

COUNTY COUNCIL OF BALTIMORE COUNTY, MARYLAND
Legislative Session 2007, Legislative Day No. 21

Bill No. 85-07

Mr. S.G. Samuel Moxley, Chairman
By Request of County Executive

By the County Council, November 19, 2007

A BILL
ENTITLED

AN ACT concerning

Plumbing and Gasfitting Regulation

FOR the purpose of adopting the 2006 National Standard Plumbing Code with the 2007

Supplement and adopting with certain amendments, deletions, and additions the 2006

National Standard Plumbing Code to be known as the Baltimore County Plumbing Code.

By Adopting

The 2006 National Standard Plumbing Code – Illustrated and the 2007 supplement to the
National Standard Plumbing Code – Illustrated.

By repealing and reenacting, with amendments

Section 21-15-101(h)

Title 15. Plumbers and Gasfitters

Article 21. Permits, Licenses and Business Regulation

Baltimore County Code, 2003.

1 SECTION 1. BE IT ENACTED BY THE COUNTY COUNCIL OF BALTIMORE
2 COUNTY, MARYLAND, that the 2006 National Standard Plumbing Code- Illustrated, along
3 with the 2007 Supplement be and it is hereby adopted as the “Plumbing Code of Baltimore
4 County.”

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6 Plumbing Code of Baltimore County are hereby repealed:

7 Pages 1 through 7 titled Administration; the following definitions in Sections 1.2:

8 Downspout, Grinder Pump, Nominal Size and Size of Pipe and Tubing; sections 2.16, 2.19.1;
9 2.25; 3.2.3; 3.4.2; 4.2.17; 4.3.9; 5.4.6; 5.4.7; 5.4.8; 6.2; 6.3.1; 7.2; 7.10.6; 7.16.6; 10.2; 10.4.9;
10 10.5.9; 10.9.2; 10.12.6; 10.15.2; 10.15.7; 10.15.9.1; 10.15.9.2; 10.15.9.3; 10.16.2; 10.16.5;
11 10.16.7; 10.17.1; 10.17.2; 10.17.3; 10.17.4; 10.17.5; 11.7.6; 12.10.6; 13.1.5.a; 13.1.5b.;
12 13.1.10.1; 13.6 (section title only); 13.6.3; 15.3.1; 16.1.1; 16.1.9; 16.1.10; 16.6.1; 16.6.7; 16.9.2;
13 16.9.5; 17.2.1; 17.2.2; 17.2.3; 17.2.4; 17.9; 17.15; Table 3.4; Table 3.4.2; Table 3.5; Table 3.7;
14 Table 7.21.1 - Note 1; Table 11.5.1A - number of DFUs for 3 inch pipe; Table 13.6.2 - Note 2;
15 Table 13.6.3; Appendices F, G, H, I and J.

16 SECTION 3. AND BE IT FURTHER ENACTED, that the following section,
17 subsections and additions, be and they are hereby added to the Plumbing Code of Baltimore
18 County, to read as follows:

19 PREFACE - INTENT OF ILLUSTRATIONS, EXPLANATORY NOTES AND
20 COMMENTS.

21 ANY CONFLICT BETWEEN THE 2006 NATIONAL STANDARD PLUMBING
22 CODE AS SUPPLEMENTED IN 2007 AND THE BALTIMORE COUNTY CODE SHALL BE
23 RESOLVED IN FAVOR OF THE COUNTY CODE. THE FIGURES, ILLUSTRATIONS,

1 DIAGRAMS, EXPLANATORY NOTES AND EDITORIAL COMMENTS CONTAINED
2 WITHIN THE 2006 NATIONAL STANDARD PLUMBING CODE - ILLUSTRATED ARE
3 INTENDED TO SUPPLEMENT THE ACTUAL CODE TEXT AND HELP TO EXPLAIN
4 THE GENERAL INTENT AND MEANING OF THE CODE. THE PIPING DIAGRAMS AND
5 FIGURES ARE NOT INTENDED TO RESTRICT THE USE OF OTHER ARRANGEMENTS
6 THAT SATISFY THE REQUIREMENTS OF THE WRITTEN CODE.

7 **CHAPTER 1 – DEFINITIONS**

8 1.2 COMMERCIAL KITCHEN: ONE OR MORE ROOMS IN A BUILDING THAT ARE
9 LICENSED TO PREPARE FOOD TO BE SERVED FOR CONSUMPTION OR
10 PROCESS FOOD TO BE PACKAGED FOR DISTRIBUTION.

11 1.2 NOMINAL SIZE (PIPE OR TUBE): THE INDUSTRY RECOGNIZED SIZE OF A
12 PLUMBING PIPE OR TUBE THAT IS NOT NECESSARILY AN ACTUAL
13 DIMENSION. IT INDICATES THE SIZE OF THE PIPE OR TUBE AS INDICATED IN
14 ITS MATERIAL STANDARD LISTED IN TABLE 3.1.3.

15 1.2 TEMPERED WATER: A MIXTURE OF HOT AND COLD WATER TO REACH A
16 DESIRED TEMPERATURE FOR ITS INTENDED USE, TYPICALLY 95°F TO 115°F.

17 **CHAPTER 2 – GENERAL REGULATIONS**

18
19 2.16 FREEZING OR OVERHEATING

20
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
24 RECORDED FROST LINES. MINIMUM EARTH COVER SHALL BE 36 INCHES ABOVE
25 THE TOP OF THE PIPE.

1 2.. MINIMUM EARTH COVER FOR BUILDING SEWERS THAT
2 CONNECT TO PUBLIC SEWAGE SYSTEMS SHALL BE 30 INCHES ABOVE THE TOP OF
3 THE PIPE. MINIMUM EARTH COVER FOR BUILDING SEWERS THAT CONNECT TO
4 INDIVIDUAL SEWAGE DISPOSAL SYSTEMS SHALL BE 24 INCHES ABOVE THE TOP
5 OF THE PIPE.

6 3. IN SYSTEMS THAT ARE USED SEASONALLY, WATER PIPING
7 SUBJECT TO FREEZING SHALL HAVE PROVISIONS TO BE DRAINED.

8 4. PIPING SHALL BE INSTALLED SO THAT THE CONTENTS WILL
9 NOT BE HEATED DUE TO CLOSE PROXIMITY TO ANY HEAT SOURCE OR FROM
10 DIRECT SOLAR RADIATION.

11 5. IN AREAS WITH SEASONAL FREEZING OUTDOOR
12 TEMPERATURES, ALL DRAIN PIPING AND WATER PIPING INSTALLED IN
13 EXTERIOR WALLS, ATTICS, AND OTHER AREAS EXPOSED TO OUTDOOR
14 TEMPERATURES SHALL BE PROTECTED FROM FREEZING. IN HEATED SPACES,
15 THE PIPING SHALL BE INSTALLED ON THE HEATED SIDE OF THE BUILDING
16 INSULATION. PIPING INSTALLED OUTDOORS OR IN UNHEATED SPACES SHALL
17 BE HEAT TRACED AND INSULATED.

18 2.19 CONNECTION TO WATER AND SEWER SYSTEMS

19

20 2.19.1 AVAILABILITY OF PUBLIC WATER AND SEWER

21 SUBJECT TO ARTICLE 20, TITLE 2 OF THE BALTIMORE COUNTY CODE, 2003

22 REGARDING CONNECTIONS TO PUBLIC WATER SUPPLY AND SEWERAGE

23 SYSTEMS, THE WATER DISTRIBUTION AND DRAINAGE SYSTEMS OF ANY

24 BUILDING IN WHICH PLUMBING FIXTURES ARE INSTALLED SHALL BE

1 CONNECTED TO A PUBLIC WATER SUPPLY AND SEWER SYSTEM RESPECTIVELY
2 IF THE PUBLIC WATER SUPPLY AND/OR PUBLIC SEWER IS WITHIN 500 FEET OF
3 ANY PROPERTY LINE OF THE PREMISES, OR OTHER REASONABLE DISTANCE AS
4 DETERMINED BY THE ADMINISTRATIVE AUTHORITY DEFINED IN SECTION 21-
5 15-101 OF THE BALTIMORE COUNTY CODE.

6 2.25 FOOD HANDLING ESTABLISHMENTS AND FOOD HANDLING AREAS WITHIN
7 BUILDINGS

8 2.25.1 GENERAL AREA PROTECTION

9
10 a. ALL FOOD AND DRINK, WHILE BEING STORED, PREPARED,
11 DISPLAYED, SERVED OR SOLD IN FOOD HANDLING ESTABLISHMENTS AND FOOD
12 HANDLING AREAS IN BUILDINGS SHALL BE PROTECTED AGAINST
13 CONTAMINATION FROM DRAINAGE OVERFLOW, FLOODING, BACKFLOW, OR
14 LEAKAGE.

15 b. FOOD OR DRINK SHALL NOT BE STORED, PREPARED OR DISPLAYED
16 BENEATH OVERHEAD DRAIN OR VENT PIPING UNLESS SUCH PIPES ARE
17 PROTECTED AGAINST LEAKAGE OR CONDENSATION REACHING THE FOOD OR
18 DRINK.

19 c. IN NEW OR REMODELED CONSTRUCTION, DRAIN AND VENT PIPING
20 SHALL NOT BE LOCATED ABOVE FOOD PREPARATION, STORAGE, DISPLAY, OR
21 SERVING AREAS WHERE POSSIBLE.

22 d. WHERE DRAIN AND VENT PIPING MUST BE INSTALLED ABOVE SUCH
23 AREAS, THE AMOUNT OF PIPING AND THE NUMBER OF PIPE JOINTS SHALL BE
24 MINIMIZED.

1 e. WHERE PLUMBING FIXTURES ARE LOCATED ABOVE SUCH AREAS,
2 ALL OPENINGS THROUGH FLOORS, INCLUDING THOSE FOR PIPING, CLEANOUTS,
3 AND OTHER PLUMBING WORK SHALL BE PROVIDED WITH SLEEVES SECURELY
4 BONDED TO THE FLOOR CONSTRUCTION AND PROJECTING NOT LESS THAN 3/4
5 INCHES ABOVE THE TOP OF THE FINISHED FLOOR WITH THE SPACE BETWEEN
6 THE PENETRATION AND THE SLEEVE SEALED WATERPROOF.

7 f. EXCEPT FOR BATHTUBS OR WHIRLPOOL BATHS, PLUMBING
8 FIXTURES INSTALLED ON THE FLOOR ABOVE SUCH AREAS SHALL BE THE WALL-
9 MOUNTED OR BACK-OUTLET TYPE.

10 g. FLOOR DRAINS AND SHOWER DRAINS INSTALLED ON THE FLOOR
11 ABOVE SUCH AREAS SHALL BE FLASHED AND EQUIPPED WITH INTEGRAL
12 SEEPAGE PANS.

13 h. THE WASTE AND OVERFLOW CONNECTIONS FOR BATHTUBS AND
14 WHIRLPOOL BATHS INSTALLED ON THE FLOOR ABOVE SUCH AREAS SHALL BE
15 MADE ABOVE THE FLOOR AND PIPED THROUGH A SINGLE SLEEVED FLOOR
16 OPENING TO THE TRAP BELOW THE FLOOR. NO FLOOR OPENINGS, OTHER THAN
17 THE SLEEVE FOR THE WASTE PIPE TO THE FIXTURE TRAP, SHALL BE PERMITTED.

18 i. DRAIN AND VENT PIPING ABOVE SUCH AREAS SHALL BE SUBJECTED
19 TO A STANDING WATER TEST OF NOT LESS THAN 25 FEET OR 10 PSIG.

20 j. PIPING SUBJECT TO OPERATION AT TEMPERATURES THAT MAY
21 CAUSE CONDENSATION ON THE EXTERNAL SURFACES OF THE PIPE SHALL BE
22 THERMALLY INSULATED TO PREVENT CONDENSATION.

