

COUNTY COUNCIL OF BALTIMORE COUNTY, MARYLAND
Legislative Session 2013, Legislative Day No. 6

Bill No. 17-13

Mr. Tom Quirk, Chairman
By Request of County Executive

By the County Council, March 18, 2013

A BILL
ENTITLED

AN ACT concerning

The Plumbing and Gasfitting Code of Baltimore County

FOR the purpose of adopting the 2012 National Standard Plumbing Code Illustrated with certain amendments, deletions, and additions to the 2012 National Standard Plumbing Code Illustrated to be known as the Plumbing Code and Gasfitting Code of Baltimore County; and generally relating to the adoption of the plumbing and gasfitting code; curing a previous act of the County Council involving the Building Code with a possible title defect; providing for retroactive effect for a portion of this Act;

By Repealing

Sections 1, 2, 3, and 5 of the Baltimore County Plumbing and Gasfitting Code as adopted in Bill 89-09, noting that Section 4 dealt solely with amendments to the Baltimore County Code, 2003.

By Repealing and Reenacting with amendments

Section 21-7-202(b)(2)

Title 7. Electricians

Article 21. Permits, Licenses and Business Regulation

Baltimore County Code, 2003

EXPLANATION: CAPITALS INDICATE MATTER ADDED TO EXISTING LAW.
 [Brackets] indicate matter stricken from existing law.
 ~~Strike out~~ indicates matter stricken from bill.
 Underlining indicates amendments to bill.

By Adopting

The 2012 National Standard Plumbing Code Illustrated with amendments.

1 SECTION 1. BE IT ENACTED BY THE COUNTY COUNCIL OF BALTIMORE COUNTY,
2 MARYLAND, that the 2012 National Standard Plumbing Code - Illustrated is hereby adopted as the
3 "Plumbing Code of Baltimore County".
4

5 SECTION 2. AND BE IT FURTHER ENACTED, that the following portions of the newly adopted
6 Plumbing and Gasfitting Code of Baltimore County are hereby repealed:

7 The following sections within pages 1 through 8 titled Administration; 1.7.2; 1.9.5; 1.9.6; 1.9.8; 1.9.9;
8 1.10.2; 1.10.3; and the following sections within Chapters 1 through Chapter 18: the following definitions
9 in Section 1.2; Adopting Agency; Authority Having Jurisdiction, Lead Content; 2.16; 2.19.1; 2.25.5; 2.26;
10 2.28; Table 3.1.3; 3.1.5; 3.2.3; 3.3.6; Table 3.4; 3.4.2; Table 3.4.2; 3.4.3; Table 3.4.3; 3.4.5; 3.4.6; 3.4.7;
11 Table 3.5; Table 3.6; Table 3.7; 4.2.4.f; 4.3.9; 5.4.6; 5.4.7; 6.2.1; 6.2.1.3; 6.2.7; 6.2.10; 6.2.12; 7.1.1; 7.2;
12 10.1; 10.2; 10.5.9; 10.9.2; 10.9.3; 10.14.3; 10.15.6; 10.15.9.2; 10.15.9.3; 10.16.7; 10.20.1; 10.20.4; 11.2.3;
13 Table 11.5.1A; 13.1.2; 13.1.5; 15.3.1; 15.3.2; 16.1.1; 16.3.4; 16.6.1; Table 16.6.1; 16.6.7; 16.9.2; 16.9.5;
14 17.2.1; 17.2.2; 17.2.3; 17.2.4; 17.9.1; 17.9.2; 17.9.2.1; 17.9.2.2; 17.9.2.3; 17.9.3; 17.9.3.1; 17.9.3.2; 17.9.4;
15 17.9.4.1; 17.9.4.2; 17.9.4.3; 17.9.4.4; 17.9.4.5; 17.9.4.6; 17.9.5; 17.9.5.1; 17.9.5.2; 17.9.5.3; 17.9.5.4;
16 17.9.6; 17.9.6.1; 17.9.6.2; 17.9.6.3; 17.15; 17.15.1; 17.15.2; Appendix E8; Appendices F, H, I, and J.
17

18 SECTION 3. AND BE IT FURTHER ENACTED, that the following section and subsection
19 numbers are hereby added to the Plumbing and Gasfitting Code of Baltimore County: Preface, ADM 1.7.2;
20 ADM 1.9.5; ADM 1.9.6; ADM 1.9.8; ADM 1.9.9; ADM 1.10.2; ADM 1.10.3; the following definitions in
21 Section 1.2; Adopting Agency; Authority Having Jurisdiction; End-Use Device; Lead-Free; Pipe or Tube
22 Fitting; Plumbing Supply Fitting; Weighted Average Lead Content; 2.16; 2.19.1; 2.25.5; 2.26; 2.28; Table
23 3.1.3; 3.1.5; 3.2.3; 3.3.6; Table 3.4; 3.4.2; Table 3.4.2; 3.4.3; Table 3.4.3; 3.4.5; 3.4.6; 3.4.7; Table 3.5;
24 Table 3.6; Table 3.7; 4.2.4.f; 4.3.9; 5.4.6; 5.4.7; 6.2.1; 6.2.1.3; 6.2.7; 6.2.10; 6.2.12; 7.1.1; 7.1.2; 7.2; 10.1;
25 10.2; 10.5.9; 10.5.9.1; 10.9.2; 10.9.3; 10.14.3; 10.15.6.k; 10.15.9.2; 10.15.9.3; 10.16.7; 10.20.1; 10.20.2.f;
26 10.20.4; 11.2.3; Table 11.5.1A; 13.1.2; 13.1.5.d; 15.3.1; 15.3.2; 16.1.1; 16.3.4; 16.6.1; 16.6.7; 16.9.2;
27 16.9.5; 17.1.3; 17.2; 17.9; 17.15; 17.15.1; 17.15.2; 19.1; 19.2; and Appendix E.8. The text associated with
28 each of these sections and subsections are fully set forth below.

29 **PREFACE**

30 **INTENT OF ILLUSTRATIONS, EXPLANATORY NOTES AND COMMENTS**

1 ANY CONFLICT BETWEEN THE 2012 NATIONAL STANDARD PLUMBING CODE -
2 ILLUSTRATED AND THE BALTIMORE COUNTY CODE SHALL BE RESOLVED IN FAVOR OF
3 THE COUNTY CODE. THE FIGURES, ILLUSTRATIONS, DIAGRAMS, EXPLANATORY NOTES,
4 AND EDITORIAL COMMENTS CONTAINED WITHIN THE 2012 NATIONAL STANDARD
5 PLUMBNG CODE - ILLUSTRATED ARE INTENDED TO SUPPLEMENT THE ACTUAL CODE
6 TEXT AND HELP EXPLAIN THE GENERAL INTENT AND MEANING OF THE CODE. THE
7 PIPING DIAGRAMS AND FIGURES ARE NOT INTENDED TO RESTRICT THE USE OF OTHER
8 ARRANGEMENTS THAT SATISFY THE REQUIREMENTS OF THE WRITTEN CODE.

9 **ADMINISTRATION SECTION**

10 **ADM 1.7.2 PENALTIES**

11 ANY INDIVIDUAL, PARTNERSHIP, FIRM OR CORPORATION WHO SHALL VIOLATE OR FAIL
12 TO COMPLY WITH ANY OF THE REQUIREMENTS OF THIS CODE SHALL BE DEEMED A
13 VIOLATOR AND SUBJECT TO THE ENFORCEMENT PROCEDURES SET FORTH IN ARTICLE 3,
14 TITLE 6, OF THE BALTIMORE COUNTY CODE, 2003 AND THE CIVIL PENALTIES SET FORTH
15 IN SECTION 1-2-217 OF THE BALTIMORE COUNTY CODE, 2003.

16 **ADM 1.9.5 APPROVED PLANS**

17 ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE PLANS WITHOUT DEVIATION.

18 **ADM 1.9.6 PLANS RETENTION**

19 THE AUTHORITY HAVING JURISDICTION SHALL RETAIN ONE SET OF APPROVED PLANS
20 UNTIL FINAL APPROVAL OF THE WORK CONTAINED THEREIN. ONE SET OF PLANS AS
21 APPROVED SHALL BE KEPT ON THE JOB SITE AT ALL TIMES UNTIL FINAL APPROVAL OF
22 THE WORK CONTAINED THEREIN.

23 **ADM 1.9.8 TIME LIMIT ON PERMITS**

24 ALL PERMITS SHALL BE ISSUED TO EXPIRE ONE YEAR AFTER THE DATE SUCH PERMIT IS
25 ISSUED, UNLESS THE TIME OF COMPLETION STATED IN THE APPLICATION CALLS FOR A
26 LONGER OR SHORTER PERIOD THAN ONE YEAR, IN WHICH EVENT THE TIME OF
27 EXPIRATION ON THE PERMIT SHALL BE FIXED SO AS TO ALLOW A REASONABLE TIME TO
28 COMPLETE THE WORK. ALL PERMITS FOR A SUBSTATION ISSUED TO A PUBLIC SERVICE
29 COMPANY, AS DEFINED IN TITLE 1 OF THE PUBLIC UTILITY COMPANIES ARTICLE OF THE
30 ANNOTATED CODE OF MARYLAND, SHALL BE ISSUED TO EXPIRE FIVE YEARS AFTER THE
31 DATE SUCH PERMIT IS ISSUED, PROVIDED THAT WITHIN ONE YEAR AFTER THE ISSUANCE
32 OF THE PERMIT THE SITE IS FENCED AND LANDSCAPED AND A SIGN POSTED STATING THE
33 PROPOSED USE OF THE COMPLETED PROJECT. HOWEVER, AS TO ANY PERMIT, THE
34 AUTHORITY HAVING JURISDICTION IS HEREBY AUTHORIZED TO GRANT ANY EXTENSION

1 OF TIME NOT IN EXCESS OF ONE YEAR IN WHICH TO COMPLETE THE WORK. IF THE WORK
2 UNDER A PERMIT IS NOT COMPLETE BEFORE THE PERMIT EXPIRATION DATE OR ANY
3 EXTENSION THEREOF GRANTED BY THE AUTHORITY HAVING JURISDICTION, THAT
4 PERMIT BECOMES A NULLITY.

5 **ADM 1.9.9 REVOCATION OR SUSPENSION**

6 AT ANY TIME, THE AUTHORITY HAVING JURISDICTION MAY SUSPEND OR REVOKE A
7 PERMIT ISSUED IN ERROR OR ON THE BASIS OF INCORRECT INFORMATION SUBMITTED
8 OR IN VIOLATION OF ANY SECTION OF THIS CODE.

9 **ADM 1.10.2 PLAN REVIEW FEES**

10 IF PLANS ARE REQUIRED TO BE SUBMITTED, THE AUTHORITY HAVING JURISDICTION
11 MAY CHANGE A PLAN REVIEW FEE NOT TO EXCEED THE SUM OF \$500.00.

12 **ADM 1.10.3 PLAN REVIEW EXPIRATION**

13 PERMIT APPLICATION AND PLAN REVIEW FOR WHICH NO PERMIT IS ISSUED SHALL
14 EXPIRE 6 MONTHS FOLLOWING THE DATE OF APPLICATION. ALL PLAN REVIEW FEES
15 SHALL BE FORFEITED AND THE PLANS MAY BE DESTROYED BY THE AUTHORITY
16 HAVING JURISDICTION OR RETURNED TO THE APPLICANT.

17 **CHAPTER 1 DEFINITIONS**

18 **1.2 ADOPTING AGENCY**

19 ADOPTING AGENCY SHALL MEAN THE COUNTY COUNCIL OF BALTIMORE COUNTY,
20 MARYLAND.

21 **1.2 AUTHORITY HAVING JURISDICTION**

22 AUTHORITY HAVING JURISDICTION SHALL MEAN THE BALTIMORE COUNTY
23 DEPARTMENT OF PERMITS, APPROVALS AND INSPECTIONS.

24 **1.2 END-USE DEVICE:** A WATER SUPPLY DEVICE THAT DISPENSES POTABLE WATER
25 SUCH AS A FAUCET, DRINKING FOUNTAIN, KITCHEN HOT WATER DISPENSER, BATHTUB
26 AND/OR SHOWER FAUCET, SHOWER HEAD, FLUSH VALVE, HOSE BIBB, OR SUPPLY
27 CONNECTION TO AN APPLIANCE.

28 **1.2 LEAD-FREE:** "LEAD-FREE" MEANS CONTAINING NOT MORE THAN A WEIGHTED
29 AVERAGE OF 0.25% LEAD FOR THE WETTED SURFACES OF PIPES, TUBES, FITTINGS FOR
30 PIPES AND TUBES, PLUMBING SUPPLY FITTINGS, AND FIXTURES. "LEAD-FREE" SOLDER
31 AND FLUX CONTAINS NO MORE THAN 0.2% LEAD.

