled or compacted.
AT None.
CR Contractor should make necessary repairs.
4. PD Heads not working properly.
AT Defective sprinkler heads are unacceptable. Heads damaged by mower or vandals are not responsibility of contractor.
CR Contractor should make necessary repairs.
5. PD Bubblers not functioning properly.
AT None.
CR Contractor should adjust one time and instruct owner how to clean and adjust heads.
6. PD Clock not operating properly or defective.
AT None.
CR Contractor should make necessary repairs. Determine cause and correct condition. Replace clock if defective and within warranty.
7. PD Heads too low or too high.
AT Heads should clear top of grass when mowed and retract to clear lawnmower.

- AT All boxes for switches should be located on the side of the doorframe opposite the hinge.
CR Contractor should make necessary repairs.

6. PD Switches or plates span two different materials and are not flush.
AT Switches or plates should not span different types of building materials, vertically or horizontally, unless specified and then should be flush with both materials.
CR Contractor should make necessary repairs.

FIREPLACE

1. PD Unobstructed fireplace chimney does not draw properly.
AT None.
CR Contractor should make necessary repairs to correct fireplace or chimney to function properly.
2. PD Damper does not operate properly.
AT Damper should have full travel and operate easily.
CR Contractor should make necessary repairs.

GLASS

Glass and mirror defects should be reported to the contractor at the time of the walk-thru. If no walk-thru has been held, these defects should be reported within 10 days of occupancy or replacement installation.

1. PD Scratches on glass observable in daylight at 15'.
AT None.
CR Contractor should replace as necessary.
2. PD Malfunctioning windows, screens and sliding glass doors.
AT Windows, screens and sliding doors should operate smoothly with reasonable ease. Contractor should not be held responsible for owner's alterations or abuse to windows, screens and sliding doors.
CR Contractor should replace or repair as necessary one time in first year.
3. PD Leaks at glazing in windows or doors.
AT Minor infiltration of moisture and dust is normal around doors and windows, especially during high winds and excessive rain. Excessive infiltration from improperly installed doors and windows or poorly fitted weather stripping is unacceptable.
CR Contractor should make necessary repairs.
4. PD Cracked or broken glass.
AT None.
CR Contractor should make necessary repairs.

- CR Contractor should make necessary repairs.
- 3. PD Joints in siding not directly over stud.
AT Siding should match stud layout so that both sheets of siding are supported by stud.
CR Contractor should make necessary repairs.
- 4. PD Improper or inadequate nailing on siding.
AT Siding should be nailed according to manufacturer's specifications or as required by code.
CR Contractor should make necessary repairs.
- 5. PD Siding not properly caulked.
AT None - Siding should be properly caulked as required by manufacturer or code.
CR Contractor should make necessary repairs.

SITE WORK

- 1. PD Settling of ground around foundations, filled areas and trenches.
AT Excessively settled areas are unacceptable. Evaluation must be made on a case-by-case basis. The contractor should not be required to correct conditions caused by owner or landscapers not under the control of the contractor.
CR The contractor should upon notification of this condition, fill and compact the affected area taking care to maintain the proper slope and drainage.
- 2. PD Excessive settlement or cracking of floors, slabs, walks, drives or stems due to improper compaction of the subsurface and/or improper compaction of trenches.
AT None.
CR Contractor should make necessary repairs.
- 3. PD Excessive cracking due to expansive soils.
AT None. Soil conditions are known or should be known to the contractor prior to construction. The technology is available and a state of the art exists to avoid problems arising from expansive soil.
CR Contractor should make necessary repairs.
- 4. PD Improper drainage of site.
AT None - Grades should be established to insure proper drainage away from the structure. No standing water should remain in the yard more than 48 hours after a rain, unless requirements specify retention of storm water in yard. If a sump pump is included in the contract, all water should drain to the sump.
CR The contractor should correct deviations from the established grades, but is not responsible for conditions caused by others not under the contractor's control.

- 5. PD Scratches on mirror surfaces observable in daylight at a distance of 3' or more.
AT None.
CR Contractor should replace mirror.