1 k. WHERE DRAIN AND VENT PIPING IS INSTALLED ABOVE FINISHED
2 CEILINGS IN SUCH AREAS, THE CEILING PANELS SHALL BE THE REMOVABLE
3 TYPE OR SUFFICIENT ACCESS PANELS SHALL BE PROVIDED TO PERMIT
4 COMPLETE INSPECTION OF THE PIPING.

5 2.25.2 FOOD SERVICE EQUIPMENT AND FIXTURES

6
7 a. ALL FOOD SERVICE EQUIPMENT, INCLUDING SINKS, DISHWASHERS,
8 ICE MACHINES, BREWERS, AND DISPENSERS, SHALL BE INDIRECTLY CONNECTED
9 TO THE DRAINAGE SYSTEM THROUGH AN AIR GAP OR AIR BREAK IN
10 ACCORDANCE WITH CHAPTER 9.

11 EXCEPTION: IF A PROPERLY VENTED FLOOR DRAIN IS INSTALLED ADJACENT TO
12 A FOOD SERVICE FIXTURE THAT IS PROPERLY TRAPPED AND VENTED, THE FOOD
13 SERVICE FIXTURE SHALL BE PERMITTED TO CONNECT DIRECTLY TO THE
14 DRAINAGE SYSTEM ON THE SEWER SIDE OF THE FLOOR DRAIN.

15 b. WHERE MULTI-COMPARTMENT SINKS ARE DRAINED INDIRECTLY,
16 EACH COMPARTMENT SHALL DISCHARGE SEPARATELY INTO A FLOOR SINK
17 THAT IS CAPABLE OF DRAINING ALL OF THE COMPARTMENTS
18 SIMULTANEOUSLY.

19 2.25.3 EXPOSED FOOD PRODUCTS

20
21 WHEREVER UNWRAPPED OR UNPACKED FOOD PRODUCTS ARE PREPARED,
22 DISPLAYED, OR SOLD FOR HUMAN CONSUMPTION, ALL FIXTURES, EQUIPMENT,
23 DEVICES, UTENSILS, TABLEWARE, AND APPARATUS INVOLVED IN THE FOOD
24 SERVICE PROCESS SHALL BE PROTECTED AGAINST BACKFLOW, CROSS-
25 CONNECTION, AND FLOODING FROM THE DRAINAGE SYSTEM BY INDIRECT

1 CONNECTIONS TO THE DRAINAGE SYSTEM THROUGH AIR GAPS IN ACCORDANCE
2 WITH CHAPTER 9.

3 2.25.4 FOOD DISPLAY EQUIPMENT

4
5 DISPLAY CASES FOR REFRIGERATED AND FROZEN FOOD PRODUCTS AND
6 OTHER EQUIPMENT AND APPLIANCES THAT PRODUCE CLEAR WATER WASTE
7 SHALL BE INDIRECTLY CONNECTED TO THE DRAINAGE SYSTEM THROUGH AN
8 AIR GAP OR AIR BREAK IN ACCORDANCE WITH CHAPTER 9.

9 2.25.5 FLOOR SINKS

10
11 FLOOR SINKS IN FOOD HANDLING AREAS SHALL BE OF THE SANITARY
12 DESIGN WITH SMOOTH, CORROSION-RESISTANT SURFACES THAT CAN BE
13 READILY CLEANED.

14 2.26 ELEVATOR SUMP PITS

15
16 a. SUMP PITS IN SHAFTS FOR ELEVATORS SHALL BE DRAINED BY
17 GRAVITY OR BY SUMP PUMPS THAT ARE INDIRECTLY CONNECTED TO THE
18 SANITARY DRAINAGE SYSTEM AT A POINT OUTSIDE OF THE ELEVATOR SHAFT.

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

23 c. SUMP PITS SHALL BE COVERED WITH A REMOVABLE COVER THAT
24 IS FLUSH WITH THE FLOOR AT THE BOTTOM OF THE SHAFT.

25 **CHAPTER 3 – MATERIALS**

26
27 3.2 SPECIAL MATERIALS

28

1 3.2.3 PLASTIC

2 a. PLASTIC PIPING MATERIALS FOR SPECIFIC APPLICATIONS SHALL BE
3 AS LISTED IN SECTIONS 3.4 THROUGH 3.11.

4 b. WHERE PLASTIC PIPING PENETRATES WALLS, FLOORS, OR CEILINGS
5 THAT ARE REQUIRED TO BE FIRE RATED, THE PENETRATION SHALL BE
6 PROTECTED BY APPROVED INTUMESCENT FIRE STOPPING.

7 c. PLASTIC PIPING SHALL NOT BE INSTALLED IN AIR PLENUMS.

8 d. PROVISIONS SHALL BE MADE FOR THERMAL EXPANSION OF
9 PLASTIC PIPING BY THE USE OF OFFSETS, EXPANSION LOOPS, OR EXPANSION
10 JOINTS. ACCESS SHALL BE PROVIDED FOR MECHANICAL EXPANSION DEVICES.

11 e. PLASTIC TRAPS AND TAILPIECES SHALL HAVE 0.062” MINIMUM
12 WALL THICKNESS.

13 f. PLASTIC SHEETING UNDER SHOWER PANS SHALL COMPLY WITH
14 THE STANDARDS LISTED IN TABLE 3.1.3.

15 3.4.2 WATER SERVICE PIPING

16 a. WATER SERVICE PIPE AND PIPE FITTINGS TO THE POINT OF
17 ENTRANCE INTO A BUILDING THROUGH A FOUNDATION WALL OR FLOOR SHALL
18 BE OF MATERIALS LISTED IN TABLE 3.4.

19 b. WATER SERVICE PIPE AND PIPE FITTINGS SHALL BE COMPLY WITH
20 NSF 61.

21 c. METALLIC WATER SERVICE PIPE AND PIPE FITTINGS SHALL BE
22 RATED NOT LESS THAN 160 PSI AT 73°F.

- 1 d. Plastic water service pipe and pipe fittings shall be rated not less than 200 psi at
- 2 73°F.

Table 3.4

MATERIALS FOR POTABLE WATER

		HOT WATER DISTRIBUTION		
		COLD WATER DISTRIBUTION		
		WATER SERVICE PIPING		
		A	X	X
1	ABS Plastic Pipe, SDR (ASTM D2282)	A	X	X
2	ABS Plastic Pipe, Schedule 40 or 80 (ASTM D1527)	A	X	X
3	Brass Pipe (ASTM B43)	X	X	A
4	Copper Pipe (ASTM B42)	X	X	A
5	Copper Water Tube, Type K or L (ASTM B88)	A	A	A
6	Copper Water Tube, Type M (ASTM B88)	X	A	A
7	CPVC Plastic Pipe, Schedule 40, 80 (ASTM F441)	A	A	A
8	CPVC Plastic Pipe, SDR (ASTM F442)	A	A	A
9	CPVC Plastic Water Distribution Systems (ASTM D2846)	A	A	A
10	Ductile Iron Pipe, Cement-lined (ASTM A377, ANSI/AWWA C151/A21.51)	A	X	X
11	Fiberglass Pressure Pipe (AWWA C950)	A	X	X
12	Galvanized Steel Pipe (ASTM A53)	X	X	A
13	High-Density Polyethylene (HDPE) Plastic Pipe (ASTM F714) (4)	A	X	X
14	Reserved			
15	PE Plastic Pipe, Schedule 40, 80 (ASTM D2447, rated 200 psi minimum at 73 deg F)	A	X	X
16	PE Plastic Pipe, SDR (ASTM D3035)	A	X	X
17	PE Plastic Pipe, SIDR (ASTM D2239, rated 200 psi minimum at 73 deg F)	A	X	X
18	PE Plastic Tube (ASTM D2737)	A	X	X
19	PE Plastic Pressure Pipe and Tubing (AWWA C901, rated 200 psi minimum at 73 deg F)	A	X	X
20	PE-AL-PE Composite Pressure Pipe (ASTM F1282, CSA B137.9 pipe with ASTM F1974 metal insert fittings)	A	A	A
21	PEX-AL-PEX Composite Pressure Pipe (ASTM F1281, CSA B137.10 pipe with ASTM F1974 metal insert fittings)	A	A	A
22	Pressure Rated Composite Pipe and Fittings for Elevated Temperature Service: (ASTM F1335)	X	A	A
23	Cross-linked Polyethylene (PEX) Tubing (ASTM F876)	A	A	A
24	ASTM F877 PEX Plastic Water Distribution Systems (ASTM F876 tubing with ASTM F1960 cold expansion fittings or ASTM F1807 metal insert fittings with ASTM F2098 clamps)	A	A	A
25	Cross-linked Polyethylene/Aluminum/Polyethylene (PEX-AL-PEX) Tubing, OD Controlled, SDR 9 (ASTM F2262)	A	A	A
26	PVC Plastic Pressure Pipe, (AWWA C900)	A	X	X
27	PVC Plastic Pipe, Schedule 40,80,120 (ASTM D1785)	A	X	X
28	PVC Plastic Pipe, SDR (ASTM D2241)	A	X	X
		Approved	A	A
		Not Approved	X	X

NOTES FOR TABLE 3.4

- (1) Piping for potable water service shall be water pressure rated for not less than 200 psi at 73 ° F.
- (2) Piping for hot and cold water distribution shall be water pressure rated for not less than 100 psi at 180 ° F and 160 psi at 73 ° F.
- (3) Plastic piping materials shall comply with NSF 14.
- (4) Minimum DR-11 for trenchless water service replacement systems.
- (5) Reserved.
- (6) See Table 3.4.2 for plastic water service piping.
- (7) See Table 3.4.3. for plastic hot and cold water distribution piping.

Table 3.4.2

PLASTIC WATER SERVICE PIPE

(Water pressure rated not less than 200 psi at 73 deg F)

MATERIAL	COMPOSITION	DIMENSIONS	JOINTS	PIPE SIZE	
ABS (ASTM D1527)	ABS 1208	Schedule 40	not threaded	½"	
	-	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	½"
	-	-	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"
	ABS (ASTM D2282)	ABS 1316	SDR 17 or lower (1)	not threaded	all sizes
ABS 2112		SDR 13.5	not threaded	all sizes	
ABS 1210		none	none	none	
ABS 1208		none	none	none	
PVC (ASTM D1785)	PVC 1120	Schedule 40	not threaded	up thru 4"	
	-	Schedule 80	threaded	up thru 2-1/2"	
	-	Schedule 80	not threaded	up thru 24"	
	-	Schedule 120	threaded	up thru 5"	
	-	Schedule 120	not threaded	up thru 12"	
	-	PVC 1220	Schedule 40	not threaded	up thru 4"
	-	-	Schedule 80	threaded	up thru 2-1/2"
	-	-	Schedule 80	not threaded	up thru 24"
	-	-	Schedule 120	threaded	up thru 5"
	-	-	Schedule 120	not threaded	up thru 12"
	-	PVC 2120	Schedule 40	not threaded	up thru 4"
	-	-	Schedule 80	threaded	up thru 2-1/2"
	-	-	Schedule 80	not threaded	up thru 24"
	-	-	Schedule 120	threaded	up thru 5"
	-	-	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"
	-	PVC2112	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 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 (ASTM D2241)	PVC 1120	SDR 21 or lower (1)	not threaded	all sizes
-	PVC 1220	SDR 21 or lower (1)	not threaded	all sizes
-	PVC 2120	SDR 21 or lower (1)	not threaded	all sizes
-	PVC 2116	SDR 17 or lower (1)	not threaded	all sizes
-	PVC 2112	SDR 13.5 or lower (1)	not threaded	all sizes
-	PVC 2110	none	not threaded	all sizes
PVC (AWWA C900) DR = dimension ratio OD/t)	12454-A	DR-14	not threaded	all sizes
	12454-B	DR-14	not threaded	all sizes
CPVC (ASTM D2846)	CPVC 4120	SDR 11	not threaded	all sizes
CPVC (ASTM F441)	CPVC 4120	Schedule 40	not threaded	up thru 4"
	-	Schedule 80	threaded	up thru 2-1/2"
	-	Schedule 80	not threaded	all sizes
CPVC (ASTM F442)	CPVC 4120	SDR 21 or lower (1)	not threaded	all sizes
PE (ASTM D2239)	PE 3408	SIDR 7 or lower (1)	not threaded	all sizes
-	PE 3306	SIDR 5.3	not threaded	all sizes
-	PE 3406	SIDR 5.3	not threaded	all sizes
-	PE 2306	SIDR 5.3	not threaded	all sizes
-	PE 2406	SIDR 5.3	not threaded	all sizes
-	PE 2305	none	none	none
-	PE 1404	none	none	none
PE (ASTM D2447)	PE 2306	Schedule 40	none	none
-		Schedule 80	not threaded	up thru 3/4"
-	PE 2406	Schedule 40	not threaded	none
-		Schedule 80	not threaded	up thru 3/4"
-	PE 3306	Schedule 40	not threaded	none
-		Schedule 80	not threaded	up thru 3/4"
-	PE 3406	Schedule 40	not threaded	none
-		Schedule 80	not threaded	up thru 3/4"
-	PE 2305	Schedule 40	not threaded	none
-		Schedule 80	not threaded	1/2"
-	PE 1404	Schedule 40	none	none
-		Schedule 80	none	none
PE (ASTM D2737)	PE 2305	SDR 7.3	none	none
-	PE 2306	SDR 9	none	none
-	PE 2406	SDR 9	none	none
-	PE 3306	SDR 9	none	none
-	PE 3406	SDR 9	none	none
-	PE 3408	SDR 9	not threaded	all sizes
-	PE 3408	SDR 11	none	none