32 **1.2 PIPE OR TUBE FITTING:** A PIPING COMPONENT THAT CONNECTS SECTIONS OF PIPES
33 OR TUBES, SUCH AS A COUPLING, ELBOW, REDUCER, TEE, FLANGE, UNION, OR FLEXIBLE
34 CONNECTOR.

1 **1.2 PLUMBING SUPPLY FITTING:** A PIPING COMPONENT OTHER THAN A PIPE FITTINGS
2 OR TUBE FITTING THAT PERFORMS A REQUIRED FUNCTION IN POTABLE WATER SUPPLY
3 PIPING SUCH AS A FAUCET, ADAPTER, VALVE, STRAINER, FILTER, TEMPERATURE
4 LIMITING OR CONTROL DEVICE, PRESSURE SWITCH, THERMOMETER WELL, EXPANSION
5 COMPENSATOR, OR WATER HAMMER ARRESTOR.

6 **1.2 WEIGHTED AVERAGE LEAD CONTENT:** THE WEIGHTED AVERAGE LEAD CONTENT
7 OF A "LEAD-FREE" PIPE, PIPE FITTING, PLUMBING FITTING, OR FIXTURE SHALL BE
8 CALCULATED BY USING THE FOLLOWING FORMULA: FOR EACH WETTED COMPONENT,
9 THE PERCENTAGE OF LEAD IN THE COMPONENT SHALL BE MULTIPLIED BY THE RATIO OF
10 THE WETTED SURFACE AREA OF THAT COMPONENT TO THE TOTAL WETTED SURFACE
11 AREA OF THE ENTIRE PRODUCT TO ARRIVE AT THE WEIGHTED PERCENTAGE OF LEAD OF
12 THE COMPONENT. THE WEIGHTED PERCENTAGE OF LEAD OF EACH WETTED COMPONENT
13 SHALL BE ADDED TOGETHER, AND THE SUM OF THESE WEIGHTED PERCENTAGES SHALL
14 CONSTITUTE THE WEIGHTED AVERAGE LEAD CONTENT OF THE PRODUCT. THE LEAD
15 CONTENT OF THE MATERIAL USED TO PRODUCE WETTED COMPONENTS SHALL BE USED
16 TO DETERMINE COMPLIANCE WITH "LEAD-FREE". FOR LEAD CONTENT OF MATERIALS
17 THAT ARE PROVIDED AS A RANGE, THE MAXIMUM CONTENT OF THE RANGE SHALL BE
18 USED.

19 **CHAPTER 2 GENERAL REGULATIONS**

20 **2.16 FREEZING OR OVERHEATING**

21 A. THE PLUMBING SYSTEM SHALL BE PROTECTED FROM FREEZING OR
22 OVERHEATING. THE FOLLOWING CONDITIONS SHALL BE MET:

- 23 1. WATER SERVICE PIPING SHALL BE INSTALLED BELOW RECORDED FROST LINES.
24 MINIMUM EARTH COVER ABOVE THE TOP OF THE PIPE SHALL BE 36 INCHES.
- 25 2. MINIMUM EARTH COVER ABOVE THE TOP OF BUILDING SEWERS THAT
26 CONNECT TO PUBLIC SEWAGE SYSTEMS SHALL BE 30 INCHES. MINIMUM EARTH COVER
27 ABOVE THE TOP OF BUILDING SEWERS THAT CONNECT TO INDIVIDUAL SEWAGE
28 DISPOSAL
29 SYSTEMS SHALL BE 24 INCHES.
- 30 3. IN SYSTEMS THAT ARE USED SEASONALLY, WATER PIPING SHALL HAVE
31 PROVISIONS TO BE DRAINED.
- 32 4. PIPING SHALL BE INSTALLED SO THAT THE CONTENTS WILL NOT BE HEATED
33 DUE TO CLOSE PROXIMITY TO ANY HEAT SOURCE OR FROM DIRECT SOLAR RADIATION.
- 34 5. IN AREAS WITH SEASONAL FREEZING OUTDOOR TEMPERATURES, ALL DRAIN

1 PIPING AND WATER PIPING INSTALLED IN EXTERIOR WALLS, ATTICS, AND OTHER
2 AREAS EXPOSED TO OUTDOOR TEMPERATURES SHALL BE PROTECTED FROM FREEZING.
3 IN
4 HEATED SPACES, THE PIPING SHALL BE INSTALLED ON THE HEATED SIDE OF THE
5 BUILDING INSULATION.

6 **2.19 CONNECTION TO WATER AND SEWER SYSTEMS**

7 **2.19.1 AVAILABILITY OF PUBLIC WATER AND SEWER**

8 THE WATER DISTRIBUTION AND DRAINAGE SYSTEMS OF ANY BUILDING IN WHICH
9 PLUMBING FIXTURES ARE INSTALLED SHALL BE CONNECTED TO A PUBLIC WATER
10 SUPPLY AND SEWER SYSTEM RESPECTIVELY IF THE PUBLIC WATER SUPPLY AND/OR
11 PUBLIC SEWER IS WITHIN 500 FEET OF ANY PROPERTY LINE OF THE PREMISES, OR
12 OTHER REASONABLE DISTANCE AS DETERMINED BY THE AUTHORITY HAVING
13 JURISDICTION.

14 **2.25.5 FLOOR SINKS**

15 FLOOR SINKS IN FOOD HANDLING AREAS SHALL BE OF THE SANITARY DESIGN WITH
16 SMOOTH, CORROSION-RESISTANT SURFACES THAT CAN BE READILY CLEANED AND
17 INSTALLED FLUSH WITH THE FINISHED FLOOR.

18 **2.26 ELEVATOR SUMP PITS**

19 A. SUMP PITS IN SHAFTS FOR ELECTRIC ELEVATORS SHALL BE DRAINED BY GRAVITY OR
20 BY SUMP PUMPS THAT DISCHARGE TO A LOCATION APPROVED BY THE AUTHORITY
21 HAVING JURISDICTION.

22 B. SUMP PITS IN SHAFTS FOR HYDRAULIC ELEVATORS SHALL BE DRAINED BY SUMP
23 PUMPS THAT ARE EQUIPPED WITH LEVEL SENSORS THAT WILL PREVENT THE PUMP FROM
24 OPERATING WHENEVER OIL IS DETECTED ON THE SURFACE OF THE WATER IN THE SUMP.

25 C. SUMP PITS SHALL BE COVERED WITH A REMOVABLE COVER THAT IS FLUSH WITH THE
26 FLOOR AT THE BOTTOM OF THE SHAFT.

27 **2.28 NFPA 13D MULTIPURPOSE RESIDENTIAL FIRE SPRINKLER SYSTEMS**

28 NFPA 13D MULTIPURPOSE RESIDENTIAL FIRE SPRINKLER SYSTEMS THAT PROVIDE
29 BOTH DOMESTIC COLD WATER DISTRIBUTION AND FIRE SPRINKLER PROTECTION FOR
30 ONE- AND TWO-FAMILY DWELLINGS WITH A COMBINATION PIPING SYSTEM SHALL
31 COMPLY WITH SECTION 10.20.

32 **CHAPTER 3 MATERIALS**

33 **TABLE 3.1.3 - PART X. MISCELLANEOUS:**

34 DRINKING WATER SYSTEM COMPONENTS - HEALTH EFFECTS: NSF 61 - 2011

1 WEIGHTED AVERAGE LEAD CONTENT EVALUATION PROCEDURE TO A 0.25% LEAD
2 REQUIREMENT: NSF 61-ANNEX G - 2009.

3 DRINKING WATER SYSTEM COMPONENTS - LEAD CONTENT: NSF 372 – 2010

4 **3.1.5 HEALTH EFFECTS OF DRINKING WATER COMPONENTS**

5 A. THE HEALTH EFFECTS OF DRINKING WATER COMPONENTS SHALL COMPLY WITH
6 NSF 61. COMPONENTS WITHIN THE SCOPE OF NSF 61 HAVE SURFACES IN CONTACT WITH
7 POTABLE WATER. COMPONENTS INCLUDE, BUT ARE NOT LIMITED TO, PLASTIC
8 MATERIALS, PLASTIC AND METALLIC PIPE, PIPE-RELATED PRODUCTS, PROTECTIVE
9 MATERIALS, JOINING AND SEALING MATERIALS, PROCESS MEDIA, TREATMENT DEVICES,
10 TRANSMISSION DEVICES, DISTRIBUTION DEVICES, AND END-POINT DEVICES.

11 B. REFER TO SECTION 3.4.6 FOR THE LIMIT ON THE LEAD CONTENT OF PIPES, TUBES,
12 PIPE FITTINGS, TUBE FITTINGS, PLUMBING SUPPLY FITTINGS, FIXTURES, AND END-USE
13 DEVICES THAT ARE INTENDED TO DISPENSE POTABLE WATER FOR HUMAN
14 CONSUMPTION BY DRINKING OR COOKING.

15 **3.3.6 RESERVED**

16 **3.4.2 WATER SERVICE PIPING**

17 WATER SERVICE PIPE AND PIPE FITTINGS TO THE POINT OF ENTRANCE INTO THE
18 BUILDING THROUGH A FOUNDATION WALL OR FLOOR SHALL BE OF MATERIALS LISTED
19 IN TABLE 3.4. AND SHALL BE WATER PRESSURE RATED NOT LESS THAN 200 PSIG AT 73
20 DEG F. SEE TABLE 3.4.2.

21 **3.4.3 WATER DISTRIBUTION PIPING**

22 WATER PIPING FOR THE DISTRIBUTION OF HOT OR COLD WATER WITHIN BUILDINGS
23 SHALL BE OF MATERIAL LISTED IN TABLE 3.4, AND SHALL BE WATER PRESSURE RATED
24 FOR NOT LESS THAN 100 PSI AT 180 DEG F AND 160 PSI AT 73 DEG F. PLASTIC PIPING USED
25 IN HOT WATER DISTRIBUTION SHALL BE INSTALLED IN ACCORDANCE WITH THE
26 REQUIREMENTS OF SECTION 10.15.8.

27 NOTE: THE WORKING PRESSURE RATING OF CERTAIN APPROVED PLASTIC PIPING
28 MATERIALS VARIES DEPENDING ON THE PIPE SIZE, MATERIAL COMPOSITION, WALL
29 THICKNESS, AND METHODS OF JOINING. SEE TABLE 3.4.3.

30 **3.4.5 MATERIAL RATINGS AND INSTALLATION**

31 A. PIPING USED FOR POTABLE WATER SHALL BE SUITABLE FOR THE MAXIMUM
32 TEMPERATURE, PRESSURE, AND VELOCITY THAT MAY BE ENCOUNTERED, INCLUDING
33 TEMPORARY INCREASES AND SURGES.

1 B. RELIEF VALVE TEMPERATURE AND PRESSURE RELIEF SETTINGS SHALL NOT EXCEED
2 THE PIPE, TUBE OR FITTING MANUFACTURER'S RECOMMENDATIONS.

3 C. PIPING AND FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE
4 MANUFACTURER'S INSTALLATION INSTRUCTIONS AND THE ACCEPTABLE MATERIAL
5 STANDARDS, RECOGNIZING ANY LIMITATIONS IN USE.

6 **3.4.6 LIMITS ON LEAD CONTENT**

7 A. PIPES, TUBES, FITTINGS FOR PIPES AND TUBES, PLUMBING SUPPLY FITTINGS,
8 FIXTURES, AND END-USE DEVICES THAT ARE INTENDED TO DISPENSE POTABLE WATER
9 FOR HUMAN CONSUMPTION BY DRINKING AND COOKING SHALL BE "LEAD-FREE",
10 CONTAINING NOT MORE THAN A WEIGHTED AVERAGE OF 0.25% LEAD WITH RESPECT TO
11 THE WETTED SURFACES, AS DEFINED IN SECTION 1.2 OF THIS CODE.

12 B. SOLDER AND FLUX FOR SOLDERED JOINTS IN POTABLE WATER PIPING SHALL BE
13 "LEAD-FREE", CONTAINING NOT MORE THAN 0.2% LEAD. FLUX FOR MAKING SOLDERED
14 JOINTS IN "LEAD-FREE" PIPING SHALL BE RATED FOR THE TEMPERATURES NECESSARY
15 FOR MAKING JOINTS IN "LEAD-FREE" PIPING.

16 C. POTABLE WATER SUPPLY COMPONENTS THAT ARE WITHIN THE SCOPE OF NSF 61
17 FOR DRINKING WATER SYSTEM COMPONENTS AND ARE REQUIRED TO BE "LEAD-FREE"
18 SHALL BE CERTIFIED TO COMPLY WITH NSF 61 AND EITHER ITS ANNEX G OR NSF 372.

19 D. POTABLE WATER SUPPLY COMPONENTS THAT ARE NOT WITHIN THE SCOPE OF NSF
20 61 FOR DRINKING WATER SYSTEM COMPONENTS BUT ARE REQUIRED TO BE "LEAD-FREE"
21 SHALL BE CERTIFIED TO COMPLY WITH NSF 372.

