PART 128 ELECTRICAL

8 PART 128.1 GENERAL. THE DESIGN AND CONSTRUCTION OF ALL NEW INSTALLATIONS OF
9 ELECTRICAL CONDUCTORS, FITTINGS, DEVICES AND FIXTURES FOR LIGHT, HEAT AND
10 POWER SERVICE EQUIPMENT USED FOR POWER SUPPLY TO RADIO AND TELEVISION
11 RECEIVING SYSTEMS AND AMATEUR RADIO TRANSMISSION SYSTEMS IN BUILDINGS AND
12 STRUCTURES, AND ALL ALTERATIONS OR EXTENSIONS TO EXISTING WIRING SYSTEMS
13 THEREIN TO INSURE SAFETY, SHALL CONFORM TO ARTICLE 21, TITLE 7, SUBTITLE 3 OF
14 THE BALTIMORE COUNTY CODE, 2003 AS AMENDED, INCLUDING THE REQUIREMENTS FOR
15 PERMITS AND INSPECTIONS WITH RESPECT THERETO, AND TO THE NATIONAL
16 ELECTRICAL CODE, AS AMENDED.
17 PART 128.1.1 OUT OF STATE LICENSED CONTRACTORS. ALL WORK BEING
18 PERFORMED ON A PERMIT ISSUED TO A LICENSED ELECTRICAL CONTRACTOR WHOSE BUSINESS
19 ADDRESS IS OUTSIDE THE STATE OF MARYLAND MUST BE DIRECTLY SUPERVISED BY A
20 BALTIMORE COUNTY LICENSED ELECTRICIAN.
21 PART 128.1.2 REPAIRS TO ALUMINUM CONDUCTORS. ALL REPAIRS, CHANGES, OR
22 MODIFICATIONS INVOLVING THE USE OF ALUMINUM CONDUCTORS SHALL BE MADE
23 SOLELY BY LICENSED ELECTRICAL CONTRACTORS. ALL REPAIRS SHALL REQUIRE
24 PERMITS AND INSPECTIONS PURSUANT TO SECTION 21-7-302 OF THE BALTIMORE
25 COUNTY CODE, 2003, AS AMENDED.
26 PART 128.1.3 SIGNS, LABELS, MARKINGS. ALL REQUIRED SIGNS, LABELS, MARKINGS,
27 ETC. SHALL BE PERMANENTLY AFFIXED AND SHALL BE SUITABLE FOR THE
28 ENVIRONMENT ENCOUNTERED.
29 PART 128.1.4 ACCESSIBILITY OF BUILDING SERVICE DISCONNECT. THE SERVICE
30 DISCONNECT FOR ANY BUILDING OR STRUCTURE SHALL BE ACCESSIBLE, THAT IS,
31 Capable of being reached quickly for operation.
32 PART 128.1.5 SECURING AND SUPPORTING ELECTRICAL FIXTURES, DEVICES AND
33 EQUIPMENT IN SUSPENDED CEILINGS. IN ADDITION TO THE REQUIREMENTS OF THE
34 NATIONAL ELECTRICAL CODE, ALL ELECTRICAL FIXTURES, DEVICES, AND
35 EQUIPMENT
36 MUST BE SECURED INDEPENDENTLY OF THE CEILING GRID STRUCTURE 1 UTILIZING A
2 MINIMUM 12 SWG WIRE. LAY-IN FIXTURES SHALL BE SECURED AT DIAGONAL ENDS
3 USING TWO (2) INDIVIDUAL WIRES FROM FIXTURE TO STRUCTURE. RECESSED TYPE
4 FIXTURES SHALL BE SECURED TO THE GRID TO ACCOMMODATE INSTALLATION OF THE
5 FIXTURE TRIM.
6 PART 128.1.6 CONDUCTOR IDENTIFICATION. CONDUCTORS SHALL BE COLOR
7 IDENTIFIED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:
8 1. ELECTRICAL CONDUCTORS:
9. A. 120V/240V 1ø BLACK, RED, (WHITE GROUNDED LEG)
10. B. 120V/208V 3ø BLACK, RED, BLUE, (WHITE GROUNDED LEG)
11. C. 277V/480V 3ø BROWN, ORANGE, YELLOW, (GRAY GROUNDED LEG)
12. D. 240V 3ø CENTER LEG GROUND BLACK, BLUE, (WHITE GROUNDED LEG)
13. STRIPED RED)
14. E. 480V 3ø CENTER LEG GROUND BROWN, YELLOW, (GRAY GROUNDED LEG)
15. STRIPED ORANGE).