PE (ASTM D3035)	PE 3408	SDR 9 or SDR 7	not threaded	all sizes
-	PE 2406	SDR 7	not threaded	all sizes
-	PE 1404	none	none	none
PE (ASTM F714 –IP system (HDB = hydraulic basis of design (DR = dimension ratio OD/t)	PE	HDB 1600 psi, DR9	not threaded	3” thru 24”
	PE	HDB 1450 psi, DR7.3	not threaded	3” thru 18”
	PE	HDB 1600 psi, DR7.3	not threaded	3” thru 18”
PE (AWWA C901)	PE 2406	IDR 5.3	not threaded	up thru 3”
	PE 3406	IDR 5.3	not threaded	up thru 3”
	PE 3408	IDR 7	not threaded	up thru 3”
	PE 2406	none	none	none
	PE 3406	none	none	none
	PE 3408	DR 9	not threaded	up thru 3”
PE-AL-PE (ASTM F1282)	PE-AL-PE	ASTM F1282	not threaded	all sizes
PEX (ASTM F876)	PEX	SDR 9	-	none
PEX (ASTM F877)	PEX	SDR 9	-	none
PEX (AWWA C904)	PEX	SDR 9	-	none
PEX-AL-PEX (ASTM F1281)	PEX-AL-PEX	ASTM F1281	not threaded	all sizes
PE-AL-PEX (ASTM F2262)	PEX-AL-PEX	ASTM F2262	not threaded	up thru 1”
PE-AL-PE	PE-AL-PE	AWWA C903	insert type	up thru 2”
PEX-AL-PEX (AWWA C903)	PEX-AL-PEX	AWWA C903	insert type	up thru 2”
PP (ASTM F2389)	PP	IPS Schedule 80	not threaded	Up thru 1-1/2”

NOTES

- (1) Lower DR, SDR AND IDR numbers have heavier wall thickness and higher pressure ratings.
- (2) Refer also to the manufacturer’s recommendations, instructions, and limitations

Table 3.5

MATERIALS FOR SANITARY WASTE & DRAIN

ABOVE GROUND WITHIN BUILDINGS			
UNDERGROUND WITHIN BUILDINGS			
SEWERS OUTSIDE OF BUILDINGS			
1	ABS Plastic and Fittings, Schedule 40 DWV (ASTM D2661)	A	A A
2	ABS Pipe – Cellular Core (ASTM F628) and DWV Fittings	A	A A
3	ABS Sewer Pipe and Fittings (for sewers outside of buildings) (ASTM D2751) (1)	A	X X
4	ABS and PVC Composite Sewer Pipe (ASTM D2680)	A	X X
5	Brass Pipe (ASTM B43)	X	X A
6	Cast-Iron Soil Pipe and Fittings – Bell and Spigot (ASTM A74)	A	A A
7	Cast- Iron Soil Pipe and Fittings – Hubless (CISPI 301, ASTM A888)	A	A A
8	Cellular Core PVC Sewer and Drain Pipe (ASTM F891)	A	X X
9	Cellular Core PVC Sewer and Drain Pipe (ASTM F891) (4)	A	A X
10	Cellular Core PVC DWV Pipe, IPS Schedule 40 (ASTM F891)	A	A A
11	Concrete Drain Pipe, Non-reinforced (ASTM C14)	A	X X
12	Concrete Drain Pipe, Reinforced (ASTM C76)	A	X X
13	Copper Pipe (ASTM B42) and Copper Drainage Fittings (ASME B16.23)	X	X A
14	Copper Tube – DWV (ASTM B306) and Copper Drainage Fittings (ASME B16.23)	A	A A
15	Copper Water Tube – K,L (ASTM B88) and Copper Drainage Fittings (ASME B16.23)	A	A A
15a	Copper Water Tube – M (ASTM B88)	X	X A
16	Fiberglass Sewer and Pressure Pipe (ASTM D3754) and Fiberglass Non-Pressure Pipe Fittings (ASTM D3840)	A	X X
17	Galvanized Steel Pipe (ASTM A53) and Cast-Iron Drainage Fittings (ASME B16.12)	X	X A
18	High-Density Polyethylene (HDPE) Plastic Pipe (ASTM F714) (6)	A	X X
19	PVC Pipe and Fittings, DWV (ASTM D2665)	A	A A
20	PVC Schedule 40 Drainage and DWV Fabricated Fittings (ASTM F1866)	A	A A
21	PVC Sewer Pipe (PS-46) and Fittings (ASTM F789) (2)	A	X X
22	PVC Sewer Pipe (PSM) and Fittings (ASTM D3034) (2)	A	X X
23	Stainless Steel DWV Systems – Type 316L (ASME A112.3.1) (5)	A	A A
24	Stainless Steel DWV Systems – Type 304 (ASME A112.3.1) (5)	X	X A
25	Vitrified Clay Pipe – Standard Strength (ASTM C700)	A	X X
26	Vitrified Clay Pipe – Extra Strength (ASTM C700)	A	A X
		Approved	A A A
		Not Approved	X X X

NOTES FOR TABLE 3.5

- (1) Plastic drain, waste, and vent piping classified by standard dimension ratio shall be SDR 26 or heavier (lower SDR number).
- (2) Plastic sewer pipe classified by pipe stiffness shall be PS-46 or stiffer (higher PS number)
- (3) Piping shall be applied within the limits of its listed standard and the manufacturer’s recommendations.
- (4) PS-100 pipe or stiffer (higher PS number)
- (5) Alloy shall be marked on pipe and fittings
- (6) Minimum DR-17 for trenchless sewer replacement systems.

Table 3.7

MATERIALS FOR STORM DRAINAGE

ABOVE GROUND WITHIN BUILDINGS			
UNDERGROUND WITHIN BUILDINGS			
SEWERS OUTSIDE OF BUILDINGS			
1	ABS Plastic and Fittings, Schedule 40 DWV (ASTM D2661)	A	A A
2	ABS Pipe – Cellular Core (ASTM F628) and DWV Fittings	A	A A
3	ABS Sewer Pipe and Fittings (ASTM D2751) (2) (3)	A	X X
4	ABS and PVC Composite Sewer Pipe (ASTM D2680)	A	X X
5	Brass Pipe (ASTM B43)	X	X A
6	Cast-Iron Soil Pipe and Fittings – Bell and Spigot (ASTM A74)	A	A A
7	Cast- Iron Soil Pipe and Fittings – Hubless (CISPI 301, ASTM A888)	A	A A
8	Cellular Core PVC Sewer and Drain Pipe (ASTM F891) (3)	A	X X
9	Cellular Core PVC Sewer and Drain Pipe (ASTM F891) (4)	X	A X
10	Cellular Core PVC DWV Pipe, IPS Schedule 40 (ASTM F891)	A	A A
11	Concrete Drain Pipe, Non-reinforced (ASTM C14)	A	X X
12	Concrete Drain Pipe, Reinforced (ASTM C76)	A	X X
13	Copper Pipe (ASTM B42)	X	X A
14	Copper Tube – DWV (ASTM B306) and Copper Drainage Fittings (ASME B16.23)	A	A A
15	Copper Water Tube – K,L (ASTM B88) and Copper Drainage Fittings (ASME B16.23)	A	A A
15a	Copper Water Tube – M (ASTM B88) and Copper Drainage Fittings (ASME B16.23)	X	X A
16	Galvanized Steel Pipe (ASTM A53) and Cast-Iron Drainage Fittings (ASME B16.12)	X	X A
17	PE- high Density Polyethylene (HDPE) Plastic Pipe, SDR-17, (ASTM F714) (6)	A	X X
18	PVC Pipe and Fittings, DWV (ASTM D2665)	A	A A
19	PVC Schedule 40 Drainage and DWV Fabricated Fittings (ASTM F1866)	A	A A
20	PVC Sewer Pipe (PS-46) and Fittings (ASTM F789)	X	X X
21	PVC Sewer Pipe (PSM) and Fittings (ASTM D3034) (2) (3)	A	X X
22	Stainless Steel DWV Systems – Type 316L (ASME A112.3.1) (5)	A	A A
23	Stainless Steel DWV Systems – Type 304 (ASME A112.3.1) (5)	X	X A
24	Vitrified Clay Pipe – Standard Strength (ASTM C700)	A	X X
25	Vitrified Clay Pipe – Extra Strength (ASTM C700)	A	A X
		Approved	A A A
		Not Approved	X X X

NOTES FOR TABLE 3.7

- (1) Piping shall be applied within the limits of its listed standards and the manufacturer’s recommendations.
- (2) SDR 27 pipe or heavier.
- (3) PS-46 pipe of stiffer (higher PS number).
- (4) PS-100 pipe or stiffer (higher PS number)
- (5) Alloy shall be marked on pipe and fittings
- (6) Minimum DR-17 for trenchless sewer system.

1 **CHAPTER 4 – JOINTS AND CONNECTIONS**

2 4.2 TYPES OF JOINTS FOR PIPING MATERIALS

3 4.2.17 SPLIT COUPLINGS

4 a. SPLIT COUPLINGS CONSISTING OF TWO OR MORE PARTS AND A
5 COMPRESSION GASKET, DESIGNED FOR USE WITH GROOVED OR PLAIN END PIPE
6 AND FITTINGS, SHALL BE PERMITTED TO BE USED FOR WATER SERVICE PIPING,
7 HOT AND COLD DOMESTIC WATER PIPING, STORM WATER CONDUCTORS AND
8 LEADERS, AND SUMP PUMP DISCHARGE PIPING. THE COMPLETE JOINT
9 ASSEMBLY SHALL BE SUITABLE FOR THE INTENDED USE AND COMPLY WITH A
10 STANDARD LISTED IN TABLE 3.1.3.

11 b. GALVANIZED STEEL PIPE MAY BE JOINED USING ROLLED OR CUT
12 GROOVES. OTHER INTERIOR COATED PIPE SHALL NOT BE JOINED USING ROLLED
13 GROOVES.