22 E. POTABLE WATER SUPPLY COMPONENTS THAT ARE NOT REQUIRED TO BE "LEAD-
23 FREE" SHALL BE RATED FOR USE WITH POTABLE WATER AND SHALL NOT CONTAIN
24 MORE THAN 4% LEAD BY DRY WEIGHT FOR PLUMBING SUPPLY FITTINGS AND FIXTURES
25 OR MORE THAN 8% LEAD BY DRY WEIGHT FOR PIPES, TUBES, AND FITTINGS FOR PIPES
26 AND TUBES.

27 F. THE FOLLOWING POTABLE WATER END-USE DEVICES AND WATER SUPPLY PIPING
28 ARE CONSIDERED TO BE INTENDED TO CONVEY WATER FOR HUMAN CONSUMPTION
29 THROUGH DRINKING OR COOKING AND SHALL BE "LEAD-FREE", INCLUDING THEIR
30 ASSOCIATED SUPPLY PIPING:

- 31 1. KITCHEN SINK FAUCETS
- 32 2. BAR SINK FAUCETS
- 33 3. PRIVATE BATHROOM SINK FAUCETS
- 34 4. DRINKING FOUNTAIN FAUCETS

- 1 5. KITCHEN HOT WATER DISPENSERS
- 2 6. POINT-OF-USE WATER TREATMENT DEVICES
- 3 7. THE WATER SUPPLY TO ICE MAKERS
- 4 8. THE WATER SUPPLY TO POTABLE WATER HEATERS
- 5 9. RECIRCULATED HOT WATER PIPING
- 6 10. THE WATER SUPPLY TO MISTING SYSTEMS FOR PRODUCE IN FOOD MARKETS
- 7 11. THE WATER SUPPLY TO COOKING EQUIPMENT FOR FOOD IN COMMERCIAL
- 8 KITCHENS
- 9 12. THE WATER SUPPLY TO PRODUCTION EQUIPMENT FOR PROCESSED FOOD
- 10 CONTAINING WATER
- 11 13. ANY OTHER END-USE DEVICES AND PIPING THAT CONVEY WATER FOR HUMAN
- 12 CONSUMPTION
- 13 EXCEPTION: TANK-TYPE WATER HEATERS SHALL NOT BE REQUIRED TO BE "LEAD-FREE"
- 14 UNLESS THERE IS AN INDUSTRY STANDARD FOR "LEAD-FREE" TANK-TYPE WATER
- 15 HEATERS AND THEY ARE REQUIRED TO BE "LEAD-FREE" BY THE AUTHORITY HAVING
- 16 JURISDICTION.
- 17 G. THE FOLLOWING PIPING COMPONENTS SHALL BE "LEAD-FREE" WHEN ASSOCIATED
- 18 WITH "LEAD-FREE" END-USE DEVICES AND PIPING THAT IS REQUIRED TO BE "LEAD-
- 19 FREE:"
- 20 1. MAIN SERVICE SHUTOFF VALVES
- 21 2. WATER SERVICE BACKFLOW PREVENTION DEVICES
- 22 3. WATER METERS
- 23 4. PRESSURE BOOSTER PUMPS
- 24 5. PRESSURE REDUCING VALVES
- 25 6. STRAINERS
- 26 7. WATER FILTERS
- 27 8. CHECK VALVES
- 28 9. CONTROL VALVES
- 29 10. VACUUM BREAKERS
- 30 11. WATER HAMMER ARRESTORS
- 31 12. MASTER HOT WATER MIXING VALVES
- 32 13. IN-LINE TEMPERING VALVES
- 33 14. HOT WATER RECIRCULATING PUMPS
- 34 15. BRANCH PIPING SHUTOFF VALVES

- 1 16. BALANCING VALVES
- 2 17. FIXTURE SHUTOFF VALVES
- 3 18. SOLENOID VALVES
- 4 19. TANKLESS WATER HEATERS
- 5 20. ANY OTHER PIPING COMPONENTS ASSOCIATED WITH END-USE DEVICES OR PIPING
- 6 THAT ARE REQUIRED TO BE "LEAD-FREE"

7 H. THE FOLLOWING POTABLE WATER END-USE DEVICES, WATER SUPPLIES, AND
8 COMPONENTS ARE NOT CONSIDERED TO BE INTENDED TO CONVEY WATER FOR HUMAN
9 CONSUMPTION THROUGH DRINKING OR COOKING AND ARE NOT REQUIRED TO BE "LEAD-
10 FREE", INCLUDING THEIR ASSOCIATED WATER SUPPLY PIPING, UNLESS THEIR
11 ASSOCIATED PIPING ALSO SERVES END-USE DEVICES AND WATER SUPPLIES THAT MUST
12 BE "LEAD-FREE".

- 13 1. BATHTUB FAUCETS
- 14 2. SHOWER VALVES, HEADS, AND ADAPTERS
- 15 3. TANK-TYPE WATER HEATERS
- 16 4. FLUSH VALVES FOR WATER CLOSETS
- 17 5. FLUSH VALVES FOR URINALS
- 18 6. FLUSH VALVES FOR BIDETS
- 19 7. SHUTOFF VALVES FOR CLOTHES WASHING MACHINES
- 20 8. LAVATORY FAUCETS IN PUBLIC TOILET ROOMS
- 21 9. LAUNDRY SINK FAUCETS
- 22 10. SERVICE SINK FAUCETS
- 23 11. FAUCETS FOR LABORATORY APPLICATIONS
- 24 12. HOSE BIBBS
- 25 13. TRAP SEAL PRIMING DEVICES
- 26 14. BACKFLOW PREVENTION DEVICES THAT SUPPLY NON-POTABLE APPLICATIONS
- 27 15. FIRE HOSE VALVES
- 28 16. WATER HAMMER ARRESTERS
- 29 17. THE WATER SUPPLY TO DISH WASHERS
- 30 18. THE WATER SUPPLY TO WHIRLPOOLS, SPAS, THERAPY POOLS, AND SWIMMING
- 31 POOLS
- 32 19. THE WATER SUPPLY TO BOILERS AND HEATING HOT WATER GENERATORS
- 33 20. THE WATER SUPPLY TO HUMIDIFIERS

1 21. THE WATER SUPPLY TO IRRIGATION SYSTEMS AND OTHER NON-POTABLE
2 APPLICATIONS

3 22. THE WATER SUPPLY TO FOOD PRODUCTION EQUIPMENT THAT DOES NOT CONTACT
4 THE FOOD

5 23. ANY OTHER END-USE DEVICES AND WATER SUPPLIES THAT DO NOT CONVEY
6 WATER FOR HUMAN CONSUMPTION

7 EXCEPTION: TANK-TYPE WATER HEATERS SHALL NOT BE REQUIRED TO BE "LEAD-FREE"
8 UNLESS THERE IS AN INDUSTRY STANDARD FOR "LEAD-FREE" TANK-TYPE WATER
9 HEATERS AND THEY ARE REQUIRED TO BE "LEAD-FREE" BY SECTION 3.4.6, AS DICTATED
10 BY THE AUTHORITY HAVING JURISDICTION.

11 **3.4.7 SHUTOFF VALVES**

12 A. ALL GATE VALVES, BALL VALVES, BUTTERFLY VALVES, GLOBE VALVES, AND
13 OTHER SHUTOFF VALVES IN WATER SERVICE PIPING AND WATER DISTRIBUTION PIPING
14 THAT SUPPLY POTABLE WATER FOR HUMAN CONSUMPTION BY DRINKING OR COOKING
15 SHALL BE "LEAD-FREE" IN ACCORDANCE WITH SECTION 3.4.6.

16 B. SHUTOFF VALVES THAT MUST BE "LEAD-FREE" AND ARE WITHIN THE SCOPE OF NSF
17 61 SHALL COMPLY WITH THE REQUIREMENTS OF NSF 61 AND EITHER ITS ANNEX G OR NSF
18 372.

19 C. SHUTOFF VALVES THAT MUST BE "LEAD-FREE" BUT ARE NOT WITHIN THE SCOPE OF
20 NSF 61 SHALL COMPLY WITH NSF 372.

21 D. SHUTOFF VALVES THAT ARE NOT REQUIRED TO BE "LEAD-FREE" SHALL BE RATED
22 FOR USE WITH POTABLE WATER AND SHALL NOT CONTAIN MORE THAN 4% LEAD BY DRY
23 WEIGHT.

24 **3.2.3 PLASTIC**

25 A. PLASTIC PIPING MATERIALS FOR SPECIFIC APPLICATIONS SHALL BE AS LISTED IN
26 SECTIONS 3.4 THROUGH 3.11.

27 B. WHERE PLASTIC PIPING PENETRATES WALLS, FLOORS, OR CEILINGS THAT ARE
28 REQUIRED TO BE FIRE RATED, THE PENETRATION SHALL BE PROTECTED BY APPROVED
29 INTUMESCENT FIRE STOPPING.

30 C. PLASTIC PIPING SHALL NOT BE INSTALLED IN AIR PLENUMS.

31 D. PROVISIONS SHALL BE MADE FOR THERMAL EXPANSION OF PLASTIC PIPING BY THE
32 USE OF OFFSETS, EXPANSION LOOPS, OR EXPANSION JOINTS. ACCESS SHALL BE
33 PROVIDED FOR MECHANICAL EXPANSION DEVICES.

34 E. PLASTIC TRAPS AND TAILPIECES SHALL HAVE 0.062" MINIMUM WALL THICKNESS.

1 F. PLASTIC SHEETING UNDER SHOWER PANS SHALL COMPLY WITH THE STANDARDS
2 LISTED IN TABLE 3.1.3.

3 **TABLE 3.4 MATERIALS FOR POTABLE WATER**

4 CHANGE THE FOLLOWING ITEMS FROM APPROVED (A) TO DISAPPROVED (X) FOR WATER
5 SERVICE:

6 ITEM 10: CPVC PLASTIC HOT AND COLD WATER DISTRIBUTION - ASTM D2846 (SDR 11)
7 CTS

8 ITEM 19A: POLYETHYLENE OF RAISED TEMPERATURE (PE-RT) PLASTIC HOT AND COLD-
9 WATER TUBING AND DISTRIBUTION SYSTEMS - ASTM F2769

10 ITEM 22: PEX PLASTIC HOT AND COLD WATER DISTRIBUTION - ASTM F877 (SDR 9)

11 **3.4.2 WATER SERVICE PIPING**

12 WATER SERVICE PIPING TO THE POINT OF ENTRANCE INTO THE BUILDING THROUGH A
13 FOUNDATION WALL OR FLOOR SHALL BE OF MATERIALS LISTED IN TABLE 3.4 AND
14 SHALL BE WATER PRESSURE RATED NOT LESS THAN 200 PSI AT 73 DEG F. SEE TABLE
15 3.4.2. THE REQUIREMENTS ARE MODIFIED AS FOLLOWS:

16 (1) PLASTIC WATER SERVICE PIPING SHALL BE RATED FOR NOT LESS THAN 200 PSIG AT
17 73°F IN ACCORDANCE WITH TABLE 3.4.2.

18 (2) TYPE M COPPER WATER TUBE IS NOT PERMITTED FOR WATER SERVICE PIPING.

19 **TABLE 3.4.2 PLASTIC WATER SERVICE PIPING** (RATED NOT LESS THAN 200 PSI AT 73
20 DEG F) - ON PAGE 31 HEREIN.

21 **TABLE 3.4.3 PLASTIC HOT AND COLD WATER DISTRIBUTION PIPING** - ON PAGE 33
22 HEREIN.

23 **TABLE 3.5 MATERIALS FOR SANITARY WASTE AND DRAIN**

24 TABLE 3.5 IS MODIFIED AS FOLLOWS: TYPE M COPPER WATER TUBE IS NOT PERMITTED
25 FOR SEWERS OUTSIDE OF BUILDINGS AND FOR UNDERGROUND PIPING WITHIN
26 BUILDINGS.

27 **TABLE 3.6 MATERIALS FOR VENT PIPING**

28 TABLE 3.6 IS MODIFIED AS FOLLOWS: TYPE M COPPER WATER TUBE IS PROHIBITED
29 UNDERGROUND.

30 **TABLE 3.7 MATERIALS FOR STORM DRAINAGE**

31 TABLE 3.7 IS MODIFIED AS FOLLOWS: TYPE M COPPER WATER TUBE IS PROHIBITED
32 UNDERGROUND.

33 **CHAPTER 4 JOINTS AND CONNECTIONS**

34 **4.2.4 SOLDERED**

1 F. FLUX FOR MAKING SOLDERED JOINTS IN "LEAD-FREE" PIPING SHALL BE RATED FOR
2 THE TEMPERATURES NECESSARY FOR MAKING JOINTS IN "LEAD-FREE" PIPING.