GYPSUM WALL BOARD

- 1. PD Ceiling sags.
AT Ceiling should not sag more than 3/8" in 8'.
CR Contractor should make necessary repairs.
- 2. PD Visible conditions such as nail pops, cracks and seam lines due to expansion and contraction of structure.
AT Normal conditions such as hairline cracks where drywall meets a dissimilar material should be considered acceptable and can be readily corrected by homeowner.
CR Contractor should repair nail pops, seam lines and other hairline cracks one time within first year of occupancy.
- 3. PD Loose panels, improper nailing.
AT Panels should be firmly fastened.
CR Contractor should make necessary repairs.
- 4. PD Readily visible flat areas in textured finish.
AT None.
CR Contractor should make necessary repairs.
- 5. PD Voids at switch and receptacle plates.
AT None.
CR Contractor should make necessary repairs.

HARDWOOD FLOORS

- 1. PD Hardwood curls, pops or buckles.
AT None - Unless caused by moisture from broken sewer or water pipes, roof leaks, spills, etc. Hardwood floors should be installed according to manufacturer's recommendations.
CR Contractor should make necessary repairs.

INSULATION

- 1. PD Insulation not uniform in attic.
AT Insulation should meet minimum specified R factor.
CR Contractor should make necessary corrections to assure uniform thickness and specified R factor.
- 2. PD Insulation not installed properly.
AT None.
CR Contractor should correct condition as necessary.

- 3. PD Garage area not insulated.
- AT Normally not done unless specified.
- CR Contractor should correct only if specified.

INTERLOCKING PAVERS

- 1. PD Settling or heaving of stoops or steps.
- AT Settling or heaving more than ¼" is unacceptable.
- CR Contractor should make necessary repairs.

- 2. PD Spalling, pitting or damage of concrete pavers.
- AT Pavers should not deteriorate to the extent that the aggregate is exposed or the aesthetics are destroyed under normal use and weather conditions.
- CR Contractor should take corrective action necessary to replace defective areas. Contractor should not be responsible for damage caused by chemicals, excessive pressure washing or abuse.

- 3. PD Ponding or standing water on garages, patios, stoops, carports, walks and driveway surfaces.
- AT Water should drain. Standing water exceeding 3/32" is unacceptable. Standing water exceeding 3/16" on driveways is unacceptable. Flood, wait 30 minutes and check for ponding.
- CR Contractor should make necessary repairs.

- 4. PD Shifted or broken edge restraint.
- AT Edge restraints should remain stationary.
- CR Contractor should make necessary repairs

- 5. PD Inadequate or excessive leveling sand.
- AT Leveling sand should be a minimum of ¾" and a maximum of 1 ½".
- CR Contractor should make necessary repairs.

- 6. PD Excessive gap between pavers in field and at edges.
- AT No gaps should exceed 3/8" at the edge of the pavers. Joint widths between the pavers in the field should be between 1/16" and 3/16 at the base of the pavers (tumbled pavers may have a gap appearing larger from the top)
- CR Contractor should fill gaps at the edges greater than 3/8" with cut paver. Pavers with a gap greater than 3/16" in the field should be taken up and relayed tight.

- 7. PD White substance on pavers (efflorescence).
- AT Efflorescence is the result of a naturally occurring reaction and is not a defect.
- CR No contractor action is required.

- CR Contractor should make necessary repairs.

- 10. PD Improper crickets (installed by other trades).
- AT Roofer will be responsible if the roofer installs roof over improper crickets. Verifiable documentation that the potential problem was first submitted to the responsible party may relieve the roofer of responsibility.
- CR Contractor should install crickets correctly and repair or replace roofing.

SEPTIC TANK SYSTEMS

- 1. PD Septic system fails to operate properly.
- AT Septic system should be built according to regulating Health Department.
- CR Contractor should make necessary repairs.

- 2. PD Improper depth or improper backfill over leach field.
- AT Should be as designed. Surface water should not stand over leach field.
- CR Contractor should make necessary repairs.

- 3. PD Pipe leaking.
- AT None.
- CR Contractor should make necessary repairs.

- 4. PD Cleanout improper size or height.
- AT Cleanout should be sized to allow pumping with standard equipment.
- CR Contractor should make necessary repairs.