14 4.3 TYPES OF JOINTS BETWEEN DIFFERENT PIPING MATERIALS

15

16 4.3.9 ABS or PVC Plastic DWV to Other Material

17 a. THREADED JOINTS: ABS OR PVC DWV JOINTS WHEN THREADED
18 SHALL USE THE PROPER MALE OR FEMALE THREADED ADAPTER. USE ONLY
19 APPROVED THREAD TAPE OR LUBRICANT SEAL OR OTHER APPROVED MATERIAL
20 AS RECOMMENDED BY THE MANUFACTURER. THREADED JOINTS SHALL NOT BE
21 OVER-TIGHTENED. AFTER HAND TIGHTENING THE JOINT, MAKE A ONE-HALF TO
22 ONE FULL TURN WITH A STRAP WRENCH.

23 b. CAST-IRON HUB JOINTS: JOINTS IN SOLID-WALL PLASTIC PIPE (NOT
24 HOLLOW CORE) MAY BE MADE BY CAULKING WITH MOLTEN LEAD AND OAKUM

1 OR BY USE OF A COMPRESSION GASKET THAT IS COMPRESSED WHEN THE
2 PLASTIC PIPE IS INSERTED INTO THE CAST-IRON HUB END OF THE PIPE. NO
3 ADAPTERS ARE REQUIRED FOR THIS CONNECTION.

4 c. CAST-IRON SPIGOT ENDS, SCHEDULE 40 STEEL PIPE OR COPPER DWV
5 TUBE: JOINTS BETWEEN THESE MATERIALS AND PLASTIC SHALL BE JOINED
6 WITH AN APPROVED ADAPTER FITTING.

7 d. THE SOLVENT CEMENTED NON-PRESSURE JOINT BETWEEN
8 DISSIMILAR PLASTIC MATERIALS, ABS/PVC BUILDING DRAINS AND/ OR
9 BUILDING SEWERS, SHALL BE MADE USING AN ASTM D3138 SOLVENT CEMENT
10 INTENDED FOR ABS/PVC TRANSITION JOINTS.

11 **CHAPTER 5 – TRAPS, CLEANOUTS AND BACKWATER VALVES**

12
13 5.4 DRAINAGE PIPE CLEANOUTS

14 5.4.6 AT THE JUNCTION OF BUILDING DRAINS AND BUILDING SEWERS

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

17 5.4.7 IN BUILDING SEWERS AT THE PROPERTY LINE

18 a. CLEANOUTS SHALL BE PROVIDED AT THE PROPERTY LINE IN
19 BUILDING SEWERS UP THROUGH 6" SIZE AND BROUGHT TO THE SURFACE FOR
20 USE BY THE BALTIMORE COUNTY BUREAU OF UTILITIES.

21 b. MANHOLES SHALL BE PROVIDED AT THE PROPERTY LINE IN
22 BUILDING SEWERS 8" SIZE AND LARGER.

23 c. MANHOLES SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF
24 PUBLIC WORKS STANDARD DETAILS FOR CONSTRUCTION.

1 d. THE MAINTENANCE OF THESE CLEANOUTS AND MANHOLES SHALL
2 BE THE RESPONSIBILITY OF THE PROPERTY OWNER.

3 5.4.8 DIRECTION OF FLOW

4 CLEANOUTS SHALL BE INSTALLED SO THAT THE CLEANOUT OPENS IN
5 THE DIRECTION OF THE FLOW OF THE DRAINAGE LINE. TWIN CLEANOUTS IN
6 FIGURE 5.4.7 ARE PROHIBITED.

7 **CHAPTER 6 – LIQUID WASTE TREATMENT EQUIPMENT**

8

9 6.2 GREASE INTERCEPTORS

10 6.2.1 GENERAL

11 a. GREASE INTERCEPTORS SHALL COMPLY WITH THE REQUIREMENTS
12 OF THE ADOPTING AGENCY.

13 b. GREASE INTERCEPTORS INCLUDE THE FOLLOWING TYPES:

14 1. TYPE I HYDRO-MECHANICAL INTERCEPTORS

15 2. GREASE REMOVAL DEVICES (GRD)

16 3. TYPE II GRAVITY INTERCEPTORS

17 c. GREASE INTERCEPTORS SHALL BE PROVIDED TO RECEIVE THE
18 WASTE DISCHARGES FROM FIXTURES IN FOOD HANDLING AREAS THAT
19 INTRODUCE GREASE INTO THE SANITARY DRAINAGE SYSTEM. FIXTURES
20 INCLUDE, BUT ARE NOT LIMITED TO POT WASHING SINKS, UTENSIL SOAK SINKS,
21 PRE-RINSE SINKS AT DISHWASHERS, DISHWASHERS, WOK RANGE STATIONS,
22 DRAINS FROM WASH-DOWN VENTILATION HOODS, CAN WASHING DRAINS, MOP
23 SINKS, FLOOR DRAINS AND FLOOR SINKS IN AREAS AROUND GREASE
24 PRODUCING FIXTURES, AND SIMILAR FIXTURES.

1 d. WATER CLOSETS, URINALS, AND OTHER FIXTURES THAT
2 DISCHARGE HUMAN WASTE SHALL NOT DISCHARGE THROUGH A GREASE
3 INTERCEPTOR.

4 e. HANDWASHING SINKS, LAVATORIES, SALAD PREP SINKS, ICE
5 MACHINE DRAINS, AND OTHER NON-GREASE WASTE DRAINAGES SHALL BE
6 PERMITTED TO DISCHARGE THROUGH A GREASE INTERCEPTOR ALONG WITH
7 GREASE-PRODUCING FIXTURES.

8 6.2.1.1 TYPE I HYDRO-MECHANICAL GREASE INTERCEPTORS

9 a. HYDRO-MECHANICAL INTERCEPTORS UP TO 100 GALLONS PER
10 MINUTE CAPACITY SHALL COMPLY WITH THE PERFORMANCE, TESTING, AND
11 INSTALLATION REQUIREMENTS OF SECTION 6.2 AND EITHER ASME A112.14.3 OR
12 PDI STANDARD G101.

13 b. THESE INTERCEPTORS SHALL BE SIZED ACCORDING TO SECTION
14 6.2.10.

15 c. A CALIBRATED, NON-ADJUSTABLE FLOW CONTROL DEVICE SHALL
16 BE PROVIDED ON THE INLET SIDE OF EACH INTERCEPTOR TO PREVENT THE
17 WASTE FLOW (GPM) FROM EXCEEDING THE RATED FLOW CAPACITY OF THE
18 INTERCEPTOR. THE AIR INTAKE FOR THE FLOW CONTROL DEVICE SHALL BE
19 CONNECTED TO THE SANITARY VENT PIPING SYSTEM OR BE OTHERWISE
20 VENTED TO OUTDOORS IN ACCORDANCE WITH CHAPTER 12.

21 6.2.1.2 GREASE REMOVAL DEVICES (GRD)

22 a. HYDRO-MECHANICAL INTERCEPTORS THAT ARE CAPABLE OF
23 AUTOMATICALLY REMOVING FREE-FLOATING GREASE, FATS, AND OILS FROM

1 THEIR WASTE DISCHARGE WITHOUT INTERVENTION OF THE USER EXCEPT FOR
2 MAINTENANCE SHALL COMPLY WITH ASME A112.14.4 AND SECTION 6.2.

3 b. THESE INTERCEPTORS SHALL BE SIZED ACCORDING TO SECTION
4 6.2.10.

5 c. A CALIBRATED, NON-ADJUSTABLE FLOW CONTROL DEVICE SHALL
6 BE PROVIDED ON THE INLET SIDE OF EACH INTERCEPTOR TO PREVENT THE
7 WASTE FLOW (GPM) FROM EXCEEDING THE RATED FLOW CAPACITY OF THE
8 INTERCEPTOR. THE AIR INTAKE FOR THE FLOW CONTROL DEVICE SHALL BE
9 CONNECTED TO THE SANITARY VENT PIPING SYSTEM OR BE OTHERWISE
10 VENTED TO OUTDOORS IN ACCORDANCE WITH CHAPTER 12.

11 6.2.1.3 TYPE II GRAVITY GREASE INTERCEPTORS

12 a. OUTDOOR UNDERGROUND GRAVITY GREASE INTERCEPTORS
13 SERVING COMMERCIAL KITCHENS SHALL BE SIZED AND DESIGNED BY A
14 REGISTERED DESIGN PROFESSIONAL WHO IS LICENSED TO PRACTICE IN THE
15 STATE OF MARYLAND.

16 b. GRAVITY GREASE INTERCEPTORS SHALL COMPLY WITH THE
17 REQUIREMENTS OF THE ADMINISTRATIVE AUTHORITY, INCLUDING MATERIALS
18 OF CONSTRUCTION, ARRANGEMENT, MINIMUM SIZE, AND RETENTION TIME.

19 c. WHERE DRAIN PIPING AND A GRAVITY GREASE INTERCEPTOR ARE
20 PROVIDED FOR THE FUTURE INSTALLATION OF A COMMERCIAL KITCHEN, THE
21 DESIGN PLANS SHALL INDICATE THE MAXIMUM PERMITTED FUTURE DRAINAGE
22 LOAD IN EITHER GALLONS PER MINUTE (EXCLUDING DIVERSITY) OR DRAINAGE
23 FIXTURE UNITS (DFU).

1 6.2.2 COMPLIANCE FOR GREASE INTERCEPTOR SIZES UP TO 100 GPM

2 a. TYPE I HYDRO-MECHANICAL GREASE INTERCEPTORS SHALL
3 COMPLY WITH ASME A112.14.3 AND SECTION 6.2.1.1, AND BE INSTALLED IN
4 ACCORDANCE WITH THE RECOMMENDATIONS OF PDI STANDARD G101 AND THE
5 MANUFACTURER'S INSTRUCTIONS. THEY SHALL HAVE A GREASE RETENTION
6 CAPACITY NOT LESS THAN TWO POUNDS FOR EACH GPM OF RATED FLOW. A
7 FLOW CONTROL DEVICE SHALL BE PROVIDED TO PREVENT THE WASTE FLOW
8 (GPM) THROUGH THE INTERCEPTOR FROM EXCEEDING ITS RATED FLOW
9 CAPACITY. AN AIR INTAKE SHALL BE PROVIDED FOR THE FLOW CONTROL AS
10 RECOMMENDED BY THE MANUFACTURER OR PDI STANDARD G101.

11 b. GREASE INTERCEPTORS THAT INCLUDE AUTOMATIC GREASE
12 REMOVAL OR RECOVERY (GRD) SHALL COMPLY WITH ASME A112.14.4 AND
13 SECTION 6.2.1.2.

14 6.2.3 FIXTURE TRAPS

15 a. FIXTURES THAT DISCHARGE INTO A HYDRO-MECHANICAL OR GRD
16 GREASE INTERCEPTOR SHALL BE TRAPPED AND VENTED BETWEEN THE FIXTURE
17 AND THE INTERCEPTOR.

18 EXCEPTION: A HYDRO-MECHANICAL OR GRD GREASE INTERCEPTOR WITH THE
19 REQUIRED FLOW CONTROL DEVICE SHALL BE PERMITTED TO SERVE AS A TRAP
20 FOR AN INDIVIDUAL FIXTURE IF THE DEVELOPED LENGTH OF THE DRAIN
21 BETWEEN THE FIXTURE AND THE INTERCEPTOR DOES NOT EXCEED FOUR FEET
22 HORIZONTALLY AND 30 INCHES VERTICALLY.

1 b. WHERE ONE OR MORE FIXTURES DISCHARGE INTO A HYDRO-
2 MECHANICAL OR GRD GREASE INTERCEPTOR, THE REQUIRED VENTED FLOW
3 CONTROL DEVICE SHALL BE INSTALLED IN THE DRAIN LINE BETWEEN THE
4 FIXTURE(S) AND THE INTERCEPTOR.

5 6.2.4 FIXTURE VENTING

6 FIXTURES DRAINING TO GREASE INTERCEPTORS SHALL BE VENTED IN
7 ACCORDANCE WITH THE APPLICABLE PROVISIONS OF CHAPTER 12, INCLUDING
8 COMBINATION WASTE AND VENT VENTING.