3 **4.3.9 PLASTIC DWV PIPE TO OTHER MATERIALS**

4 A. JOINTS BETWEEN PLASTIC DWV PIPE AND PIPING OF OTHER MATERIALS SHALL BE
5 MADE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS FOR THE PIPE AND
6 FITTINGS UNLESS PROHIBITED BY THIS CODE.

7 B. THREADED JOINTS: THREADED JOINTS FOR CONNECTING PLASTIC DRAINAGE
8 PIPING TO OTHER MATERIALS SHALL BE MADE WITH PROPER MALE OR FEMALE
9 THREADED PLASTIC ADAPTERS. JOINTS SHALL NOT BE OVER-TIGHTENED. AFTER HAND
10 TIGHTENING, ONE-HALF TO ONE FULL TURN SHALL BE MADE WITH A STRAP WRENCH.
11 *SEE FIGURE 4.3.9-A*

12 C. SOLID WALL PVC SCHEDULE 40 DWV PLASTIC PIPE INTO CAST-IRON HUB ENDS:
13 WHERE SOLID WALL PVC SCHEDULE 40 DWV PLASTIC PIPE IS CONNECTED TO A SERVICE
14 WEIGHT CAST-IRON HUB END, A HUB END ADAPTER SHALL BE LEAD CAULKED INTO THE
15 HUB OR INSERTED INTO A COMPRESSION GASKET IN THE HUB AND SOLVENT CEMENTED
16 TO THE PVC PIPE. ADAPTERS WITHOUT A CAULKING BEAD SHALL BE PERMITTED TO BE
17 LEAD CAULKED. WHERE SOLID WALL PVC SCHEDULE 40 DWV PLASTIC PIPE IS
18 CONNECTED TO AN EXTRA HEAVY CAST-IRON HUB END, THE JOINT SHALL BE PERMITTED
19 TO BE LEAD CAULKED OR INSERTED INTO A COMPRESSION GASKET IN THE HUB
20 WITHOUT AN ADAPTER. *SEE FIGURES 4.3.9-B THROUGH 4.3.9-D*

21 D. CELLULAR CORE PVC SCHEDULE 40 DWV PLASTIC PIPE INTO CAST-IRON HUB ENDS:
22 WHERE CELLULAR CORE PVC SCHEDULE 40 DWV PLASTIC PIPE IS CONNECTED TO A
23 SERVICE WEIGHT CAST-IRON HUB END, A HUB END ADAPTER SHALL BE LEAD CAULKED
24 INTO THE HUB OR INSERTED INTO A COMPRESSION GASKET IN THE HUB AND SOLVENT
25 CEMENTED TO THE PVC PIPE. ADAPTERS WITHOUT A CAULKING BEAD SHALL BE
26 PERMITTED TO BE LEAD CAULKED. WHERE CELLULAR CORE PVC SCHEDULE 40 DWV
27 PLASTIC PIPE IS CONNECTED TO AN EXTRA HEAVY CAST-IRON HUB END, THE JOINT
28 SHALL BE PERMITTED TO BE MADE WITH A COMPRESSION GASKET IN THE HUB WITHOUT
29 AN ADAPTER. CELLULAR CORE PLASTIC PIPE SHALL NOT BE LEAD CAULKED. *SEE*
30 *FIGURES 4.3.9-B THROUGH 4.3.9-D.*

31 E. PLASTIC PIPE TO GALVANIZED STEEL, COPPER OR STAINLESS STEEL DWV TUBE, OR
32 CAST-IRON SPIGOT ENDS: JOINTS BETWEEN PLASTIC PIPE AND THE LISTED MATERIALS
33 SHALL BE MADE WITH PROPER TRANSITION FITTINGS.

1 F. ABS AND PVC PLASTIC PIPE: SOLVENT CEMENTED NON-PRESSURE JOINTS
2 BETWEEN ABS AND PVC DWV PIPING SYSTEMS SHALL BE MADE WITH AN ASTM D3138
3 SOLVENT CEMENT INTENDED FOR SUCH TRANSITION JOINTS. TRANSITION CEMENT
4 SHALL NOT BE PERMITTED TO BE USED WITHIN BUILDINGS. TRANSITION JOINTS SHALL
5 BE A MINIMUM OF 3 FEET OUTSIDE OF BUILDINGS.

6 **CHAPTER 5 TRAPS, CLEANOUTS, AND BACKWATER VALVES**

7 **5.4.6 BUILDING DRAIN AND BUILDING SEWER JUNCTIONS AND THE PROPERTY LINE**

8 A. THERE SHALL BE A CLEANOUT NEAR THE JUNCTION OF A BUILDING DRAIN AND
9 BUILDING SEWER EITHER INSIDE OR OUTSIDE OF THE BUILDING WALL.

10 B. CLEANOUTS SHALL BE PLACED IN THE BUILDING SANITARY SEWER AND THE
11 BUILDING STORM SEWER AT THE PROPERTY LINE AND BROUGHT TO THE SURFACE. SEE
12 FIGURES 5.4.6-A AND 5.4.6-B.

13 **5.4.7 DIRECTION OF FLOW**

14 CLEANOUTS SHALL BE INSTALLED SO THAT THE CLEANOUT OPENS IN THE DIRECTION OF
15 FLOW OF THE DRAINAGE LINE. TWIN CLEANOUTS AND TWO-WAY CLEANOUTS DEPICTED
16 IN FIGURE 5.4.7 ARE PROHIBITED.

17 SEE FIGURE 5.4.7

18 **CHAPTER 6 LIQUID WASTE TREATMENT EQUIPMENT**

19 **6.2.1 GENERAL**

20 A. GREASE INTERCEPTORS SHALL COMPLY WITH THE REQUIREMENTS OF THIS
21 SECTION.

22 B. GREASE INTERCEPTORS INCLUDE THE FOLLOWING TYPES:

- 23 1. TYPE I HYDRO-MECHANICAL INTERCEPTORS
- 24 2. GREASE REMOVAL (OR RECOVERY) DEVICES (GRD)
- 25 3. TYPE II GRAVITY INTERCEPTORS

26 C. GREASE INTERCEPTORS SHALL BE PROVIDED TO RECEIVE THE WASTE DISCHARGES
27 FROM FIXTURES IN FOOD HANDLING AREAS THAT INTRODUCE GREASE INTO THE
28 SANITARY DRAINAGE SYSTEM. FIXTURES INCLUDE, BUT ARE NOT LIMITED TO POT
29 WASHING SINKS, UTENSIL SOAK SINKS, PRE-RINSE SINKS AT DISHWASHERS, WOK RANGE
30 STATIONS, DRAINS FROM WASH-DOWN VENTILATION HOODS, CAN WASHING DRAINS,
31 MOP SINKS, FLOOR DRAINS AND FLOOR SINKS IN AREAS AROUND GREASE PRODUCING
32 FIXTURES, AND SIMILAR FIXTURES.

33 D. WATER CLOSETS, URINALS, AND OTHER FIXTURES THAT DISCHARGE HUMAN
34 WASTE SHALL NOT DISCHARGE THROUGH A GREASE INTERCEPTOR.

1 E. NON-GREASE DRAINAGE FROM HAND WASHING SINKS, LAVATORIES, FOOD
2 PREPARATION SINKS, ICE MACHINES, ICE BINS, AND SIMILAR FIXTURES SHALL BE
3 PERMITTED TO DISCHARGE THROUGH A GREASE INTERCEPTOR ALONG WITH GREASE
4 PRODUCING FIXTURES.

5 F. ICE MACHINES, ICE BINS, FOOD PREPARATION SINKS, AND OTHER FOOD
6 CONTAINING EQUIPMENT SHALL DRAIN INDIRECTLY THROUGH AN AIR GAP.

7 **6.2.1.3 TYPE II GRAVITY GREASE INTERCEPTORS**

8 A. OUTDOOR UNDERGROUND GRAVITY GREASE INTERCEPTORS SERVING
9 COMMERCIAL KITCHENS SHALL BE SIZED AND DESIGNED BY A REGISTERED DESIGN
10 PROFESSIONAL WHO IS LICENSED TO PRACTICE IN THE STATE OF MARYLAND.

11 B. GRAVITY GREASE INTERCEPTORS SHALL COMPLY WITH THE REQUIREMENTS OF
12 SECTION 6.2.10.B, INCLUDING MATERIALS OF CONSTRUCTION, ARRANGEMENT,
13 RETENTION TIME, STORAGE FACTOR FOR FLOATABLE FOG AND SETTLED SOLIDS, AND
14 MINIMUM SIZE.

15 C. WHERE DRAIN PIPING AND A GRAVITY GREASE INTERCEPTOR ARE PROVIDED FOR
16 THE FUTURE INSTALLATION OF A COMMERCIAL KITCHEN, THE DESIGN PLANS SHALL
17 INDICATE THE MAXIMUM PERMITTED FUTURE LOAD IN EITHER GALLONS PER MINUTE
18 (EXCLUDING DIVERSITY) OR DRAINAGE FIXTURE UNITS (DFU).

19 **6.2.7 LOCATION**

20 HYDRO-MECHANICAL AND GRD INTERCEPTORS SHALL BE PERMITTED TO BE INSTALLED
21 WITHIN BUILDINGS. WHERE GRAVITY GREASE INTERCEPTORS OR HOLDING TANKS ARE
22 REMOTE FROM THE FIXTURES SERVED, THE DRAIN PIPING BETWEEN THE FIXTURES AND
23 THE INTERCEPTOR OR HOLDING TANK SHALL BE AS DIRECT AS POSSIBLE AND SHALL
24 INCLUDE PROVISIONS FOR PERIODIC CLEANING.

25 **6.2.10 INTERCEPTOR SIZING**

26 A. WHERE HYDRO-MECHANICAL INTERCEPTORS AND GREASE REMOVAL DEVICES
27 (GRD) SERVE ONE OR MORE INDIVIDUAL FIXTURES, THEY SHALL BE SIZED FOR THE
28 TOTAL DRAINAGE FLOW RATE FROM THE FIXTURES SERVED IN ACCORDANCE WITH PDI
29 G101, TABLE 6.2.10, OR THE MANUFACTURER'S INSTRUCTIONS. ALL COMPARTMENTS OF
30 MULTI-COMPARTMENT SINKS SHALL BE CONSIDERED TO DRAIN SIMULTANEOUSLY,
31 EXCEPT THAT SANITIZING COMPARTMENTS SHALL NOT BE DRAINED THROUGH A
32 GREASE INTERCEPTOR.

33 B. GRAVITY INTERCEPTORS FOR COMMERCIAL KITCHENS SHALL BE SIZED BASED ON
34 THE INLET PIPE FLOWING HALF-FULL ACCORDING TO APPENDIX K, A 30-MINUTE

1 RETENTION TIME, AND AN ADDITIONAL 25% STORAGE FACTOR FOR FLOATABLE FOG AND
2 SETTLED SOLIDS.

3 **6.2.12 COMBINATION SYSTEMS**

4 COMBINATION OF HYDRO-MECHANICAL AND EXTERIOR GRAVITY GREASE
5 INTERCEPTORS SHALL BE ALLOWED IN ORDER TO MEET SEPARATION NEEDS OF THE
6 AUTHORITY HAVING JURISDICTION WHEN SPACE OR EXISTING PHYSICAL
7 CONSTRAINTS OF EXISTING BUILDINGS NECESSITATES SUCH INSTALLATIONS

8 **CHAPTER 7**

9 **PLUMBING FIXTURES, FIXTURE FITTINGS, AND PLUMBING APPLIANCES**

10 **7.1 FIXTURE STANDARDS**

11 **7.1.1 GENERAL**

12 PLUMBING FIXTURES, PLUMBING FIXTURE TRIM, AND PLUMBING APPLIANCES SHALL
13 COMPLY WITH THE STANDARDS LISTED IN TABLE 3.1.3.

14 **7.1.2 FIXTURE FAUCETS AND OTHER END-USE DEVICES**

15 A. FIXTURE FAUCETS AND OTHER END-USE DEVICES THAT SUPPLY POTABLE WATER
16 FOR HUMAN CONSUMPTION BY DRINKING OR COOKING SHALL BE "LEAD-FREE" IN
17 ACCORDANCE WITH SECTION 3.4.6.

18 B. FIXTURE FAUCETS AND OTHER END-USE DEVICES THAT MUST BE "LEAD-FREE" AND
19 ARE WITHIN THE SCOPE OF NSF 61 SHALL COMPLY WITH THE REQUIREMENTS OF NSF 61
20 AND EITHER ITS ANNEX G OR NSF 372.

21 C. FIXTURE FAUCETS AND OTHER END-USE DEVICES THAT MUST BE "LEAD-FREE" BUT
22 ARE NOT WITHIN THE SCOPE OF NSF 61 SHALL COMPLY WITH NSF 372.

23 D. FIXTURE FAUCETS AND OTHER END-USE DEVICES THAT ARE NOT REQUIRED TO BE
24 "LEAD-FREE" SHALL BE RATED FOR USE WITH POTABLE WATER AND SHALL NOT
25 CONTAIN MORE THAN 4% LEAD.