- 5. PD Cover on tank or cesspool collapsed.
- AT None - Unless caused by others not under the contractor's control.
- CR Contractor should make necessary repairs.

- 6. PD System installed too close to structure.
- AT None.
- CR Contractor should place system as required by regulating agency.

SIDING (EXTERIOR)

Due to varying moisture conditions throughout Arizona, wood products will expand and contract. This is normal and beyond the contractor's control.

- 1. PD Uneven building siding.
- AT Siding should be straight and flat within 3/8" in 10'.
- CR Contractor should make necessary repairs.

- 2. PD Siding delaminating.
- AT None.

- CR Contractor should install cricket correctly and repair or replace roofing.
- 14. PD Tile droops at eaves.
AT None.
CR Contractor should install proper spacer at eaves.
- 15. PD Crooked vertical and horizontal lines.
AT Vertical and horizontal lines should be reasonably straight unless varied deliberately for effect.
CR Contractor should make necessary repairs.

ROOFS - WOOD SHINGLES AND SHAKES

- 1. PD Type and grade not per plans and specifications.
AT None.
CR Contractor should make necessary repairs.
- 2. PD Improper exposure, edge lap or spacing.
AT Should be reasonably close to recommended dimensions.
CR Contractor should make necessary repairs.
- 3. PD Edges line up in adjacent courses.
AT Edges should not line up within three courses.
CR Contractor should make necessary repairs.
- 4. PD Improper placement of felt strips when required.
AT Felt should not be visible through spacing.
CR Contractor should make necessary repairs.
- 5. PD Improper nailing.
AT Nails should be weather resistant and properly sized for material used.
CR Contractor should make necessary repairs.
- 6. PD Improper flashings and valleys.
AT Flashings and valleys should be the size and type specified or required by code.
CR Contractor should make necessary repairs.
- 7. PD Loose or uneven ridge and hip shingles.
AT Ridges and hips should be straight, uniform and secured.
CR Contractor should make necessary repairs.
- 8. PD Roof jacks improper.
AT Roof jacks should be designed for wood shingles or shakes.
CR Contractor should replace jacks if necessary.
- 9. PD Starter shingles not used.
AT None.

- 8. PD The elevation of two adjacent pavers is not the same.
AT There should be no more than 1/8" difference in height between adjacent pavers.
CR Contractor shall make necessary repairs. If not extreme, re-compaction of the area may repair the problem.
- 9. PD Uneven or wavy pavers.
AT Excessive deviations, dips or sags over short distances are considered unacceptable.
CR Contractor should make necessary repairs.
- 10. PD Pavers interfere with drainage.
AT Pavers should not interfere with drainage.
CR Contractor should correct as necessary.

LANDSCAPING

- 1. PD Landscaping interferes with drainage.
AT Landscaping should not interfere with established drainage.
CR Contractor should correct as necessary.
- 2. PD Plants are not size or species specified.
AT None.
CR Contractor should install proper plants.
- 3. PD Plants dying.
AT Plants should be installed in healthy living condition.
CR Contractor should replace affected plants within warranty period unless condition is caused by owner.
- 4. PD Rocks uneven or spread too thin.
AT None.
CR Contractor should correct so that proper coverage is achieved.
- 5. PD Grass and weeds growing in rocks.
AT Areas should be protected from weed or grass infiltration.
CR Contractor should correct condition by appropriate means within 90 days.
- 6. PD Low spots.
AT Area should be fine graded and properly compacted.
CR Contractor should correct condition.
- 7. PD Damage caused by landscaping equipment.
AT None.
CR Contractor should have proper repairs made to anything damaged during landscaping.

MASONRY

Masonry walls should be straight, plumb and level, with uniform mortar joints and proper grout and vertical horizontal reinforcement. CMU will vary in texture and color; therefore, care should be used in selection of the material. Slump block will absorb moisture and should be sealed to prevent leaks through walls and damage in freeze-thaw zones.