9 6.2.5 FOOD WASTE GRINDERS

10 a. WHERE FOOD WASTE GRINDERS DISCHARGE THROUGH A HYDRO-
11 MECHANICAL OR GRD GREASE INTERCEPTOR, A SOLIDS SEPARATOR SHALL BE
12 INSTALLED EITHER IN THE DRAIN LINE FROM THE FOOD WASTE GRINDER OR
13 UPSTREAM OF THE GREASE INTERCEPTOR TO PREVENT FOOD WASTE PARTICLES
14 FROM ENTERING THE GREASE INTERCEPTOR.

15 b. SOLIDS SEPARATORS SHALL NOT BE REQUIRED WHERE FOOD
16 WASTE GRINDERS DISCHARGE TO A GRAVITY GREASE INTERCEPTOR.

17 6.2.6 COMMERCIAL DISHWASHERS

18 a. COMMERCIAL DISHWASHERS SHALL BE PERMITTED TO DISCHARGE
19 THROUGH A GREASE INTERCEPTOR.

20 b. WHERE THE DISCHARGE RATE OF A COMMERCIAL DISHWASHER IN
21 GALLONS PER MINUTE IS CONVERTED TO DRAINAGE FIXTURE UNITS (DFU),
22 EACH 7.5 GPM OF DISCHARGE SHALL BE EQUATED TO ONE (1) DFU, WITH THE
23 TOTAL ROUNDED UP TO THE NEXT WHOLE DFU.

1 6.2.7 LOCATION

2

3 HYDRO-MECHANICAL AND GRD INTERCEPTORS SHALL BE PERMITTED TO BE
4 INSTALLED WITHIN BUILDINGS UNLESS OTHERWISE PROHIBITED BY THE
5 ADMINISTRATIVE AUTHORITY. WHERE GRAVITY GREASE INTERCEPTORS OR
6 HOLDING TANKS ARE REMOTE FROM THE FIXTURES SERVED, THE DRAIN PIPING
7 BETWEEN THE FIXTURES AND THE INTERCEPTOR OR HOLDING TANK SHALL BE
8 AS DIRECT AS POSSIBLE AND SHALL INCLUDE PROVISIONS FOR PERIODIC
9 CLEANING.

10 6.2.8 PROHIBITED INTERCEPTORS

11 THE INSTALLATION OF WATER-COOLED GREASE INTERCEPTORS IS
12 PROHIBITED.

13 6.2.9 CHEMICALS - WHERE PROHIBITED

14 a. THE USE OF ENZYMES, EMULSIFIERS, OR SIMILAR CHEMICALS IN
15 HYDRO-MECHANICAL GREASE INTERCEPTORS, GRD GREASE INTERCEPTORS,
16 AND GRAVITY INTERCEPTORS IS PROHIBITED.

17 b. SINKS OR SINK COMPARTMENTS USED FOR SANITIZING POTS OR
18 OTHER WARE SHALL NOT BE DRAINED THROUGH A GREASE INTERCEPTOR.

19 6.2.10 INTERCEPTOR SIZING

20 a. WHERE HYDRO-MECHANICAL INTERCEPTORS AND GREASE
21 REMOVAL DEVICES (GRD) SERVE ONE OR MORE INDIVIDUAL FIXTURES, THEY
22 SHALL BE SIZED FOR THE TOTAL DRAINAGE FLOW RATE FROM THE FIXTURES
23 SERVED IN ACCORDANCE WITH TABLE 6.2.10. ALL COMPARTMENTS OF MULTI-
24 COMPARTMENT SINKS SHALL BE CONSIDERED TO DRAIN SIMULTANEOUSLY,

1 EXCEPT THAT SANITIZING COMPARTMENTS SHALL NOT BE DRAINED THROUGH
2 A GREASE INTERCEPTOR.

3 b. GRAVITY INTERCEPTORS FOR COMMERCIAL KITCHENS SHALL BE
4 SIZED BASED ON THE INLET PIPE SIZE FLOWING FULL ACCORDING TO APPENDIX
5 K AND THE RETENTION TIME REQUIRED BY THE ADMINISTRATIVE AUTHORITY.

6 Table 6.2.10

7 FIXTURE DRAINAGE FLOW RATES FOR SIZING
8 HYDRO-MECHANICAL AND GRD GREASE INTERCEPTORS
9

FIXTURE	FLOW
1-1/4" Sink Drain Outlet (each)	7.5 GPM
1-1/2" Sink Drain Outlet (each)	15 GPM
2" Sink Drain Outlet (each)	22.5 GPM
Floor Drain without Indirect Waste	0 GPM
Floor Drain or Floor Sink with Indirect Waste	(1)
Commercial Dishwasher	(2)

10
11 NOTES

- 12 (1) The GPM drain load shall be the total indirect waste flow in GPM.
13 (2) The GPM drain load for a commercial dishwasher shall be not less than the
14 manufacturer's peak rate of drain flow with a full tank.

15
16
17 6.2.11 INDIVIDUAL DWELLING UNITS

18 GREASE INTERCEPTORS SHALL NOT BE REQUIRED IN INDIVIDUAL
19 DWELLING UNITS OR ANY PRIVATE LIVING QUARTERS.

20 6.3 OIL/WATER SEPARATORS

21 6.3.1 WHERE REQUIRED AND APPROVED POINT OF DISCHARGE

22 a. LIQUID WASTE CONTAINING GREASE, OIL, SOLVENTS, OR
23 FLAMMABLE LIQUIDS SHALL NOT BE DIRECTLY DISCHARGED INTO ANY
24 SANITARY SEWER, STORM SEWER, OR OTHER POINT OF DISPOSAL. SUCH

1 CONTAMINANTS SHALL BE REMOVED BY AN APPROPRIATE SEPARATOR.

2 b. SAND INTERCEPTORS AND OIL SEPARATORS SHALL BE PROVIDED
3 WHEREVER FLOORS, PITS OR SURFACE AREAS SUBJECT TO ACCUMULATION OF
4 GREASE OR OIL FROM SERVICE OR REPAIR OPERATIONS ARE DRAINED OR
5 WASHED INTO A DRAINAGE SYSTEM. SUCH LOCATIONS INCLUDE, BUT ARE NOT
6 LIMITED TO, CAR OR TRUCK WASHING FACILITIES, ENGINE CLEANING
7 FACILITIES, AND SIMILAR OPERATIONS. THE DRAINAGE OR EFFLUENT FROM
8 SUCH LOCATIONS SHALL BE CONNECTED TO THE SANITARY SEWER.

9 c. DRAINS SHALL NOT BE REQUIRED IN SERVICE OR REPAIR GARAGES
10 THAT EMPLOY DRY ABSORBENT CLEANING METHODS; HOWEVER, IF ANY
11 DRAINS ARE LOCATED IN SUCH AREAS, THEY SHALL DISCHARGE TO THE
12 SANITARY SEWER THROUGH A SAND INTERCEPTOR AND OIL SEPARATOR.

13 d. INTERCEPTORS AND SEPARATORS SHALL NOT BE REQUIRED IN
14 PARKING GARAGES UNLESS THE GARAGE, OR PORTIONS THEREOF, HAS
15 PROVISIONS FOR EITHER WASHING VEHICLES OR RINSING THE FLOOR. WHERE
16 SUCH CLEANING FACILITIES ARE PROVIDED, THE AREA SUBJECT TO WASTE
17 DRAINAGE SHALL BE PROVIDED WITH ONE OR MORE FLOOR DRAINS, COMPLETE
18 WITH SAND INTERCEPTOR AND OIL SEPARATOR, AND THE EFFLUENT FROM THE
19 OIL SEPARATOR SHALL BE CONNECTED TO THE SANITARY SEWER.

20 e. WHERE PARKING GARAGES WITHOUT PROVISIONS FOR VEHICLE
21 WASHING OR FLOOR RINSING REQUIRE STORM WATER DRAINAGE, DRAINS
22 SHALL BE PERMITTED TO CONNECT TO THE STORM SEWER WITHOUT A SAND
23 INTERCEPTOR AND OIL SEPARATOR. SUCH DRAINAGE, INCLUDING MELTING

1 SNOW, ICE OR RAINWATER RUNOFF FROM VEHICLES, SHALL NOT BE
2 CONNECTED TO THE SANITARY SEWER.

3 f. WHERE OIL SEPARATORS INCLUDE A WASTE HOLDING TANK, IT
4 SHALL NOT BE USED TO STORE OR CONTAIN ANY OTHER WASTE OIL (E.G.,
5 MOTOR OIL) OR HAZARDOUS FLUID.

6 **CHAPTER 7 – PLUMBING FIXTURES, FIXTURE FITTINGS AND PLUMBING**
7 **APPLIANCES**

8 7.2 FIXTURES FOR ACCESSIBLE USE

9 PLUMBING FIXTURES FOR USE BY HANDICAPPED OR DISABLED PEOPLE
10 AND THEIR INSTALLATION SHALL COMPLY WITH APPLICABLE SECTIONS OF
11 FEDERAL AND STATE LAW PROVIDING ACCESSIBILITY AND USABILITY FOR
12 PHYSICALLY HANDICAPPED PEOPLE.

13 7.10.6 SHOWER FLOORS OR RECEPTORS

14 a. FLOORS OR RECEPTORS FOR SHOWER COMPARTMENTS SHALL BE
15 LAID ON OR BE SUPPORTED BY A SMOOTH AND STRUCTUALLY SOUND BASE.

16 b. SHOWER PANS SHALL BE PROVIDED UNDER THE FLOORS OF SHOWER
17 COMPARTMENTS. EXCEPTION: SHOWER PANS SHALL NOT BE REQUIRED WHEN
18 PREFABRICATED SHOWER RECEPTORS ARE USED.

19 c. SHOWER PANS SHALL FORM A WATERTIGHT LINING BENEATH THE
20 SHOWER FLOOR AND SHALL PITCH TO THE SHOWER DRAIN LOCATION.

21 d. SHOWER PANS SHALL TURN UP AT LEAST 2 INCHES ABOVE THE
22 FINISHED THRESHOLD LEVEL ON ALL SIDES.

1 e. SHOWER PANS SHALL BE SECURELY FASTENED TO THE SHOWER
2 WASTE OUTLET AT THE SEEPAGE ENTRANCE, MAKING A WATERTIGHT JOINT
3 BETWEEN THE PAN AND THE WASTE OUTLET.

4 f. FINISHED SHOWER FLOOR SURFACES SHALL BE SMOOTH, NON-
5 CORROSIVE, NON-ABSORBENT, AND WATERPROOF.

6 7.16 FLOOR AND FRENCH DRAINS

7 7.16.6 FLOOR SLOPE

8 WHERE FLOOR DRAINS RECEIVE INDIRECT WASTE OR OTHER DRAINAGE
9 ON A REGULAR OR FREQUENT BASIS, THE ELEVATION OF THE FLOOR DRAIN
10 SHALL BE SET SO THAT THE FLOOR WITHIN A 2 FOOT RADIUS CAN BE SLOPED TO
11 THE DRAIN INLET.

12 TABLE 7.21.1 MINIMUM NUMBER OF REQUIRED FIXTURES

13 NOTE 1: FOR ACCESSIBLE REQUIREMENTS, SEE LOCAL, STATE OR NATIONAL
14 CODES. ADDITIONAL FIXTURES MAY BE REQUIRED WHERE ENVIRONMENTAL
15 CONDITIONS OR SPECIAL ACTIVITIES MAY BE ENCOUNTERED.