26 **7.2 FIXTURES FOR ACCESSIBLE USE**

27 PLUMBING FIXTURES FOR ACCESSIBLE USE AND THEIR INSTALLATION SHALL CONFORM
28 TO THE REQUIREMENTS OF THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN AND THE
29 APPLICABLE MARYLAND STATE REGULATIONS.

30 **7.13 ELECTRICAL BONDING AND GROUNDING**

31 **7.13.1 GAS PIPING AND TUBING, INCLUDING CSST.** EACH ABOVEGROUND PORTION OF A
32 GAS PIPING SYSTEM THAT IS LIKELY TO BECOME ENERGIZED SHALL BE ELECTRICALLY
33 CONTINUOUS AND BONDED TO AN EFFECTIVE GROUND-FAULT CURRENT PATH. GAS
34 PIPING SHALL BE CONSIDERED TO BE BONDED WHEN IT IS CONNECTED TO APPLIANCES

1 THAT ARE CONNECTED TO THE APPLIANCE GROUNDING CONDUCTOR OF THE CIRCUIT
2 SUPPLYING THAT APPLIANCE.

3 **7.13.2 CSST WITHOUT AN ARC-RESISTANT JACKET.** GAS PIPING SYSTEMS THAT
4 CONTAIN ONE OR MORE SEGMENTS OF CSST WITHOUT ARC-RESISTANT JACKETS SHALL
5 BE BONDED IN ACCORDANCE WITH THIS SECTION. CSST GAS PIPING WITHOUT AN ARC-
6 RESISTANT JACKET SHALL REQUIRE AN ADDITIONAL BOND TO THE ELECTRICAL SERVICE
7 GROUNDING ELECTRODE SYSTEM. THE BONDING JUMPER SHALL CONNECT TO A
8 METALLIC PIPE OR FITTING BETWEEN THE POINT OF GAS DELIVERY AND THE FIRST
9 DOWNSTREAM CSST FITTING. THE BONDING JUMPER SHALL NOT BE LESS THAN 6 AWG
10 COPPER WIRE OR EQUIVALENT.

11 **7.13.3 CSST WITH AN ARC-RESISTANT JACKET.** CSST GAS PIPING WITH AN ARC-
12 RESISTANT JACKET THAT IS LISTED BY AN APPROVED AGENCY FOR INSTALLATION
13 WITHOUT THE DIRECT BONDING REQUIRED BY SECTION 7.13.2 SHALL BE INSTALLED IN
14 ACCORDANCE WITH SECTION 7.13.1 AND THE MANUFACTURER'S INSTALLATION
15 INSTRUCTIONS.

16 **7.13.4 PROHIBITED USE.** GAS PIPING SHALL NOT BE USED AS A GROUNDING CONDUCTOR
17 OR ELECTRODE.

18 **7.13.5 LIGHTNING PROTECTION SYSTEMS.** WHERE A LIGHTNING PROTECTION SYSTEM
19 IS INSTALLED IN A BUILDING, THE BONDING OF THE GAS PIPING SHALL BE IN
20 ACCORDANCE WITH NFPA 780, *STANDARD FOR THE INSTALLATION OF LIGHTNING*
21 *PROTECTION SYSTEMS.*

22 **CHAPTER 10 WATER SUPPLY AND DISTRIBUTION**

23 **10.1 QUALITY OF WATER SUPPLY**

24 A. ONLY POTABLE WATER SHALL BE SUPPLIED TO PLUMBING FIXTURES USED FOR
25 DRINKING, BATHING, CULINARY USE, LAUNDRY USE, CLEANING, OR THE PROCESSING OF
26 FOOD, MEDICAL, OR PHARMACEUTICAL PRODUCTS.

27 **10.2 WATER SERVICE PIPING**

28 WATER SERVICE PIPING SHALL BE AS LISTED IN TABLE 3.4 AND TABLE 3.4.2. WATER
29 SERVICE PIPING SHALL BE NOT LESS THAN 3/4" PIPE SIZE.

30 **10.5.9 PROTECTION FROM FIRE SYSTEMS**

31 A. POTABLE WATER SUPPLIES TO WATER-BASED FIRE PROTECTION SYSTEMS,
32 INCLUDING BUT NOT LIMITED TO STANDPIPES AND AUTOMATIC SPRINKLER SYSTEMS,
33 SHALL BE PROTECTED FROM BACK PRESSURE AND BACK SIPHONAGE BY ONE OF THE
34 FOLLOWING TESTABLE DEVICES:

1 1. DOUBLE CHECK FIRE PROTECTION BACKFLOW PREVENTION ASSEMBLY - ASSE 1015
2 (DCF)

3 2. DOUBLE CHECK DETECTOR FIRE PROTECTION BACKFLOW PREVENTION ASSEMBLY -
4 ASSE 1048 (DCDA OR DCDA-II).

5 3. REDUCED PRESSURE PRINCIPLE FIRE PROTECTION BACKFLOW PREVENTION
6 ASSEMBLY - ASSE 1013 (RPF)

7 4. REDUCED PRESSURE DETECTOR FIRE PROTECTION BACKFLOW PREVENTION
8 ASSEMBLY - ASSE 1047 (RPDA OR RPDA-II).

9 EXCEPTIONS

10 (1) ASSE 1024 DUAL CHECK BACKFLOW PREVENTERS SHALL BE PERMITTED IN STAND-
11 ALONE RESIDENTIAL FIRE SPRINKLER SYSTEMS THAT COMPLY WITH NFPA 13D OR NFPA
12 13R, DO NOT SUPPLY PLUMBING FIXTURES, AND DO NOT INCLUDE A FIRE DEPARTMENT
13 CONNECTION.

14 (2) BACKFLOW PREVENTERS SHALL NOT BE REQUIRED IN NFPA 13D OR NETWORK
15 RESIDENTIAL FIRE SPRINKLER SYSTEMS THAT SUPPLY BOTH PLUMBING FIXTURES AND
16 RESIDENTIAL FIRE SPRINKLERS. THE PIPING IN SUCH SYSTEMS SHALL BE APPROVED FOR
17 POTABLE WATER. SUCH SYSTEMS SHALL NOT HAVE A FIRE DEPARTMENT CONNECTION.

18 (3) ASSE 1024 DUAL CHECK BACKFLOW PREVENTERS SHALL BE PERMITTED IN LIMITED
19 AREA FIRE SPRINKLER SYSTEMS THAT COMPLY WITH NFPA 13 AND DO NOT HAVE A FIRE
20 DEPARTMENT CONNECTION.

21 (4) WHERE FIRE PROTECTION SYSTEMS INCLUDE A FIRE DEPARTMENT CONNECTION,
22 ASSE 1013 REDUCED PRESSURE PRINCIPLE FIRE PROTECTION BACKFLOW PREVENTERS
23 (RPF) OR ASSE 1047 REDUCED PRESSURE DETECTOR FIRE PROTECTION BACKFLOW
24 PREVENTION ASSEMBLIES (RPDA OR RPDA-II) SHALL BE REQUIRED UNLESS DOUBLE
25 CHECK VALVE ASSEMBLIES (DCF OR DCDF) ARE PROPOSED AND ARE APPROVED BY THE
26 AUTHORITY HAVING JURISDICTION.

27 (5) WHERE FIRE PROTECTION SYSTEMS ARE FILLED WITH SOLUTIONS THAT ARE
28 CONSIDERED TO BE HEALTH HAZARDS AS DEFINED IN SECTION 1.2, ASSE 1013 REDUCED
29 PRESSURE PRINCIPLE FIRE PROTECTION BACKFLOW PREVENTERS (RPF) OR ASSE 1047
30 REDUCED PRESSURE DETECTOR FIRE PROTECTION BACKFLOW PREVENTION ASSEMBLIES
31 (RPDA OR RPDA-II) SHALL BE REQUIRED.

32 (6) THE AUTHORITY HAVING JURISDICTION MAY PERMIT A SINGLE CHECK VALVE TO
33 PROVIDE BACKFLOW PROTECTION FOR A RESIDENTIAL FIRE SPRINKLER SYSTEM IF
34 THERE IS INSUFFICIENT PUBLIC WATER PRESSURE FOR A CONVENTIONAL BACKFLOW

1 PREVENTION DEVICE AND THE INSTALLATION COMPLIES WITH ALL REQUIREMENTS OF
2 SECTION 10.5.9.1.

3 B. WHENEVER A BACKFLOW PREVENTION DEVICE IS INSTALLED IN A POTABLE WATER
4 SUPPLY TO A FIRE PROTECTION SYSTEM, THE HYDRAULIC DESIGN OF THE FIRE
5 PROTECTION SYSTEM SHALL ACCOUNT FOR THE PRESSURE DROP THROUGH THE
6 BACKFLOW PREVENTION DEVICE.

7 C. IF A BACKFLOW PREVENTION DEVICE IS RETROFITTED FOR AN EXISTING FIRE
8 PROTECTION SYSTEM, THE HYDRAULICS OF THE FIRE PROTECTION SYSTEM SHALL BE
9 CHECKED TO VERIFY THAT THERE WILL BE SUFFICIENT WATER PRESSURE AVAILABLE
10 FOR SATISFACTORY OPERATION OF THE FIRE PROTECTION SYSTEM WITH THE
11 BACKFLOW PREVENTION DEVICE IN PLACE.

12 **10.5.9.1 INSUFFICIENT PUBLIC WATER PRESSURE FOR A RESIDENTIAL SPRINKLER**
13 **SYSTEM**

14 IF THE MINIMUM AVAILABLE WATER PRESSURE IN A PUBLIC WATER SUPPLY IS
15 INSUFFICIENT TO OVERCOME THE RATED PRESSURE DROP FOR THE REQUIRED
16 BACKFLOW DEVICE LISTED IN SECTION 10.5.9 FOR A RESIDENTIAL FIRE SPRINKLER
17 SYSTEM, THE AUTHORITY HAVING JURISDICTION MAY PERMIT THE INSTALLATION OF A
18 SINGLE CHECK VALVE FOR BACKFLOW PROTECTION IF ALL OF THE FOLLOWING
19 CONDITIONS ARE MET:

- 20 1. THE FIRE SPRINKLER SYSTEM IS DESIGNED ACCORDING TO NFPA 13D - *INSTALLATION*
21 *OF SPRINKLER SYSTEMS IN ONE-AND TWO-FAMILY DWELLINGS*.
- 22 2. THE PIPING MATERIALS IN THE FIRE SPRINKLER SYSTEM, INCLUDING THE
23 SPRINKLERS, ARE APPROVED FOR POTABLE WATER SUITABLE FOR HUMAN
24 CONSUMPTION BY DRINKING OR COOKING IN ACCORDANCE WITH SECTION 3.4.6.
- 25 3. THE WATER METER IS INCREASED TO 1" MINIMUM SIZE.
- 26 4. THE WATER SERVICE IS INCREASED TO 1-1/2" MINIMUM PIPE SIZE.
- 27 5. THE SHUTOFF VALVE FOR THE FIRE SPRINKLER SYSTEM IS A GATE VALVE, FULL-
28 PORTED BALL VALVE, OR OTHER FULL-WAY VALVE.
- 29 6. THE FIRE SPRINKLER SYSTEM IS FILLED WITH POTABLE WATER AND CONTAINS NO
30 ANTI-FREEZE SOLUTIONS OR OTHER CHEMICAL ADDITIVES.
- 31 7. THE CHECK VALVE IS RESILIENTLY SEATED AND IS APPROVED BY THE AUTHORITY
32 HAVING JURISDICTION.
- 33 8. PRESSURE GAUGES ARE INSTALLED IN THE INLET AND OUTLET SIDES OF THE CHECK
34 VALVE TO INDICATE BACKFLOW PAST THE VALVE SEAT.