1. PD Crooked, out-of-plumb, out-of-level masonry walls.
AT 1/4" out of plumb, 1/2" in total length of wall out of level not to exceed 1/4" in 8'.
CR Contractor should make necessary repairs.
2. PD Uneven surface of masonry walls.
AT Walls should be free of protruding or sunken blocks or bricks, unless called for in plans and specifications.
CR Contractor should make necessary repairs.
3. PD Voids in mortar joints.
AT Voids in masonry mortar joints 1/4" or less are acceptable unless they are excessive.
CR Contractor should make necessary repairs.
4. PD Cracks in mortar joints (stair step).
AT Stair step cracks in mortar joints can result from normal settlement and do not necessarily indicate a structural problem.
CR Cracks 1/8" or more should be filled. If cracks exceed 1/8" or if crack extends across the block itself, a structural problem may exist. Contractor should determine cause of the crack and make appropriate repairs if necessary.
5. PD Parapet walls not capped or filled.
AT None.
CR Parapet walls should be properly capped and filled.
6. PD Parapet walls not finished on roof side.
AT None.
CR Parapet walls should be struck on roof side and voids in mortar filled.
7. PD Masonry columns out of plumb or out of line.
AT Masonry columns should be plumb within 1/4" and in line within 1/4".
CR Contractor should make necessary repairs.
8. PD Mortar joints not straight, plumb or varies in thickness. (Certain masonry products are designed to exhibit an irregular appearance and must be evaluated accordingly).

- AT None.
CR Contractor should make necessary repairs.
4. PD Wood nailers visible under hip or ridge tiles per manufacturer's specifications.
AT None.
CR Contractor should remove tiles and make necessary repairs.
5. PD Chipped and broken tiles.
AT Chips larger than a quarter or excessive in number are unacceptable. Broken and cracked tiles are unacceptable.
CR Contractor should replace affected tiles. Roofing contractor should not be responsible for damage caused by others.
6. PD Irregular, uneven and unsightly valleys.
AT Valleys should be reasonably straight and aesthetically acceptable.
CR Contractor should make necessary repairs.
7. PD Unsightly and/or off color mortar.
AT Mortar should be neat and reasonably uniform in color.
CR Contractor should make necessary repairs.
8. PD Improper exposure.
AT Exposure should not exceed limits recommended by manufacturer.
CR Contractor should make necessary repairs.
9. PD Vents not flashed or improperly flashed.
AT Unapproved, missing or improperly installed roof jacks are unacceptable.
CR Contractor should make necessary repairs.
10. PD Improper or inadequate flashing.
AT Flashings should be installed according to manufacturer's recommendations and should be an approved type.
CR Contractor should make necessary repairs.
11. PD Improperly installed nailing strips.
AT None -Nailing strips should be installed per manufacturer's recommendations.
CR Contractor should make necessary repairs.
12. PD Inadequate underlayment.
AT None.
CR Contractor should make necessary repairs.
13. PD Improper crickets (installed by other trades).
AT Roofer will be responsible if the roofer installs roof over improper crickets. Verifiable documentation that the potential problem was first submitted to the responsible party may relieve the roofer of responsibility.

ROOFS - LIGHTWEIGHT AGGREGATE CONCRETE

- 1. PD Roof leaks.
AT None.
CR Contractor should determine cause and make necessary repairs.
- 2. PD Improper underlayment.
AT Since the underlayment is really the waterproof barrier, it should be of the specified material and properly installed.
CR Contractor should remove roof and replace.
- 3. PD Excessive cracking or chipping.
AT None.
CR Contractor should remove and replace affected area.
- 4. PD Excessively cracked, chipped, irregular and unsightly edges.
AT None.
CR Contractor should repair or replace as necessary.
- 5. PD Unsightly, irregular or chipped rises.
AT Forms should not be moved too soon. Edges at rise should be uniform and smooth.
CR Contractor should make necessary repairs.
- 6. PD Color variation.
AT Color between batches should be reasonably close.
CR Contractor should remove and replace affected areas.
- 7. PD Overspray on building, chimneys or equipment.
AT None.
CR Contractor should make necessary repairs.
- 8. PD Improper crickets (installed by other trades).
AT Roofer will be responsible if the roofer installs roof over improper crickets. Verifiable documentation that the potential problem was first submitted to the responsible party may relieve the roofer of responsibility.
CR Contractor should install cricket correctly and repair or replace.