16 **CHAPTER 10 – WATER SUPPLY AND DISTRIBUTION**

17 10.2 IDENTIFICATION OF POTABLE AND NON-POTABLE WATER

18 a. IN BUILDINGS WHERE DUAL WATER DISTRIBUTION SYSTEMS ARE
19 INSTALLED, ONE POTABLE AND THE OTHER NON-POTABLE, EACH SYSTEM
20 SHALL BE IDENTIFIED EITHER BY COLOR MARKING, METAL TAGS, OR OTHER
21 APPROPRIATE METHODS SUCH AS MAY BE APPROVED BY THE ADMINISTRATIVE
22 AUTHORITY. EACH OUTLET ON THE NON-POTABLE WATER SYSTEM THAT MAY

1 BE USED FOR DRINKING OR DOMESTIC PURPOSES SHALL BE POSTED: **DANGER**
2 (RED BACKGROUND) - **UNSAFE WATER - DO NOT DRINK.**

3 b. COLOR CODING OF PIPING SHALL BE BASED ON ANSI A13.1. SYSTEM
4 DESIGNATIONS AND BACKGROUND COLORS SHALL BE AS FOLLOWS OR THE
5 EQUIVALENT:

6 POTABLE WATER = GREEN

7 NON-POTABLE WATER = YELLOW

8 COLD WATER SUPPLY = GREEN

9 HOT WATER SUPPLY = YELLOW

10 HOT WATER RETURN = YELLOW

11 SANITARY DRAIN = GREEN

12 PLUMBING VENT = GREEN

13 WASTE = GREEN

14 WASTE (CORROSIVE) = YELLOW

15 STORM DRAIN = GREEN

16 ROOF DRAIN = GREEN

17 10.4 PROTECTION OF POTABLE WATER SUPPLY

18 10.4.9 WATER AS A HEAT-TRANSFER FLUID

19 POTABLE WATER MAY BE USED AS A HEAT-TRANSFER FLUID PROVIDED
20 THAT THE POTABLE WATER SYSTEM IS PROTECTED AGAINST CROSS
21 CONNECTIONS.

22 10.5 BACKFLOW PREVENTION

23 10.5.9 PROTECTION FROM FIRE SYSTEMS

1 a. POTABLE WATER SUPPLIES TO WATER-BASED FIRE PROTECTION
2 SYSTEMS, INCLUDING BUT NOT LIMITED TO STANDPIPES AND AUTOMATIC
3 SPRINKLER SYSTEMS, SHALL BE PROTECTED FROM BACK-PRESSURE AND
4 BACK-SIPHONAGE BY ONE OF THE FOLLOWING TESTABLE DEVICES:

5 1. DOUBLE CHECK FIRE PROTECTION BACKFLOW PROTECTION
6 ASSEMBLY - ASSE 1015 (DCF)

7 2. DOUBLE CHECK DETECTOR FIRE PROTECTION BACKFLOW
8 PROTECTION ASSEMBLY - ASSE 1048 (DCDF)

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

11 4. REDUCED PRESSURE DETECTOR FIRE PROTECTION BACKFLOW
12 PREVENTION ASSEMBLY - ASSE 1047 (RPDF)

13 EXCEPTIONS

14 (1) ASSE 1024 DUAL CHECK VALVES IN RESIDENTIAL SPRINKLER
15 SYSTEMS

16 (2) ASSE 1024 DUAL CHECK VALVES IN LIMITED AREA SPRINKLER
17 SYSTEMS

18 (3) WHERE FIRE PROTECTION SYSTEMS INCLUDE A FIRE DEPARTMENT
19 CONNECTION, DOUBLE CHECK VALVE ASSEMBLES (DCF OR DCDF) SHALL BE
20 PERMITTED UNLESS REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLIES
21 (RPF OR RPDF) ARE REQUIRED BY THE ADMINISTRATIVE AUTHORITY.

1 (4) WHERE FIRE PROTECTION SYSTEMS ARE FILLED WITH SOLUTIONS
2 THAT ARE CONSIDERED TO BE HEALTH HAZARDS AS DEFINED IN SECTION 1.2,
3 DOUBLE CHECK VALVE ASSEMBLIES (DCF OR DCDF) SHALL NOT BE PERMITTED.

4 (5) RESILIENTLY-SEATED CHECK VALVES WHERE PERMITTED BY
5 SECTION 10.5.9.1.

6 b. WHENEVER A BACKFLOW PROTECTION DEVICE IS INSTALLED IN A
7 POTABLE WATER SUPPLY TO A FIRE PROTECTION SYSTEM, THE HYDRAULIC
8 DESIGN OF THE FIRE PROTECTION SYSTEM SHALL ACCOUNT FOR THE PRESSURE
9 DROP THROUGH THE BACKFLOW PROTECTION DEVICE.

10 c. IF BACKFLOW PROTECTION DEVICES ARE RETROFITTED FOR AN
11 EXISTING FIRE PROTECTION SYSTEM, THE HYDRAULICS OF THE FIRE
12 PROTECTION SYSTEM SHALL BE CHECKED TO VERIFY THAT THERE IS
13 SUFFICIENT WATER PRESSURE AVAILABLE FOR SATISFACTORY OPERATION OF
14 THE FIRE PROTECTION SYSTEM.

15 10.5.9.1 INSUFFICIENT PUBLIC WATER PRESSURE FOR A RESIDENTIAL
16 SPRINKLER SYSTEM

17 a. IN SINGLE DWELLING UNITS WITH FIRE SPRINKLER SYSTEMS
18 DESIGNED ACCORDING TO NFPA 13D - STANDARD FOR THE INSTALLATION OF
19 SPRINKLER SYSTEMS IN ONE- AND TWO-FAMILY DWELLINGS, IF THE MINIMUM
20 AVAILABLE WATER PRESSURE IN THE PUBLIC WATER SUPPLY IS INSUFFICIENT
21 TO OVERCOME THE RATED PRESSURE DROP FOR THE BACKFLOW PROTECTION
22 DEVICES LISTED IN SECTION 10.5.9, THE ADMINISTRATIVE AUTHORITY MAY

1 PERMIT THE INSTALLATION OF A SINGLE CHECK VALVE, PROVIDED THAT ALL
2 OF THE FOLLOWING CONDITIONS ARE MET:

- 3 1. THE PIPING MATERIALS IN THE FIRE SPRINKLER SYSTEM ARE
4 APPROVED FOR POTABLE WATER, AS LISTED IN CHAPTER 3,
- 5 2. THE WATER METER IS INCREASED TO 1" MINIMUM SIZE,
- 6 3. THE WATER SERVICE LINE IS INCREASED TO 1-1/2" MINIMUM PIPE
7 SIZE,
- 8 4. THE SERVICE SHUTOFF VALVE IS A GATE VALVE, FULL-PORTED
9 BALL VALVE, OR OTHER FULL-WAY VALVE,
- 10 5. THE FIRE SPRINKLER SYSTEM IS FILLED WITH POTABLE WATER AND
11 CONTAINS NO ANTIFREEZE SOLUTIONS OR OTHER CHEMICAL ADDITIVES,
- 12 6. THE CHECK VALVE IS RESILIENTLY SEATED AND IS APPROVED BY
13 THE ADMINISTRATIVE AUTHORITY, AND
- 14 7. PRESSURE GAUGES ARE INSTALLED ON THE INLET AND OUTLET
15 SIDES OF THE CHECK VALVE TO INDICATE BACKFLOW PAST THE VALVE SEAT.

16 10.9 FLUSHING AND DISINFECTING POTABLE WATER SYSTEMS

17 10.9.2 DISINFECTING

18 a. ALL WATER SERVICE PIPING, HOT AND COLD WATER DISTRIBUTION
19 PIPING, HOT WATER HEATERS, AND WATER STORAGE OR PRESSURE TANKS IN
20 NEW OR RENOVATED POTABLE WATER SYSTEMS SHALL BE DISINFECTED AFTER
21 FLUSHING AND PRIOR TO USE.

22 b. THE PROCEDURE USED SHALL BE AS FOLLOWS OR AN APPROVED
23 EQUIVALENT:

1 1. ALL WATER OUTLETS SHALL BE POSTED TO WARN AGAINST USE
2 DURING DISINFECTING OPERATIONS.

3 2. FAUCET AERATORS AND SCREENS SHALL BE REMOVED PRIOR TO
4 DISINFECTING TO FACILITATE FLUSHING.

5 3. DISINFECTING SHALL BE PERFORMED BY PERSONS EXPERIENCED IN
6 SUCH WORK.

7 4. THE WATER SUPPLY TO THE PIPING SYSTEM OR PARTS THEREOF BEING
8 DISINFECTED SHALL BE VALVED-OFF FROM THE NORMAL WATER SOURCE TO
9 PREVENT THE INTRODUCTION OF DISINFECTING AGENTS INTO A PUBLIC WATER
10 SUPPLY OR PORTIONS OF A SYSTEM THAT ARE NOT BEING DISINFECTED.

11 5. THE PIPING SHALL BE DISINFECTED WITH A WATER-CHLORINE
12 SOLUTION. DURING THE INJECTION OF THE DISINFECTING AGENT INTO THE
13 PIPING, EACH OUTLET SHALL BE FULLY OPENED SEVERAL TIMES UNTIL A
14 CONCENTRATION OF NOT LESS THAN 50 PARTS PER MILLION CHLORINE IS
15 PRESENT AT EVERY OUTLET. THE SOLUTION SHALL BE ALLOWED TO STAND IN
16 THE PIPING FOR AT LEAST 24 HOURS.

17 6. AN ACCEPTABLE ALTERNATE TO THE 50 PPM/24-HOUR PROCEDURE
18 DESCRIBED IN SECTION 10.9.2.B.5 SHALL BE TO MAINTAIN A LEVEL OF NOT LESS
19 THAN 200 PARTS PER MILLION CHLORINE FOR NOT LESS THAN THREE HOURS. IF
20 THIS ALTERNATE PROCEDURE IS USED, THE HEAVILY CONCENTRATED
21 CHLORINE SHALL NOT BE ALLOWED TO STAND IN THE PIPING SYSTEM FOR
22 MORE THAN 6 HOURS. ALSO, SPECIAL PROCEDURES SHALL BE USED TO DISPOSE

1 OF THE HEAVILY CONCENTRATED CHLORINE IN AN ENVIRONMENTALLY
2 ACCEPTABLE AND APPROVED MANNER.

3 7. AT THE END OF THE REQUIRED RETENTION TIME, THE RESIDUAL LEVEL
4 OF CHLORINE AT EVERY OUTLET SHALL BE NOT LESS THAN FIVE PARTS PER
5 MILLION. IF THE RESIDUAL IS LESS THAN FIVE PARTS PER MILLION, THE
6 DISINFECTING PROCEDURE SHALL BE REPEATED UNTIL THE REQUIRED
7 MINIMUM CHLORINE RESIDUAL IS OBTAINED AT EVERY OUTLET.

8 8. AFTER THE REQUIRED RESIDUAL CHLORINE LEVEL IS OBTAINED AT
9 EVERY OUTLET, THE SYSTEM SHALL BE FLUSHED TO REMOVE THE
10 DISINFECTING AGENT. FLUSHING SHALL CONTINUE UNTIL THE CHLORINE LEVEL
11 AT EVERY OUTLET IS REDUCED TO THAT OF THE INCOMING WATER SUPPLY.

12 9. FAUCET AERATORS OR SCREENS THAT WERE REMOVED PRIOR TO
13 DISINFECTING SHALL BE REPLACED.

14 10. A CERTIFICATION OF PERFORMANCE AND LABORATORY TEST REPORT
15 SHOWING THE ABSENCE OF COLIFORM ORGANISMS SHALL BE SUBMITTED TO
16 THE ADMINISTRATIVE AUTHORITY UPON SATISFACTORY COMPLETION OF THE
17 DISINFECTING OPERATIONS.

18 c. WHERE A NEW ADDITION TO AN EXISTING PIPING SYSTEM CAN BE
19 COMPLETELY ISOLATED FROM THE EXISTING SYSTEM, ONLY THE NEW PIPING
20 SHALL BE REQUIRED TO BE DISINFECTED.