1 **10.9.2 DISINFECTING**

2 A. THE WATER SERVICE PIPING AND THE HOT AND COLD WATER DISTRIBUTION PIPING
3 IN NEW OR RENOVATED POTABLE WATER SYSTEMS SHALL BE DISINFECTED AFTER
4 FLUSHING AND PRIOR TO USE. THE PROCEDURE USED SHALL BE AS FOLLOWS OR AN
5 APPROVED EQUIVALENT:

- 6 1. ALL WATER OUTLETS SHALL BE POSTED TO WARN AGAINST USE DURING
7 DISINFECTING OPERATIONS.
- 8 2. DISINFECTING SHALL BE PERFORMED BY PERSONS EXPERIENCED IN SUCH WORK.
- 9 3. THE WATER SUPPLY TO THE PIPING SYSTEM OR PARTS THEREOF BEING DISINFECTED
10 SHALL BE VALVED-OFF FROM THE NORMAL WATER SOURCE TO PREVENT THE
11 INTRODUCTION OF DISINFECTING AGENTS INTO A PUBLIC WATER SUPPLY OR PORTIONS
12 OF A SYSTEM THAT ARE NOT BEING DISINFECTED.
- 13 4. THE PIPING SHALL BE DISINFECTED WITH A WATER-CHLORINE SOLUTION. DURING
14 THE INJECTION OF THE DISINFECTING AGENT INTO THE PIPING, EACH OUTLET SHALL BE
15 FULLY OPENED SEVERAL TIMES UNTIL A CONCENTRATION OF NOT LESS THAN 50 PARTS
16 PER MILLION CHLORINE IS PRESENT AT EVERY OUTLET. THE SOLUTION SHALL BE
17 ALLOWED TO STAND IN THE PIPING FOR AT LEAST 24 HOURS.
- 18 5. AN ACCEPTABLE ALTERNATE TO THE 50 PPM/24-HOUR PROCEDURE DESCRIBED IN
19 SECTION 10.9.2.A.4 SHALL BE TO MAINTAIN A LEVEL OF NOT LESS THAN 200 PARTS PER
20 MILLION CHLORINE FOR NOT LESS THAN THREE HOURS. IF THIS ALTERNATE
21 PROCEDURE IS USED, THE HEAVILY CONCENTRATED CHLORINE SHALL NOT BE
22 ALLOWED TO STAND IN THE PIPING SYSTEM FOR MORE THAN 6 HOURS. ALSO, SPECIAL
23 PROCEDURES SHALL BE USED TO DISPOSE OF THE HEAVILY CONCENTRATED CHLORINE
24 IN AN ENVIRONMENTALLY ACCEPTABLE AND APPROVED MANNER.
- 25 6. AT THE END OF THE REQUIRED RETENTION TIME, THE RESIDUAL LEVEL OF
26 CHLORINE AT EVERY OUTLET SHALL BE NOT LESS THAN FIVE PARTS PER MILLION. IF
27 THE RESIDUAL IS LESS THAN FIVE PARTS PER MILLION, THE DISINFECTING PROCEDURE
28 SHALL BE REPEATED UNTIL THE REQUIRED MINIMUM CHLORINE RESIDUAL IS
29 OBTAINED AT EVERY OUTLET.
- 30 7. AFTER THE REQUIRED RESIDUAL CHLORINE LEVEL IS OBTAINED AT EVERY OUTLET,
31 THE SYSTEM SHALL BE FLUSHED TO REMOVE THE DISINFECTING AGENT. FLUSHING
32 SHALL CONTINUE UNTIL THE CHLORINE LEVEL AT EVERY OUTLET IS REDUCED TO THAT
33 OF THE INCOMING WATER SUPPLY.

1 8. ANY FAUCET AERATORS OR SCREENS THAT WERE REMOVED UNDER SECTION 10.9.1
2 SHALL BE REPLACED.

3 9. A CERTIFICATION OF PERFORMANCE AND LABORATORY TEST REPORT SHOWING THE
4 ABSENCE OF COLIFORM ORGANISMS SHALL BE SUBMITTED TO THE AUTHORITY HAVING
5 JURISDICTION UPON SATISFACTORY COMPLETION OF THE DISINFECTING OPERATIONS.

6 **10.9.3 ADDITIONS TO EXISTING SYSTEMS**

7 A. WHERE NEW PIPING IS REQUIRED TO BE FLUSHED AND DISINFECTED, IF A NEW
8 ADDITION OR ADDITIONS TO AN EXISTING DOMESTIC WATER PIPING SYSTEM CAN BE
9 COMPLETELY ISOLATED FROM THE EXISTING SYSTEM FOR THE PURPOSE OF FLUSHING
10 AND DISINFECTING, ONLY THE NEW PIPING SHALL BE REQUIRED TO BE FLUSHED AND
11 DISINFECTED.

12 B. WHERE NEW PIPING CANNOT BE ISOLATED FROM THE EXISTING POTABLE WATER
13 PIPING SYSTEM, BOTH THE NEW AND EXISTING PIPING SHALL BE FLUSHED AND
14 DISINFECTED.

15 **10.14.3 SIZING WATER DISTRIBUTION PIPING**

16 A. THE SUPPLY DEMAND IN GALLONS PER MINUTE IN THE BUILDING HOT AND COLD
17 WATER DISTRIBUTION SYSTEM SHALL BE DETERMINED ON THE BASIS OF THE LOAD IN
18 TERMS OF WATER SUPPLY FIXTURE UNITS (WSFU) AS SHOWN IN TABLE 10.14.2A AND THE
19 RELATIONSHIP BETWEEN THE LOAD IN WSFU AND THE SUPPLY DEMAND IN GALLONS
20 PER MINUTE (GPM) AS SHOWN IN TABLE 10.14.2B. REFER TO APPENDIX M FOR A MORE
21 DETAILED TABLE OF WSFU AND EQUIVALENT GPM. FOR FIXTURES HAVING BOTH HOT
22 WATER AND COLD WATER CONNECTIONS, THE SEPARATE HOT AND COLD WATER
23 LOADS SHALL BE TAKEN AS 75% OF THE LISTED WSFU VALUE.

24 B. MAIN RISERS AND BRANCHES OF THE WATER DISTRIBUTION SYSTEM SHALL BE
25 SIZED BASED ON THE MINIMUM AVAILABLE WATER PRESSURE AT THE SOURCE, ANY
26 ELEVATION DIFFERENCES BETWEEN THE SOURCE AND THE FIXTURES, PRESSURE
27 LOSSES IN THE DISTRIBUTION SYSTEM, AND THE PRESSURE (WITH FLOW) REQUIRED AT
28 EACH CONNECTION OF THE FIXTURE SUPPLY BRANCHES.

29 EXCEPTION: THE MINIMUM SIZE OF WATER SUPPLY MAINS, RISERS, OR BRANCH PIPES
30 SERVING TWO OR MORE PLUMBING FIXTURES, APPLIANCES, OR OUTLET CONNECTIONS
31 SHALL BE 3/4".

32 **10.15.6 MIXED WATER TEMPERATURE CONTROL**

33 K. WHERE A MIXED WATER TEMPERATURE CONTROL DEVICE SUPPLIES ONE OR MORE
34 OUTLETS THAT CAN BE SHUTOFF DOWNSTREAM FROM THE CONTROL DEVICE, THE

1 CONTROL DEVICE SHALL INCLUDE INTEGRAL CHECK VALVES OR CHECK VALVES SHALL
2 BE PROVIDED IN THE HOT AND COLD WATER SUPPLIES TO THE CONTROL DEVICE OR AT
3 ITS INLETS TO PREVENT CROSS FLOW THROUGH THE DEVICE.

4 EXCEPTION: CHECK VALVES SHALL NOT BE REQUIRED WHERE THE CONTROL DEVICE IS
5 LOCATED AT THE HOT WATER HEATER AND IS CONNECTED TO THE HOT AND COLD
6 WATER PIPING THAT IS CONNECTED TO THE HEATER.

7 **10.15.9.2 CONSTRUCTION**

8 A. DRIP PANS SHALL BE WATERTIGHT AND CONSTRUCTED OF CORROSION-RESISTANT
9 MATERIALS. GALVANIZED STEEL PANS SHALL BE 24 GAUGE (0.0276-INCH) MINIMUM
10 THICKNESS. ALUMINUM PANS SHALL BE 20 GAUGE (0.0320-INCH) MINIMUM THICKNESS.
11 NON-METALLIC PANS SHALL BE 0.0625-INCH MINIMUM THICKNESS. PANS SHALL BE NOT
12 LESS THAN 1-1/2" DEEP, BUT SHALL NOT BE DEEPER THAN THE BOTTOM OF THE WATER
13 HEATER TANK OR HOT WATER STORAGE TANK. THEY SHALL BE OF SUFFICIENT SIZE TO
14 HOLD THE HEATER OR TANK WITHOUT INTERFERING WITH DRAIN VALVES, BURNERS,
15 CONTROLS, AND ANY REQUIRED ACCESS.

16 B. HIGH IMPACT PLASTIC PANS SHALL BE PERMITTED UNDER GAS-FIRED WATER
17 HEATERS WHERE THE HEATER IS LISTED TO ZERO CLEARANCE TO COMBUSTIBLE FLOORS
18 AND THE APPLICATION IS RECOMMENDED BY THE PAN MANUFACTURER.

19 **10.15.9.3 DRAINAGE**

20 A. DRIP PANS SHALL HAVE DRAIN OUTLETS NOT LESS THAN 3/4" SIZE, WITH INDIRECT
21 DRAIN PIPES EXTENDING TO AN APPROVED POINT OF DISCHARGE, A SUITABLY
22 LOCATED INDIRECT WASTE RECEPTOR, OR FLOOR DRAIN. DRIP PANS MAY EXTEND TO
23 WITHIN 2 TO 6 INCHES ABOVE THE ADJACENT FLOOR WHERE APPROVED BY THE
24 AUTHORITY HAVING JURISDICTION.

25 B. DISCHARGE FROM A RELIEF VALVE INTO A WATER HEATER PAN SHALL BE
26 PERMITTED IF THE DRAIN SIZE FROM THE DRIP PAN IS THE SAME DIAMETER OR
27 GREATER THAN THE P&T DISCHARGE PIPE AND THE P&T DISCHARGE PIPE INTO THE
28 DRIP PAN IS BETWEEN 2 INCHES AND 6 INCHES TO THE BOTTOM OF THE PAN. FOR DRIP
29 PANS INSTALLED UNDER WATER HEATERS THAT ARE LOCATED ABOVE CEILINGS, THE
30 DRAIN PIPE FROM THE DRIP PAN SHALL EXTEND TO A POINT OF DISPOSAL OR INDIRECT
31 WASTE THAT IS READILY OBSERVABLE IN AN AREA BELOW THE HEATER.

32 **10.16.7 VACUUM RELIEF VALVES FOR WATER HEATERS AND WATER STORAGE** 33 **PRESSURE TANKS**

1 A. WHERE WATER DISTRIBUTION PIPING CAN SIPHON WATER FROM A WATER HEATER
2 AND CAUSE DRY-FIRING OR CAUSE A WATER HEATER OR WATER STORAGE PRESSURE
3 TANK TO COLLAPSE OR BE DAMAGED BY VACUUM, VACUUM RELIEF SHALL BE
4 PROVIDED.

5 B. THE VACUUM RELIEF REQUIREMENTS FOR WATER HEATERS SHALL DEPEND ON THE
6 TYPE OF WATER HEATER, THE RELATIVE ELEVATION OF ITS INLET AND OUTLET PIPING,
7 THE RELATIVE ELEVATION OF ITS WATER SUPPLY SOURCE, AND THE RELATIVE
8 ELEVATION OF THE LOWEST HOT AND COLD WATER SUPPLY OUTLETS CONNECTED TO
9 THE PIPING ASSOCIATED WITH THE WATER HEATER, IN ACCORDANCE WITH THE
10 FOLLOWING:

11 1. WHERE THE HEATING ELEMENT FOR THE WATER HEATER IS LOCATED IN OR BELOW
12 THE LOWER HALF OF ITS TANK AND THE WATER HEATER HAS TOP WATER PIPE
13 CONNECTIONS, VACUUM RELIEF SHALL NOT BE REQUIRED IF THE PIPING ASSOCIATED
14 WITH THE WATER HEATER IS NOT CONNECTED TO ANY HOT AND COLD WATER OUTLETS
15 ON FLOOR LEVELS BELOW THAT ON WHICH THE WATER HEATER IS INSTALLED. IF THE
16 WATER HEATER SERVES OUTLETS ON A FLOOR LEVEL BELOW THAT ON WHICH IT IS
17 INSTALLED, A VACUUM RELIEF VALVE SHALL BE INSTALLED ON EITHER THE COLD
18 WATER INLET PIPE OR THE HOT WATER OUTLET PIPE THAT IS ABOVE THE TOP OF THE
19 HEATER.

20 EXCEPTION: WHERE WATER HEATERS ARE ELEVATED ABOVE THE FLOOR OR A CEILING,
21 VACUUM RELIEF VALVES SHALL BE PROVIDED IF IT IS CONNECTED TO HOT AND COLD
22 WATER OUTLETS ON THE SAME FLOOR LEVEL OR BELOW.

23 2. WHERE A WATER HEATER HAS A HEATING ELEMENT IN THE UPPER HALF OF ITS TANK
24 AND THE PIPING ASSOCIATED WITH THE WATER HEATER IS CONNECTED TO ANY HOT OR
25 COLD WATER OUTLETS ON THE SAME FLOOR LEVEL ON WHICH THE WATER HEATER IS
26 INSTALLED OR ON A LOWER FLOOR LEVEL, ITS COLD WATER SUPPLY AND HOT WATER
27 DISCHARGE PIPES SHALL BE ABOVE THE TOP OF THE WATER HEATER AND A VACUUM
28 RELIEF VALVE SHALL BE INSTALLED ON EITHER THE COLD WATER INLET PIPE OR THE
29 HOT WATER OUTLET PIPE WITH ITS INLET AT LEAST 6-INCHES ABOVE THE TOP OF THE
30 HEATER.