ROOFS - TILE

- 1. PD Roof leaks.
AT None.
CR Contractor should determine cause of leak and make necessary repairs.
- 2. PD Loose or falling tiles.
AT None.
CR Contractor should make necessary repairs.
- 3. PD Ridge - hip and rake tiles loose or missing.

- AT Mortar joints should be straight and plumb (within 3/16" in adjacent courses) and of uniform thickness unless otherwise specified or detailed on plans. (Note: The bed joint may vary from these standards to compensate for irregularities in the stem wall or footing as allowed by the U.B.C.).
- CR Contractor should make necessary repairs.
- 9. PD Metal reinforcement (rebar, duo-wire, etc.) not placed in masonry walls and fences as specified or as required by the building code.
AT None.
CR Contractor should reconstruct and provide proper reinforcement. The existing wall or fence material may be reused provided it is undamaged.

PAINTING

- 1. PD Exterior paint or latex stain peels or deteriorates.
AT None.
CR Contractor should properly prepare and refinish affected areas, matching color as closely as possible. Where finish deterioration affects the majority of the wall or area, the whole area should be refinished.
- 2. PD Painting required as corollary repair because of other work does not match surrounding paint.
AT Paint should match surrounding areas as closely as possible.
CR Contractor should refinish to match surrounding areas as closely as possible.
- 3. PD Deterioration of stains, varnish or lacquer finishes.
AT Finishes on interior woodwork should not deteriorate during the first year of ownership. However, varnish type finishes used on exterior will deteriorate rapidly.
CR The contractor should correct or repair deteriorating finish one time during the first year of occupancy.
- 4. PD Interior paint inadequately covers surface.
AT Interior paint should be applied in an amount conforming to manufacturer's specifications of coverage and in sufficient quantity to visually cover all specified areas.
CR The contractor should retouch all surfaces where inadequate paint has been applied to cover original surfaces. Paint deterioration caused by normal living conditions, such as repeated scrubbing or scouring is a maintenance item and should be the responsibility of the owner.
- 5. PD Exterior doors not sealed on all six surfaces.
AT None.
CR Contractor should make necessary repairs.

PLUMBING

1. PD Leakage from any soil, waste, vent, gas or water piping.
AT None.
CR Contractor should make necessary repairs.
2. PD Faucet or valve leak.
AT No valve or faucet should leak due to defects in material or workmanship. Leakage caused by worn washers is considered owner maintenance except during manufacturer's warranty period.
CR Contractor should repair or replace the leaking faucet or valve unless due to owner negligence.
3. PD Defective plumbing fixtures or trim fittings.
AT None.
CR Contractor should replace or repair defective fixture or fitting according to manufacturer's warranty unless workmanship is involved, then contractor should repair problem. Contractor is not responsible for failure due to owner negligence or water impurities.
4. PD Stopped up sewers and drains.
AT None.
CR Contractor should be responsible if caused by workmanship.
5. PD Plumbing fixture loose at floor.
AT None.
CR Contractor should repair as necessary.
6. PD Vents or other penetrations located in roof valley.
AT Vents or other penetrations should not be located within 18" of valley centerline.
CR Contractor should relocate vents or other penetrations and have roof repaired by properly licensed contractor.

RESILIENT FLOOR COVERING

Some resilient flooring is not recommended for use on concrete slabs. If the buyer specifies these floorings, the buyer assumes responsibility for any problems that might develop after installation if the owner is advised of this fact in writing prior to installation.

1. PD Nail pops readily visible under floor covering.
AT None.
CR Contractor should correct condition and repair or replace floor covering.
2. PD Seams easily visible due to spacing or pattern mismatch.