21 10.12.6 INDIVIDUAL FIXTURE VALVES

22 IN A BUILDING USED OR INTENDED TO BE USED FOR OTHER THAN
23 DWELLING PURPOSES, THE WATER DISTRIBUTION PIPE TO EACH FIXTURE OR

1 OTHER PIECE OF EQUIPMENT SHALL BE PROVIDED WITH A VALVE OR FIXTURE
2 STOP TO SHUT OFF THE WATER TO THE FIXTURE OR TO THE ROOM IN WHICH IT
3 IS LOCATED. THESE VALVES SHALL BE ACCESSIBLE. EACH SILL COCK AND
4 WALL HYDRANT SHALL BE SEPARATELY CONTROLLED BY A VALVE INSIDE
5 THE BUILDING.

6 10.15 HOT WATER

7 10.15.2 TEMPERATURE MAINTENANCE WHERE REQUIRED.

8
9 HEATED WATER DISTRIBUTION SYSTEMS IN BUILDINGS WHERE
10 DEVELOPED LENGTH OF HEATED WATER PIPING FROM THE SOURCE OF THE
11 HEATED WATER TO THE FURTHEST FIXTURE EXCEEDS 100 FEET SHALL
12
13 MAINTAIN HEATED WATER TEMPERATURE IN ALL SUPPLY PIPING TO WITHIN 25
14
15 FEET OF ANY HEATED WATER OUTLET.
16
17

18
19 10.15.7 THERMAL EXPANSION CONTROL

20 WHERE A WATER PRESSURE REGULATOR (WITH OR WITHOUT AN
21 INTERNAL THERMAL EXPANSION BYPASS), A BACKFLOW PREVENTION DEVICE,
22 OR A CHECK VALVE IS INSTALLED SERVING WATER HEATING EQUIPMENT SUCH
23 THAT A CLOSED SYSTEM IS CREATED, A DEVICE FOR CONTROLLING THERMAL
24 EXPANSION SHALL BE PROVIDED.

25 EXCEPTION: INSTANTANEOUS WATER HEATERS.

26 10.15.9.1 WHERE REQUIRED

27 WHERE WATER HEATERS OR HOT WATER STORAGE TANKS ARE
28 INSTALLED IN LOCATIONS WHERE LEAKAGE WILL CAUSE STRUCTURAL

1 DAMAGE TO THE BUILDING, THE TANK OR WATER HEATER SHALL BE
2 INSTALLED IN A DRIP PAN IN ACCORDANCE WITH SECTION 10.15.9.

3 10.15.9.2 CONSTRUCTION

4 a. DRIP PANS SHALL BE WATERTIGHT AND CONSTRUCTED OF
5 CORROSION-RESISTANT MATERIALS. METALLIC PANS SHALL BE 24 GAGE
6 MINIMUM. NON-METALLIC PANS SHALL BE 0.0625-INCH MINIMUM THICKNESS.
7 PANS SHALL BE NOT LESS THAN 1-1/2" DEEP AND SHALL BE OF SUFFICIENT SIZE
8 TO HOLD THE HEATER WITHOUT INTERFERING WITH DRAIN VALVES, BURNERS,
9 CONTROLS, AND ANY REQUIRED ACCESS. THE PANS SHALL NOT BE DEEPER
10 THAN THE ELEVATION OF THE BOTTOM OF THE WATER HEATER TANK OR
11 STORAGE TANK.

12 b. HIGH IMPACT PLASTIC PANS SHALL BE PERMITTED UNDER GAS-
13 FIRED WATER HEATERS WHERE THE HEATER IS LISTED FOR ZERO CLEARANCE
14 FOR COMBUSTIBLE FLOORS AND THE APPLICATION IS RECOMMENDED BY THE
15 PAN MANUFACTURER.

16 10.15.9.3 DRAINAGE

17 a. DRIP PANS SHALL HAVE DRAIN OUTLETS NOT LESS THAN 3/4" SIZE,
18 WITH INDIRECT DRAIN PIPES EXTENDING TO AN APPROVED POINT OF
19 DISCHARGE, A SUITABLY LOCATED INDIRECT WASTE RECEPTOR, OR FLOOR
20 DRAIN.

21 b. DISCHARGE FROM A RELIEF VALVE INTO A WATER HEATER PAN IS
22 PROHIBITED.

23 10.16 SAFETY DEVICES FOR PRESSURE VESSELS

1 10.16.2 PRESSURE RELIEF VALVES

2 a. PRESSURE RELIEF VALVES SHALL COMPLY WITH THE APPLICABLE
3 STANDARDS LISTED IN TABLE 3.1.3.

4 b. THE VALVES SHALL HAVE A RELIEF SETTING NOT MORE THAN THE
5 PRESSURE RATING OF THE TANK OR 150 PSIG MAXIMUM, AND SHALL BE
6 INSTALLED EITHER DIRECTLY IN A TANK TAPPING OR IN THE HOT OR COLD
7 WATER PIPING CLOSE TO THE TANK. PRESSURE RELIEF VALVES SHALL NOT BE
8 INSTALLED IN HOT WATER PIPING UNLESS RATED FOR 180°F.

9 c. THERE SHALL BE NO SHUTOFF VALVE BETWEEN THE PRESSURE
10 RELIEF VALVE AND THE TANK.

11 d. THE PRESSURE RELIEF VALVE SHALL BE SET TO OPEN AT NOT LESS
12 THAN 25 PSIG ABOVE THE STREET MAIN PRESSURE OR NOT LESS THAN 25 PSIG
13 ABOVE THE SETTING OF ANY BUILDING WATER PRESSURE REGULATING VALVE.

14 10.16.5 TANKLESS WATER HEATERS

15 a. TANKLESS INSTANTANEOUS WATER HEATERS SHALL HAVE AN
16 OVERHEAT PREVENTION DEVICE TO SHUTOFF THE UNIT IN THE EVENT OF
17 UNSAFE HIGH WATER TEMPERATURE. THE PRESSURE AND TEMPERATURE TANK
18 PROTECTION REQUIRED BY SECTION 10.16.1 SHALL NOT BE NECESSARY UNLESS
19 REQUIRED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

20 b. THE OUTLET TEMPERATURE CONTROL DEVICE FOR TANKLESS
21 WATER HEATERS SHALL BE SET TO SUPPLY NO MORE THAN 140°F HOT WATER.

22 10.16.7 VACUUM RELIEF VALVES

1 a. WHERE THE OUTLET OF A WATER HEATER OR HOT WATER STORAGE
2 TANK IS LOCATED ABOVE A HOT WATER OUTLET THAT IT SERVES, THE WATER
3 HEATER OR STORAGE TANK SHALL BE PROTECTED BY A VACUUM RELIEF
4 VALVE.

5 b. WHERE A WATER HEATER OR HOT WATER STORAGE TANK IS
6 LOCATED ON THE SUCTION SIDE OF A PRESSURE BOOSTER PUMP, THE WATER
7 HEATER AND STORAGE TANK SHALL BE PROTECTED BY A VACUUM RELIEF
8 VALVE.

9 c. VACUUM RELIEF VALVES SHALL COMPLY WITH ANSI Z21.22 AND BE
10 RATED FOR NOT LESS THAN 210°F.

11 d. WHERE WATER HEATERS ARE LOCATED ABOVE A HOT WATER
12 STORAGE TANK THAT THEY SERVE, VACUUM RELIEF SHALL BE PROVIDED FOR
13 THE WATER HEATER.

14 e. WHERE WATER HEATERS ARE LOCATED BELOW A HOT WATER
15 STORAGE TANK THAT THEY SERVE, VACUUM RELIEF SHALL BE PROVIDED FOR
16 THE STORAGE TANK.

17 f. VACUUM RELIEF VALVES FOR WATER HEATERS SHALL BE
18 INSTALLED IN THE COLD WATER SUPPLY PIPING TO THE WATER HEATER AT AN
19 ELEVATION AT LEAST TWO FEET ABOVE THE TOP OF THE WATER HEATER.

20 g. VACUUM RELIEF VALVES FOR HOT WATER STORAGE TANKS SHALL
21 BE LOCATED EITHER IN THE HOT WATER INLET OR OUTLET PIPING OF THE TANK
22 AT AN ELEVATION AT LEAST TWO FEET ABOVE THE TOP OF THE TANK.

23 10.17 MANIFOLD-TYPE PARALLEL WATER DISTRIBUTION SYSTEMS

1 10.17.1 GENERAL

2 a. PARALLEL WATER DISTRIBUTION SYSTEMS SHALL PROVIDE
3 INDIVIDUAL HOT AND COLD WATER SUPPLY LINES FROM A MANIFOLD TO EACH
4 FIXTURE SERVED.

5 b. MANIFOLDS SHALL BE SPECIFICALLY DESIGNED AND
6 MANUFACTURED FOR PARALLEL WATER DISTRIBUTION.

7 c. MANUFACTURER'S OF SUCH SYSTEMS SHALL PROVIDE COMPLETE
8 SIZING AND INSTALLATIONS INSTRUCTIONS, INCLUDING ANY LIMITATIONS OR
9 RESTRICTIONS ON USE.

10 d. PIPING MATERIALS SHALL BE AS RECOMMENDED BY THE SYSTEM
11 MANUFACTURER AND BE LISTED IN TABLE 3.4 FOR HOT AND COLD WATER
12 DISTRIBUTION.

13 10.17.2 SIZING

14 SEE APPENDIX B FOR SIZING MANIFOLDS AND DISTRIBUTION LINES.
15 DISTRIBUTION LINE SIZES SHALL BE AS RECOMMENDED BY THE SYSTEM.
16 MANUFACTURER TO PROVIDE THE FIXTURE FLOW RATES LISTED IN SECTION
17 10.14.2A. THE MINIMUM LINE SIZE SHALL BE 3/8" NOMINAL.

18 10.17.3 VALVING

19 a. EACH MANIFOLD OUTLET THAT IS EQUIPPED WITH A SHUTOFF
20 VALVE SHALL IDENTIFY THE FIXTURE BEING SUPPLIED. ADDITIONAL SHUT-OFF
21 OR STOP VALVES AT THE FIXTURES SHALL BE PROVIDED AS REQUIRED BY
22 SECTION 10.12.4.

1 EXCEPTION: ADDITIONAL SHUT-OFF OR STOP VALVES AT THE FIXTURES SHALL
2 NOT BE REQUIRED IF A MANIFOLD WITH SHUTOFF VALVES IS LOCATED WITHIN
3 THE SAME ROOM AS THE FIXTURES, OR IN AN ADJACENT CLOSET.

4 b. MANIFOLDS HAVING SHUTOFF VALVES SHALL BE READILY
5 ACCESSIBLE.

6 10.17.4 SUPPORT

7 a. TUBE BUNDLES FOR MANIFOLD SYSTEMS SHALL BE SUPPORTED IN
8 ACCORDANCE WITH CHAPTER 8 OF THIS CODE.

9 b. SUPPORTS AT CHANGES IN DIRECTION SHALL BE IN ACCORDANCE
10 WITH THE SYSTEM MANUFACTURER'S RECOMMENDATIONS.

11 10.17.5 COMBINED DISTRIBUTION SYSTEMS

12 MANIFOLD-TYPE PARALLEL WATER DISTRIBUTION SYSTEMS SHALL BE
13 PERMITTED TO BE COMBINED WITH CONVENTIONAL MAIN/BRANCH PIPING
14 SYSTEMS THAT SERVE ONE OR MORE FIXTURE(S) THROUGH COMMON MAIN AND
15 BRANCH PIPING.

16 **CHAPTER 11 – SANITARY DRAINAGE SYSTEMS**

17 TABLE 11.4.1 – DRAINAGE FIXTURE UNIT (DFU) VALUES

18 ADDITION TO TABLE: SHOWER STALL 1-1/2" TRAP HAS A DFU VALUE OF 2.0,
19 EXCEPT HEAVY-USE ASSEMBLY.

20 11.7 SUMPS AND EJECTORS

21 11.7.6 GRINDER PUMP EJECTOR

22 a. GRINDER PUMPS SHALL BE PERMITTED TO BE USED WHEN
23 INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

1 b. THE RATED FLOW VELOCITY FOR GRINDER PUMP DISCHARGE
2 PIPING SHALL BE NOT LESS THAN 2 FEET PER SECOND.