31 3. WHERE A WATER HEATER HAS A BOTTOM INLET, THE COLD WATER SUPPLY PIPE TO
32 THE HEATER SHALL BE ABOVE THE TOP OF THE HEATER TANK BEFORE IT DROPS TO THE
33 BOTTOM INLET AND A VACUUM RELIEF VALVE SHALL BE INSTALLED ON THAT SUPPLY

1 LINE BEFORE IT DROPS WITH THE RELIEF VALVE INLET AT LEAST 6-INCHES ABOVE THE
2 TOP OF THE HEATER TANK.

3 EXCEPTION: VACUUM RELIEF SHALL NOT BE REQUIRED IF THE ELEVATION OF THE
4 WATER SUPPLY SOURCE FOR THE FACILITY IS ABOVE THE TOP OF THE HEATER TANK
5 AND THERE ARE NO COLD WATER OUTLETS IN THE SUPPLY PIPING FROM THAT SOURCE
6 THAT ARE BELOW THE TOP OF THE HEATER TANK.

7 4. WHERE A WATER HEATER HAS A BOTTOM OUTLET, THE HOT WATER OUTLET PIPE
8 FROM THE HEATER SHALL BE EXTENDED UP TO ABOVE THE TOP OF THE HEATER AND A
9 VACUUM RELIEF VALVE SHALL BE INSTALLED ON THAT OUTLET PIPE ABOVE THE TOP OF
10 THE TANK WITH THE RELIEF VALVE INLET AT LEAST 6-INCHES ABOVE THE TOP OF THE
11 HEATER TANK.

12 EXCEPTION: VACUUM RELIEF SHALL NOT BE REQUIRED IF THERE ARE NO OUTLETS IN
13 THE HOT WATER PIPING FROM THE WATER HEATER THAT ARE BELOW THE TOP OF THE
14 HEATER TANK.

15 5. WHERE A WATER HEATER IS SUBJECT TO VACUUM FROM ITS HOT WATER DISCHARGE
16 PIPING, A DIP TUBE WITH A VENT OPENING SHALL NOT BE CONSIDERED AS ADEQUATE
17 VACUUM RELIEF.

18 C. VACUUM RELIEF VALVES SHALL COMPLY WITH ANSI Z21.22/CSA 4.4 AND BE RATED
19 FOR NOT LESS THAN 210°F.

20 D. VACUUM RELIEF VALVES SHALL BE THE FULL SIZE OF THE WATER HEATER PIPE
21 CONNECTION THAT IT IS ASSOCIATED WITH AND SHALL BE INSTALLED ON PIPING THAT
22 IS ABOVE THE TOP OF THE HEATER TANK.

23 E. VACUUM RELIEF VALVES SHALL NOT BE ISOLATED FROM THE WATER HEATER BY
24 SHUTOFF VALVES FOR THE WATER HEATER.

25 F. VACUUM RELIEF FOR A WATER STORAGE PRESSURE TANK SHALL BE THE SAME AS
26 REQUIRED FOR A WATER HEATER UNLESS THE TANK, INCLUDING ANY LINING, IS RATED
27 FOR FULL VACUUM.

28 **10.20.1 WHERE PERMITTED**

29 NFPA 13D MULTIPURPOSE RESIDENTIAL FIRE SPRINKLER SYSTEMS ARE APPROVED BY
30 THE AUTHORITY HAVING JURISDICTION FOR PLUMBING UNDER THIS CODE AND BY THE
31 AUTHORITY HAVING JURISDICTION FOR FIRE PROTECTION SYSTEMS.

32 **10.20 NFPA 13D MULTIPURPOSE RESIDENTIAL FIRE SPRINKLER SYSTEMS**

33 **10.20.2 GENERAL**

1 F. NFPA 13D MULTIPURPOSE PIPING SYSTEMS SHALL COMPLY WITH THE "LEAD-FREE"
2 REQUIREMENTS OF THIS CODE IF THE PIPING, INCLUDING PARALLEL LOOPED BRANCHES,
3 SUPPLIES ONE OR MORE END-USE DEVICES OR EQUIPMENT THAT ARE REQUIRED TO BE
4 "LEAD-FREE" BY SECTION 3.4.6. THE FIRE SPRINKLERS IN SUCH PIPING SHALL BE "LEAD-
5 FREE".

6 EXCEPTIONS:

7 (1) SPRINKLER-ONLY BRANCH SUPPLY PIPING TO ONE OR MORE INDIVIDUAL
8 SPRINKLERS.

9 (2) SPRINKLERS SUPPLIED BY INDIVIDUAL SPRINKLER-ONLY BRANCH PIPING.

10 (3) PLUMBING-ONLY BRANCH SUPPLY PIPING TO END-USE DEVICES OR EQUIPMENT
11 THAT ARE NOT REQUIRED TO BE "LEAD-FREE".

12 **10.20.4 MATERIALS FOR COMBINED SYSTEM PIPING**

13 A. PIPING MATERIALS SHALL BE IN ACCORDANCE WITH THIS SECTION AND BE LISTED,
14 AS DEFINED IN NFPA 13D, FOR BOTH RESIDENTIAL FIRE SPRINKLER SERVICE AND
15 POTABLE WATER DISTRIBUTION.

16 B. COPPER PIPING SHALL BE ASTM B88 COPPER WATER TUBE, TYPE L OR K. FITTINGS
17 SHALL BE THE SOLDER JOINT TYPE, ASME B16.22 WROUGHT OR ASME B16.18 CAST.
18 SOLDER SHALL COMPLY WITH ASTM B32. FLUX SHALL COMPLY WITH ASTM B813.
19 SOLDER AND FLUX SHALL CONTAIN NO MORE THAN 0.2% LEAD. SOLDERED JOINTS
20 SHALL COMPLY WITH ASTM B828.

21 C. PLASTIC PIPING SHALL BE CPVC OR PEX IN ACCORDANCE WITH TABLE 3.4.3.
22 PLASTIC PIPING SHALL BE RATED FOR 160 PSI AT 73 DEG F, 130 PSI AT 120 DEG F, AND 100
23 PSI AT 180 DEG F.

24 D. PIPING WITHIN COMBINED PIPING SYSTEMS THAT CONVEYS WATER TO OUTLETS
25 FOR HUMAN CONSUMPTION BY DRINKING OR COOKING SHALL BE "LEAD-FREE" IN
26 ACCORDANCE WITH SECTION 3.4.6.

27 **CHAPTER 11 SANITARY DRAINAGE SYSTEMS**

28 **11.2.3 BUILDING DRAIN AND SEWER SIZE**

29 THE SIZE OF THE BUILDING DRAIN AND THE SIZE OF THE BUILDING SEWER SHALL BE
30 DETERMINED BY FIXTURE UNIT LOADS CONNECTED IN ACCORDANCE WITH TABLE
31 11.5.1A.

32 EXCEPTIONS:

1 (1) BUILDING DRAINS SHALL NOT BE LESS THAN 4" PIPE SIZE FROM THEIR CONNECTION
2 TO THE BUILDING SEWER TO THEIR CONNECTION TO THE FIRST STACK OR BRANCH
3 DRAIN SERVING TWO OR MORE FIXTURES.

4 (2) BUILDING SEWERS SHALL NOT BE LESS THAN 4" PIPE SIZE.

5 **NOTES FOR TABLE 11.5.1A**

6 3. BUILDING DRAINS SHALL NOT BE LESS THAN 4" PIPE SIZE FROM THEIR CONNECTION
7 TO THE BUILDING SEWER TO THEIR CONNECTION TO THE FIRST STACK OR BRANCH
8 DRAIN SERVING TWO OR MORE FIXTURES

9 4. BUILDING SEWERS SHALL NOT BE LESS THAN 4" PIPE SIZE.

10 **CHAPTER 13 STORM WATER DRAINAGE**

11 **13.1.2 STORM WATER DRAINAGE TO SANITARY SEWER PROHIBITED**

12 STORM WATER, INCLUDING FOUNDATION DRAINAGE, SHALL NOT BE DRAINED INTO
13 SEWERS INTENDED FOR SEWAGE ONLY, EXCEPT AS APPROVED BY THE AUTHORITY
14 HAVING JURISDICTION.

15 **13.1.5 FOUNDATION DRAINS**

16 D. DRAINAGE FROM FOUNDATIONS SHALL BE DISCHARGED TO A STORM DRAIN,
17 STREET, ALLEY, APPROVED WATER COURSE, OR AT GRADE. WHEN DISCHARGED AT
18 GRADE, THE POINT OF DISCHARGE SHALL BE AT LEAST 10 FEET FROM ANY PROPERTY
19 LINE, WHERE POSSIBLE.

20 **CHAPTER 15 TESTS AND MAINTENANCE**

21 **15.3.1 GENERAL**

22 NEW PLUMBING SYSTEMS AND PARTS OF EXISTING SYSTEMS THAT HAVE BEEN
23 ALTERED, EXTENDED OR REPAIRED SHALL BE TESTED AS PRESCRIBED HEREINAFTER TO
24 DISCLOSE LEAKS AND DEFECTS.

25 **15.3.2 EXISTING CONCEALED PIPING**

26 A. WHERE AN EXISTING CONCEALED SEWER OR DRAIN IS REUSED AS PART OF A NEW
27 OR RENOVATED DRAINAGE SYSTEM, THE LINE SHALL BE TRACED TO ITS POINT OF
28 TERMINATION AND SHALL BE TESTED TO DETERMINE THAT:

- 29 1. IT IS CONNECTED TO THE PROPER DRAINAGE SYSTEM, SUCH AS SANITARY OR
30 STORM,
31 2. IT WILL WITHSTAND A LEAK TEST, AND,
32 3. IT IS FREE-FLOWING AND NOT RESTRICTED.

33 **CHAPTER 16**

1 **REGULATIONS GOVERNING INDIVIDUAL SEWAGE DISPOSAL SYSTEMS FOR HOMES**
2 **AND OTHER ESTABLISHMENTS WHERE PUBLIC SEWAGE SYSTEMS ARE NOT**
3 **AVAILABLE**

4 **16.1.1 GENERAL**

5 THE USE AND MAINTENANCE OF AN ON-SITE SEWAGE DISPOSAL SYSTEM IS GOVERNED
6 BY TITLE 9 OF THE ENVIRONMENTAL ARTICLE OF THE ANNOTATED CODE OF MARYLAND
7 AND CHAPTERS 26.04.02 AND 26.04.03 OF THE CODE OF MARYLAND REGULATIONS. THESE
8 STATE OF MARYLAND REGULATIONS ARE HEREIN ADOPTED BY REFERENCE.

9 **16.3.4 DISCHARGE**

10 THE SYSTEM SHALL CONSIST OF A SEPTIC TANK DISCHARGING INTO EITHER A
11 SUBSURFACE DISPOSAL FIELD OR ONE OR MORE SEEPAGE PITS OR INTO A
12 COMBINATION OF BOTH, IF FOUND ADEQUATE AS SUCH AND APPROVED BY THE
13 DIRECTOR OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND
14 SUSTAINABILITY OR THE DIRECTOR'S DESIGNEE. *SEE FIGURE 1.2.45 AND THE*
15 *DEFINITION OF "SEPTIC TANK" AND "LEACHING WELL OR PIT".*

16 **16.6.1 LIQUID CAPACITY**

17 A. THE LIQUID CAPACITY OF SEPTIC TANKS FOR SINGLE DWELLING UNITS HAVING UP
18 TO FIVE BEDROOMS SHALL BE NOT LESS THAN 1500 GALLONS. AN ADDITIONAL 250
19 GALLONS OF CAPACITY SHALL BE PROVIDED FOR EACH BEDROOM IN EXCESS OF FIVE.
20 SINGLE DWELLING UNITS HAVING THREE OR MORE BEDROOMS SHALL BE SERVED BY
21 SEPTIC TANKS HAVING TWO COMPARTMENTS.

22 B. REQUIRED SEPTIC TANK CAPACITIES FOR BUILDINGS OTHER THAN SINGLE
23 DWELLING UNITS SHALL BE DETERMINED BY THE DIRECTOR OF THE DEPARTMENT OF
24 ENVIRONMENTAL PROTECTION AND SUSTAINABILITY, OR THE DIRECTOR'S DESIGNEE,
25 BASED ON THE PROJECTED PEAK SEWAGE FLOW OR OTHER PERTINENT CRITERIA.

26 **16.6.7 DEPTH OF SEPTIC TANK**

27 THE TOP OF THE SEPTIC TANK SHALL BE BROUGHT TO WITHIN 24 INCHES OF THE
28 FINISHED GRADE. AN ACCESS MANHOLE MUST BE EXTENDED TO THE FINISHED GRADE.