- AT None.
CR Contractor should make necessary repairs.
2. PD Humps in foam.
AT None.
CR Contractor should make necessary repairs.
3. PD Ripples in foam.
AT Excessive waves or ripples are unacceptable.
CR Contractor should make necessary repairs.
4. PD Coating too thin or incomplete.
AT Coating should be proper thickness and have no voids.
CR Contractor should recoat as necessary.
5. PD Overspray on areas of building or equipment.
AT None.
CR Contractor should remove overspray and clean affected areas.
6. PD Repairs with asphaltic materials.
AT None – Unapproved materials should not be used on foam.
CR Contractor should remove and repair with foam or approved materials.
7. PD Scuppers or drains plugged by foam.
AT None.
CR Contractor should make necessary repairs.
8. PD Debris on roof.
AT None.
CR Contractor should remove debris from roof and recoat foam if necessary.
9. PD Ponding.
AT Minor ponding (up to 1/2" deep in small areas equivalent to no more than 1/3 of span) is acceptable providing roof is dry within 48 hours after rainfall. Verifiable documentation that the potential problem was first submitted to the responsible party may relieve the roofer of responsibility.
CR Contractor should make necessary repairs to insure proper drainage.
10. PD Improper crickets (installed by other trades).
AT Roofer will be responsible if the roofer installs roof over improper crickets. Verifiable documentation that the potential problem was first submitted to the responsible party may relieve the roofer of responsibility.
CR Contractor should install cricket correctly and repair or replace roofing.

- CR Contractor should make proper repairs as needed. If seam separation occurs as a result of the blister, it should be repaired in accordance with manufacturer's specifications. If condition is widespread, roof should be replaced.
- 11. PD Gravel guard improper size and incorrectly installed.
 - AT None.
 - CR Contractors should make necessary repairs.
- 12. PD Roof coating alligatored.
 - AT Some minor alligatored is normal. Emulsified asphalt used in proper quantities should not alligator excessively.
 - CR Contractor should recoat to correct problems, pursuant to manufacturer's specifications.
- 13. PD Seams lifting or curling.
 - AT None.
 - CR Contractor should properly mop down and flood coat.
- 14. PD Roof not installed per specifications.
 - AT None - Roof must be proper type and proper number of plies.
 - CR Contractor should repair or replace as necessary.
- 15. PD Roofing material applied over debris on roof deck.
 - AT None.
 - CR Contractors should make necessary repairs.
- 16. PD Improper crickets installed by the roofing contractor.
 - AT Crickets should have a minimum slope of at least twice that of the adjacent roof.
 - CR Contractor should install cricket correctly and repair or replace affected roofing.
- 17. PD Improper crickets (installed by other trades).
 - AT Roofer should be responsible for repairing or replacing affected roofing if the contractor installs roof over improper crickets. Verifiable documentation that the potential problem was first submitted to the responsible party may relieve the roofer of responsibility.
 - CR Contractor should repair or replace affected roofing after cricket has been corrected by the responsible party.

ROOFS - FOAM

Failure to obtain a building official's inspection and approval on re-roofing may require the roof covering to be completely removed and proper inspections made before applying the new roof. For the purposes of these standards, "nominal inch" will be defined as "at least 1 inch" with occasional 7/8" measurements acceptable.

- 1. PD Bubbles in foam coating (separation from deck).

- AT Seams should not be readily visible from a standing position. Pattern mismatch is unacceptable.
- CR Contractor should make appropriate repairs or replace.
- 3. PD Floor covering becoming loose at seams, edges or bubbles in floor covering.
 - AT None.
 - CR Contractor should repair or replace as necessary.
- 4. PD Foreign particles under floor coverings.
 - AT None.
 - CR Contractor should repair or replace as necessary.
- 5. PD Use of materials not recommended for on-grade concrete slabs, unless specified by owner or plans and specifications.
 - AT Use of this material should be at contractor's risk. If hydrostatic pressure or moisture causes discoloration or separation, covering should be unacceptable.
 - CR Contractor should replace with approved material.
- 6. PD Irregular cut edges along cabinets or walls.
 - AT None.
 - CR Contractor should make appropriate repairs or replace.

ROOFS

Roofs should not leak and should be installed to withstand winds accompanied by heavy rains. The contractor should not be responsible for leaks caused by alterations, tie-ins or penetrations caused by owner or others after completion of the roof, nor for extreme weather conditions.