3 c. THE SIZE OF GRINDER PUMP DISCHARGE PIPING SHALL BE:
4 1-1/4" SIZE FOR UP TO 25 GALLONS PER MINUTE.
5 1-1/2" SIZE FOR UP TO 35 GALLONS PER MINUTE.
6 2" SIZE FOR UP TO 65 GALLONS PER MINUTE.

7 d. THE DISCHARGE PIPING FROM A GRINDER PUMP SHALL INCLUDE A
8 BACKWATER VALVE AND A FULL-WAY SHUTOFF VALVE.

9 e. GRINDER PUMPS SHALL BE COORDINATED WITH THE PRESSURE
10 REQUIREMENTS OF THE COMMUNITY OR MUNICIPAL SEWER TO WHICH THEY
11 ARE CONNECTED.

12 **CHAPTER 12 – VENTS AND VENTING**

13 12.10 WET VENTING

14 12.10.6 FLOOR DRAINS AND FLOOR SINKS

15 a. A LAVATORY OR SINK SHALL BE PERMITTED TO SERVE AS A WET
16 VENT FOR A FLOOR DRAIN OR FLOOR SINK IF ALL OF THE FOLLOWING
17 CONDITIONS ARE MET:

18 1. THE WET VENT SHALL BE NOT LESS THAN 1-1/2" SIZE FOR A 1 DFU
19 LAVATORY OR 2" FOR A 2 DFU SINK.

20 2. THE WET VENT SHALL BE LARGER THAN 1/2 THE SIZE OF THE DRAIN
21 FOR THE FLOOR DRAIN OR FLOOR SINK.

1 3. THE DISTANCE FROM THE OUTLET OF THE FLOOR DRAIN OR FLOOR
2 SINK TO THE CONNECTION OF THE WET VENT SHALL BE WITHIN THE LIMITS
3 ESTABLISHED BY TABLE 12.8.1.

4 **CHAPTER 13 – STORM WATER DRAINAGE**

5 13.1.2 STORM WATER DRAINAGE TO SANITARY SEWER PROHIBITED

6 13.1.5 FOUNDATION DRAINS

7 a. FOUNDATION DRAINS SHALL BE PROVIDED AROUND THE PERIMETER
8 OF BASEMENTS, CELLARS, CRAWL SPACES OR ANY BUILDING SPACE BELOW
9 GRADE. THE DRAINS SHALL BE POSITIONED EITHER INSIDE OR OUTSIDE OF THE
10 FOOTINGS, AND SHALL BE OF PERFORATED OR OPEN-JOINT APPROVED DRAIN
11 TILE OR PIPE NOT LESS THAN 3" PIPE SIZE. THE TOP OF FOUNDATION DRAINS
12 SHALL BE NOT LESS THAN 2 INCHES BELOW THE UNDERSIDE OF THE FLOOR
13 SLAB BEING PROTECTED.

14 b. WEEPHOLES

15 (1) WHERE FOUNDATION DRAINS ARE LOCATED ON THE INTERIOR SIDE
16 OF HOLLOW-CORE CONCRETE MASONRY UNITS, 1/2"–3/4" DIAMETER WEEPHOLES
17 SHALL BE LOCATED THROUGH THE INSIDE FACE OF THE FOUNDATION WALL AT
18 THE FOOTING ON 16-INCH CENTERS.

19 (2) WHERE FOUNDATION DRAINS ARE LOCATED ON THE INTERIOR SIDE
20 OF A Poured CONCRETE FOUNDATION WALL, 1-1/2" PIPES SHALL BE INSTALLED
21 THROUGH THE FOOTING ON SIX FOOT CENTERS.

22 13.1.10 ROOF DRAINAGE

23 13.1.10.1 PRIMARY ROOF DRAINAGE

1 ROOF AREAS OF A BUILDING SHALL BE DRAINED BY ROOF DRAINS OR
2 SCUPPERS UNLESS GUTTERS AND DOWNSPOUTS OR OTHER NON-PLUMBING
3 DRAINAGE IS PROVIDED. THE LOCATION AND SIZING OF ROOF DRAINS AND
4 SCUPPERS SHALL BE COORDINATED WITH THE STRUCTURAL DESIGN AND PITCH
5 OF THE ROOF. ROOF DRAINS, VERTICAL CONDUCTORS, LEADERS, AND
6 HORIZONTAL STORM DRAIN PIPING FOR PRIMARY DRAINAGE SHALL BE SIZED
7 BASED ON A STORM OF 60 MINUTES DURATION AND 100-YEAR RETURN PERIOD.
8 (SEE APPENDIX A)

9 **CHAPTER 15 – TESTS AND MAINTENANCE**

10 15.3 TESTING OF PLUMBING SYSTEMS

11 15.3.1 GENERAL

12 NEW PLUMBING SYSTEMS AND PARTS OF EXISTING SYSTEMS THAT
13 HAVE BEEN ALTERED, OR REPAIRED SHALL BE TESTED FOR LEAKS AND
14 DEFECTS.

15 **CHAPTER 16 – REGULATIONS GOVERNING INDIVIDUAL SEWAGE DISPOSAL**
16 **SYSTEMS FOR HOMES AND OTHER ESTABLISHMENTS WHERE PUBLIC**
17 **SEWAGE SYSTEMS ARE NOT AVAILABLE**

18 16.1 GENERAL PROVISIONS

19 16.1.1 GENERAL

20 THE USE AND MAINTENANCE OF INDIVIDUAL SEWAGE DISPOSAL SYSTEMS IS
21 GOVERNED UNDER AUTHORITY OF THE ENVIRONMENT ARTICLE, SECTIONS 9-
22 216, 9-233, 9-252, 10-103, 10-301, AND 10-304, ANNOTATED CODE OF MARYLAND,

1 AND CHAPTERS 26.04.02 AND 26.04.03 OF THE CODE OF MARYLAND
2 REGULATIONS.

3 16.1.9 APPROVING AUTHORITY

4 THE APPROVING AUTHORITY FOR THIS CHAPTER SHALL BE THE DIRECTOR
5 OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE
6 MANAGEMENT, OR THE DIRECTOR'S DESIGNEE.

7 16.6 CAPACITY OF SEPTIC TANKS

8 16.6.1 LIQUID CAPACITY

9 a. THE LIQUID CAPACITY OF SEPTIC TANKS FOR SINGLE DWELLING
10 UNITS HAVING UP TO FIVE BEDROOMS SHALL BE NOT LESS THAN 1500 GALLONS.
11 AN ADDITIONAL 250 GALLONS OF CAPACITY SHALL BE PROVIDED FOR EACH
12 BEDROOM IN EXCESS OF FIVE. SINGLE DWELLING UNITS HAVING THREE OR
13 MORE BEDROOMS SHALL BE SERVED BY SEPTIC TANKS HAVING TWO
14 COMPARTMENTS.

15 b. REQUIRED SEPTIC TANK CAPACITIES FOR BUILDINGS OTHER THAN
16 SINGLE DWELLING UNITS SHALL BE DETERMINED BY THE APPROVING
17 AUTHORITY BASED ON THE PROJECTED PEAK SEWAGE FLOW AND OTHER
18 PERTINENT CRITERIA.

19 16.6.7 DEPTH OF SEPTIC TANK

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

23 16.9 ABSORPTION TRENCHES

1 16.9.2 FILTER MATERIAL

2 THE FILTER MATERIAL SHALL BE WASHED GRAVEL, CRUSHED STONE, OR
3 CLEAN BANK RUN GRAVEL BETWEEN 1/2 INCH AND 2-1/2 INCHES IN SIZE. THE
4 FILTER MATERIAL SHALL EXTEND TO THE FULL WIDTH OF THE TRENCH. IT
5 SHALL BE NOT LESS THAN 6 INCHES BENEATH AND 2 INCHES ABOVE THE
6 ABSORPTION LINES. THE FILTER MATERIAL SHALL BE COVERED WITH BURLAP,
7 FILTER CLOTH, 2 INCHES OF STRAW, OR EQUIVALENT PERMEABLE MATERIAL.

8 16.9.5 ABSORPTION LINES

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

16 **CHAPTER 17 – POTABLE WATER SUPPLY SYSTEMS**

17 17.1 GENERAL REGULATION

18 17.1.3 CODE REFERENCE

19 WATER WELL CONSTRUCTION IN THE STATE OF MARYLAND IS
20 REGULATED UNDER AUTHORITY OF TITLE 9, SUBTITLE 13 OF THE ENVIRONMENT
21 ARTICLE OF THE ANNOTATED CODE OF MARYLAND AND CHAPTER 26.04.04 OF
22 THE CODE OF MARYLAND REGULATIONS (COMAR). ADDITIONALLY, NON-
23 COMMUNITY POTABLE WATER SYSTEMS ARE GOVERNED BY COMAR CHAPTER

1 26.04.02. THESE STATE OF MARYLAND REGULATIONS ARE HEREIN ADOPTED BY
2 REFERENCE.

3 17.1.4 APPROVING AUTHORITY

4 THE APPROVING AUTHORITY FOR THIS CHAPTER SHALL BE THE DIRECTOR
5 OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE
6 MANAGEMENT, OR HIS DESIGNEE.

7 17.2 QUANTITY OF WATER REQUIRED

8 A. THE QUANTITY OF WATER REQUIRED SHALL BE SUBJECT TO THE
9 REQUIREMENTS IN COMAR CHAPTER 26.04.04.07, WHICH ARE ADOPTED HEREIN
10 BY REFERENCE.

11 B. WHERE THE AVAILABLE PRIMARY SOURCE OF WATER DOES NOT
12 MEET THE REQUIREMENTS OF SECTION 17.2.A, ONE OF THE FOLLOWING
13 SECONDARY WATER SOURCES SHALL BE PROVIDED:

- 14 1. A PRESSURE STORAGE TANK OF SUFFICIENT SIZE.
- 15 2. A GRAVITY STORAGE TANK OF SUFFICIENT SIZE AND A PRESSURE
16 BOOSTER PUMP SYSTEM.

17 17.9 WELL TERMINALS

18 WELL TERMINALS SHALL BE SUBJECT TO THE REQUIREMENTS OF COMAR
19 CHAPTER 26.04.04.07 F., WHICH ARE ADOPTED HEREIN BY REFERENCE.

20 17.15 INTER-CONNECTIONS

21 17.15.1 BETWEEN SYSTEMS

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

1 17.15.2 BETWEEN PROPERTIES

2 NO INDIVIDUAL POTABLE WATER SYSTEM SHALL SERVE MORE THAN ONE
3 PROPERTY UNLESS APPROVED BY THE ADMINISTRATIVE AUTHORITY.

4 **CHAPTER 20 FUEL GAS PIPING AND EQUIPMENT**

5 20.1 NATURAL GAS

6 NATURAL GAS PIPING AND EQUIPMENT SHALL COMPLY WITH THE
7 NATIONAL FUEL GAS CODE – NFPA 54 – 2005.

8 20.2 LIQUID PETROLEUM (LP) GAS

9 LIQUID PETROLEUM (LP) GAS PIPING AND EQUIPMENT SHALL COMPLY
10 WITH THE LIQUID PETROLEUM GAS CODE – NFPA 58 – 2004.

11 SECTION 4. AND BE IT FURTHER ENACTED, that Section 21-15-101(h), of Title
12 15. Plumbers and Gasfitters, of Article 21. Permits, Licenses and Business Regulation, of the
13 Baltimore County Code, 2003, as amended, is hereby repealed and reenacted to read as follows:

14 (h) “Plumbing” has the meaning stated in the definition set forth in Chapter 1 of the [1971]
15 2006 National Standard Plumbing Code.

16 SECTION 5. AND BE IT FURTHER ENACTED, that this Act, having been passed
17 by the affirmative vote of five members of the County Council, shall take effect December 30,
18 2007.