29 **16.9.2 FILTER MATERIAL**

30 THE FILTER MATERIAL SHALL COVER THE ABSORPTION LINES AND EXTEND THE FULL
31 WIDTH OF THE TRENCH AND SHALL BE NOT LESS THAN 6 INCHES DEEP BENEATH THE
32 BOTTOM OF THE ABSORPTION LINES, AND 2 INCHES ABOVE THE TOP OF THE
33 ABSORPTION LINES. THE FILTER MATERIAL MAY BE WASHED GRAVEL, CRUSHED STONE,
34 SLAG, OR CLEAN BANK-RUN GRAVEL RANGING IN SIZE FROM 1/2 TO 2-1/2 INCHES. THE

1 FILTER MATERIAL SHALL BE COVERED WITH BURLAP, FILTER CLOTH, 2 INCHES OF
2 STRAW, OR EQUIVALENT PERMEABLE MATERIAL PRIOR TO BACKFILLING THE
3 EXCAVATION.

4 **16.9.5 ABSORPTION LINES**

5 ABSORPTION LINES SHALL BE 4 INCH PERFORATED PLASTIC PIPE CONFORMING TO
6 APPROVED STANDARDS. VERTICAL OBSERVATION PIPES SHALL BE PROVIDED AT THE
7 END OF EACH ABSORPTION LINE THAT IS 4 FEET OR MORE IN DEPTH. OBSERVATION
8 PIPES SHALL BE PERFORATED WITHIN THE ENTIRE DEPTH OF THE FILTER MATERIAL.
9 THE PORTION OF OBSERVATION PIPES THAT IS ABOVE THE FILTER MATERIAL SHALL BE
10 SOLID EXTENDING TO 4 INCHES MINIMUM ABOVE GRADE AND BE CLOSED WITH A
11 REMOVABLE CAP.

12 **CHAPTER 17 - POTABLE WATER SUPPLY SYSTEMS**

13 **17.1.3 CODE REFERENCE**

14 WATER WELL CONSTRUCTION IN THE STATE OF MARYLAND IS REGULATED UNDER
15 AUTHORITY OF TITLE 9, SUBTITLE 13, OF THE ENVIRONMENTAL ARTICLE OF THE
16 ANNOTATED CODE OF MARYLAND AND CHAPTER 26.04.04 OF THE CODE OF MARYLAND
17 REGULATIONS (COMAR). ADDITIONALLY, NON-COMMUNITY POTABLE WATER
18 SYSTEMS ARE GOVERNED BY COMAR CHAPTER 26.04.02. THESE STATE OF MARYLAND
19 REGULATIONS ARE HEREIN ADOPTED BY REFERENCE.

20 **17.2 QUANTITY OF WATER REQUIRED**

21 A. THE QUANTITY OF WATER REQUIRED SHALL BE SUBJECT TO THE REQUIREMENTS
22 IN COMAR 26.04.04.07.P, WHICH ARE ADOPTED HEREIN BY REFERENCE.

23 B. WHERE THE AVAILABLE PRIMARY SOURCE OF WATER DOES NOT MEET THE
24 REQUIREMENTS OF SECTION 17.2.A, ONE OF THE FOLLOWING SECONDARY WATER
25 SUPPLY SOURCES SHALL BE PROVIDED:

- 26 1. A PRESSURE STORAGE TANK OF SUFFICIENT SIZE.
- 27 2. A GRAVITY STORAGE TANK OF SUFFICIENT SIZE AND A PRESSURE BOOSTER PUMP
28 SYSTEM.

29 **17.9 WELL TERMINALS**

30 WELL TERMINALS SHALL BE SUBJECT TO THE REQUIREMENTS OF COMAR 26.04.04.07.5,
31 WHICH ARE ADOPTED HEREIN BY REFERENCE.

32 **17.15 INTERCONNECTIONS**

33 **17.15.1 BETWEEN SYSTEMS**

1 THERE SHALL BE NO CONNECTIONS BETWEEN AN INDIVIDUAL POTABLE WATER
 2 SUPPLY SYSTEM AND A PUBLIC WATER SUPPLY SYSTEM.

3 **17.15.2 BETWEEN PROPERTIES**

4 NO INDIVIDUAL POTABLE WATER SUPPLY SYSTEM SHALL SERVE MORE THAN ONE
 5 PROPERTY UNLESS APPROVED BY THE AUTHORITY HAVING JURISDICTION.

6 **CHAPTER 19 - FUEL GAS PIPING AND EQUIPMENT**

7 **19.1 NATURAL GAS**

8 A. NATURAL GAS PIPING AND EQUIPMENT SHALL COMPLY WITH THE NATIONAL
 9 FUEL GAS CODE - NFPA 54 - 2012.

10 B. ON PAGE 63 IN NFPA 54, CHANGE SECTION 7.13 IN ITS ENTIRETY TO READ AS
 11 FOLLOWS:

12 **19.2 LIQUID PETROLEUM (LP) GAS**

13 LIQUID PETROLEUM (LP) GAS PIPING AND EQUIPMENT SHALL COMPLY WITH THE
 14 LIQUID PETROLEUM GAS CODE - NFPA 58 - 2011.
 15

Table 3.4.2				
PLASTIC WATER SERVICE PIPING (1) (2) (3)				
(water pressure rated for not less than 200 psi at 73 deg F)				
<u>MATERIAL</u>	<u>COMPOSITION</u>	<u>DIMENSIONS</u>	<u>JOINTS</u>	<u>PIPE SIZE</u>
ABS (ASTM D1527)	ABS 1208	Schedule 40	not threaded	1/2"
		Schedule 80	threaded	none
		Schedule 80	not threaded	up thru 1-1/4"
	ABS 1210	Schedule 40	not threaded	up thru 1"
		Schedule 80	threaded	1/2"
		Schedule 80	not threaded	up thru 2-1/2"
	ABS 1316	Schedule 40	not threaded	up thru 3"
		Schedule 80	threaded	up thru 1-1/4"
		Schedule 80	not threaded	up thru 8"
	ABS 2112	Schedule 40	not threaded	up thru 1-1/2"
		Schedule 80	threaded	up thru 1"
		Schedule 80	not threaded	up thru 4"
PVC (ASTM D1785)	PVC 1120	Schedule 40	not threaded	up thru 4"
	PVC 1220	Schedule 80	threaded	up thru 2-1/2"
		Schedule 80	not threaded	up thru 24"
	PVC 2120	Schedule 120	threaded	up thru 5"
		Schedule 120	not threaded	up thru 12"
	PVC 2110	Schedule 40	not threaded	up thru 1"
		Schedule 80	threaded	1/2"
		Schedule 80	not threaded	up thru 2-1/2"

		Schedule 120	threaded	1/2"
		Schedule 120	not threaded	up thru 5"
	PVC 2112	Schedule 40	not threaded	up thru 1-1/2"
		Schedule 80	threaded	up thru 1"
		Schedule 80	not threaded	up thru 4"
		Schedule 120	threaded	up thru 1"
		Schedule 120	not threaded	up thru 12"
	PVC 2116	Schedule 40	not threaded	up thru 3"
		Schedule 80	threaded	up thru 1-1/4"
		Schedule 80	not threaded	up thru 8"
		Schedule 120	threaded	up thru 1-1/2"
		Schedule 120	not threaded	up thru 12"
PVC (ASTM D2241)	12454	SDR 21 or lower	not threaded	all sizes
PVC (AWWA C900) 200 PR	12454-B	DR 14	not threaded	all sizes
CPVC (ASTM F442) SDR-PR	CPVC 4120 (23447)	SDR 21 or lower	not threaded	all sizes
PE (ASTM D2239) SIDR-PR	PE 1404	none	none	none
	PE 2708	SIDR 7 or lower	not threaded	all sizes
	PE 3608	SIDR 7 or lower	not threaded	all sizes
	PE 4608	SIDR 7 or lower	not threaded	all sizes
	PE 4710	SIDR 9 or lower	not threaded	all sizes
PE (ASTM D2737) SDR-PR	PE 2708	SDR 9 or lower	not threaded	all sizes
	PE 3608	SDR 9 or lower	not threaded	all sizes
	PE 4608	SDR 9 or lower	not threaded	all sizes
	PE 4710	SDR 11 or lower	not threaded	all sizes
PE (ASTM D3035 DR-PR	PE 1404	none	none	none
	PE 2606	DR 7	not threaded	all sizes
	PE 2708	DR 9 or lower	not threaded	all sizes
	PE 3608	DR 9 or lower	not threaded	all sizes
	PE 3708	DR 9 or lower	not threaded	all sizes
	PE 3710	DR 11 or lower	not threaded	all sizes
	PE 4608	DR 9 or lower	not threaded	all sizes
	PE 4708	DR 9 or lower	not threaded	all sizes
	PE 4710	DR 11 or lower	not threaded	all sizes
PE (ASTM F714) SDR-PR IPS, DIPS	PE 2606	DR 7.3 or lower	not threaded	all sizes
	PE 2708	DR 9 or lower	not threaded	all sizes
	PE 3608	DR 9 or lower	not threaded	all sizes
	PE 3708	DR 9 or lower	not threaded	all sizes
	PE 3710	DR 11 or lower	not threaded	all sizes
	PE 4708	DR 9 or lower	not threaded	all sizes
	PE 4710	DR 11 or lower	not threaded	all sizes
PE (AWWA C901) 200 psi pressure class	PE 2406	IDR 5.3	not threaded	all sizes
	PE 3406	IDR 5.3	not threaded	all sizes
	PE 3408	IDR 7 or lower	not threaded	all sizes
		DR 9	not threaded	all sizes

PE-AL-PE Composite ASTM F1282	PE-AL-PE	ASTM F1282	not threaded	all sizes
PE-AL-PE Composite (AWWA C903) 200 PR	PE-AL-PE	AWWA C903	not threaded	all sizes
PEX-AL-PEX ASTM F1281	PEX-AL-PEX	ASTM F1281	not threaded	all sizes
PEX-AL-PEX Composite (AWWA C903) 200 PR	PEX-AL-PEX	AWWA C903	not threaded	all sizes

Notes for Table 3.4.2

- (1) The application of a pipe material for water service piping and its required water pressure rating of not less than 200 psi at 73 deg F shall be indicated in the manufacturer's data.
- (2) Also refer to the manufacturer's recommendations, instructions, and limitations.
- (3) Lower SDR, SIDR, IDR, and DR numbers have heavier wall thicknesses and higher pressure ratings.

Table 3.4.3				
PLASTIC HOT AND COLD WATER DISTRIBUTION PIPING (1)				
(water pressure rated for not less than 100 psi at 180 deg F and 160 psi at 73 deg F)				
MATERIAL	COMPOSITION	DIMENSIONS	JOINTS	PIPE SIZES
CPVC (ASTM D2846)	CPVC 4120	SDR 11	not threaded	all sizes
CPVC (ASTM F441)	CPVC 4120	Schedule 40	not threaded	up thru 1"
		Schedule 80	threaded	up thru 1/2"
		Schedule 80	not threaded	up thru 2-1/2"
CPVC (CSA B137.6)	24447	SDR 11	not threaded	all sizes
PEX (ASTM F876)	PEX	SDR 9	not threaded	all sizes
PEX (ASTM F877)	PEX	SDR 9	not threaded	all sizes
PE-AL-PE (ASTM F1282)	PE-AL-PE	ASTM F1282	not threaded	all sizes
PEX-AL-PEX (ASTM F1281)	PEX-AL-PEX	ASTM F1281	not threaded	all sizes
PEX-AL-PEX (ASTM F2262)	PEX-AL-PEX	SDR 9	not threaded	all sizes
PE-RT (ASTM F2769)	PE-RT	SDR 9	not threaded	all sizes

NOTES FOR TABLE 3.4.3

- (1) Refer also to the manufacturer's recommendations, instructions, and limitations.

1 **APPENDIX E - SPECIAL DESIGN PLUMBING SYSTEMS**
2 **E.8 AIR ADMITTANCE VALVES**
3 THE INSTALLATION OF AIR ADMITTANCE VALVES IN ACCORDANCE WITH SECTION E.8 IS
4 SUBJECT TO THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION.
5 SECTION 4. AND BE IT FURTHER ENACTED, that the Laws of Baltimore County, Maryland
6 shall read as follows:
7 Article 21. Permits, Licenses and Business Regulation
8 21-7-202.

- 1 (b) Exceptions - In general. This section does not apply to:
- 2 (2) An individual making minor repairs and replacements to existing wiring or
- 3 equipment in the individual's own home except for repairs involving aluminum wiring or solar photovoltaic
- 4 systems which must be made under the supervision of a licensed electrician;
- 5

6 SECTION 5. AND BE IT FURTHER ENACTED, that Section 4 of this Act shall take effect

7 retroactive to July 1, 2012.

8

9 SECTION 6. AND BE IT FURTHER ENACTED, that this Act, having been passed by the

10 affirmative vote of five members of the County Council, shall take effect May 1, 2013.