ROOFS - ASPHALT AND FIBERGLASS COMPOSITION (3 TAB)

- 1. PD Too much exposure.
 - AT Should be reasonably close to recommended dimensions.
 - CR Contractor should make necessary repairs.
- 2. PD Uneven, irregular or crooked shingles.
 - AT Shingles should be reasonably straight and courses even in width.
 - CR Contractor should make necessary repairs.
- 3. PD Fish mouths and/or curling.
 - AT None.
 - CR Contractor should make necessary repairs.
- 4. PD Improper nailing.
 - AT Nailing should be per approved schedule.
 - CR Contractor should make necessary repairs. Excessive nailing (more than six fasteners per shingle) should require shingle replacement.

- 5. PD Crooked or unsightly ridges and hips.
AT None.
CR Contractor should make necessary repairs.
- 6. PD Improper, crooked and unsightly valleys.
AT None.
CR Contractor should make necessary repairs.
- 7. PD Flashings and jacks improperly installed.
AT None.
CR Contractor should make necessary repairs.
- 8. PD Improper crickets installed by the roofing contractor.
AT Crickets should have a minimum slope of at least twice that of the adjacent roof.
CR Contractor should install cricket correctly & repair or replace affected roofing.
- 9. PD Improper crickets (installed by other trades).
AT Roofer should be responsible for repairing or replacing affected roofing if roofer installs roof over improper crickets. Verifiable documentation that the potential problem was first submitted to the responsible party may relieve the roofer of responsibility.
CR Contractor should repair or replace affected roofing after cricket has been corrected by the responsible party.
- 10. PD Vents or other penetrations located in roof valley.
AT Vents or other penetrations should not be located within 18" of valley centerline. Verifiable documentation that the potential problem was first submitted to the responsible party may relieve the roofer of responsibility.
CR Roofer should be responsible for repairing or replacing affected roofing.
- 11. PD Roof is not of a uniform color or texture due to shingle replacements.
AT Shingle replacements within the first two years of installation due to faulty materials or a workmanship deficiency should not exceed 20% of the entire roof area.
CR Contractor should remove entire roof and install a new roof.

ROOFS - FLAT BUILT-UP

Failure to obtain a building official's inspection and approval on re-roofing when required by the governing building official may require the roof covering to be completely removed and proper inspections made before applying the new roof.

- 1. PD Roof leaks.

- AT None.
CR Contractor should determine cause and properly repair.
- 2. PD Roof holds water.
AT Minor ponding (up to 1/2" deep in small areas equivalent to no more than 1/3 of span) is acceptable providing roof is dry within 48 hours after rainfall. Verifiable documentation that the potential problem was first submitted to the responsible party may relieve the roofer of responsibility.
CR If drainage problem is due to improper framing problems, the roofer should be responsible for repairing or replacing affected roofing.
- 3. PD Excessive ponding due to build-up of roofing materials at scuppers.
AT Minor ponding (up to 1/2" deep in small areas equivalent to no more than 1/3 of span) is acceptable providing roof is dry within 48 hours after rainfall.
CR Contractor should remove excess material and repair as necessary.
- 4. PD Bare spots on graveled roofs.
AT Gravel should be firmly embedded in flood coat.
CR Initial two pounds of gravel per square foot should be embedded in asphalt. Additional two pounds per square foot is for cover. Contractor should apply additional asphalt and embed gravel in bare spots.
- 5. PD Scuppers installed too high.
AT Scuppers should be installed low enough to drain roof. Verifiable documentation that the potential problem was first submitted to the responsible party may relieve the roofer of responsibility.
CR Roofer should be responsible for repairing or replacing affected roofing.
- 6. PD Improper or non-existent cants.
AT None.
CR Contractor should make necessary repairs.
- 7. PD Improper flashing and counter flashing at parapets and vertical walls.
AT None.
CR Contractor should make necessary repairs.
- 8. PD Chimneys not flashed and counter flashed.
AT None.
CR Contractor should correct by installing proper flashing.
- 9. PD Omitted or improperly installed vent jacks.
AT None.
CR Contractor should make necessary repairs.
- 10. PD Bubbles or roof-ply separations.
AT Minor bubbles or blisters should not be cut.