16. 2. RACEWAY PULL IN SYSTEMS. PHASE AND GROUNDED CONDUCTORS:
17. A. CONDUCTORS 8 GAUGE WIRE (AWG) OR SMALLER; THE ENTIRE
18. CONDUCTOR SHALL BE THE REQUIRED COLOR THE ENTIRE LENGTH.
19. B. CONDUCTORS LARGER THAN 8 GAUGE WIRE (AWG); SHALL BE THE
20. REQUIRED COLOR OR RE-IDENTIFIED AT ALL PANELBOARDS, CONTROL
21. CENTERS, TERMINATIONS AND JUNCTION POINTS.
22. 3. CABLE SYSTEMS: CABLE CONDUCTORS SHALL BE PERMITTED TO BE RE23
IDENTIFIED THE REQUIRED COLOR AT ALL PANELBOARDS, CONTROL CENTERS,
24. EQUIPMENT, AND JUNCTION POINTS, EXCEPT THAT ALL 277/480 VOLT FEEDER AND
25. BRANCH CIRCUIT CABLES OF 8 GAUGE WIRE (AWG) OR SMALLER, SHALL BE THE
26. REQUIRED COLOR THE ENTIRE LENGTH OF THE CIRCUIT.
27. 4. STRIPING AND RE-IDENTIFICATION. STRIPING AND RE-IDENTIFICATION WHEN
28. PERMITTED SHALL BE ACCOMPLISHED BY:
29. A. PERMANENT COLORING OR TAPING OF 2 INCH RINGS AT 5 INCH
30. INTERVALS; OR
31. B. A PERMANENT COLORED STRIPE THE LENGTH OF THE WIRE.
32. **PART 128.2 ALUMINUM CONDUCTORS PROHIBITED 8AWG AND SMALLER.**
33. ALUMINUM CONDUCTORS OF SIZES 8 (AWG) AND SMALLER AMERICAN WIRE GAUGE
34. ARE
35. STRICTLY PROHIBITED FROM USE.

**PART 128.3 ALUMINUM CONDUCTORS PROHIBITED IN AIR 1 CONDITIONERS, HEAT
2 PUMPS AND ELECTRICAL HEAT.** ALUMINUM CONDUCTORS OF ANY GAUGE
3 WIRE GAUGE (AWG) ARE STRICTLY PROHIBITED FROM USE IN THE INTERIOR OF AIR
4 CONDITIONERS, HEAT PUMPS OR ELECTRICAL HEAT UNITS OF ANY TYPE IN BALTIMORE
5 COUNTY.
6. **PART 128.4 FOOTING GROUND REQUIRED.** THE GROUNDING ELECTRODE FOR ALL
7 NEW BUILDINGS SHALL BE CONCRETE ENCASED IN ACCORDANCE WITH THE NATIONAL
8 ELECTRICAL CODE, AS AMENDED.
9. **PART 128.5 INSULATED SPLICING DEVICES.** INSULATED SPLICING DEVICES DESIGNED
10 TO BE USED WITHOUT A BOX SHALL BE ACCESSIBLE.
11. **PART 128.6 ELECTRICAL SIGNS.** ELECTRICAL SIGNS MOUNTED ON THE OUTSIDE OF
12 ALL BUILDINGS AND TENANT SPACES SHALL HAVE A DISCONNECT SWITCH TO
13 DISCONNECT 14 THE SIGN CIRCUIT BEFORE ENTERING THE SIGN. THIS SWITCH SHALL BE LOCATED
15 ADJACENT TO AND WITHIN SIGHT OF THE SIGN SERVED.
PART 128.7 MULTI OCCUPANCY ELECTRIC SERVICE. IN MULTI-OCCUPANCY BUILDINGS, SEPARATE SPACES SUPPLIED BY SEPARATE ELECTRIC SERVICE LATERALS OR DROPS MUST BE SEPARATED BY TWO-HOUR RATED FIRE PARTITIONS THAT EXTEND TO THE UNDERSIDE OF THE FLOOR OR ROOF SHEATHING ABOVE OR TO THE BOTTOM OF A FIRE-RATED ASSEMBLY.

19 THE FIRE PARTITION MAY BE OF ONE-HOUR RATED CONSTRUCTION IF ALL THE FOLLOWING CONDITIONS ARE MET:
20 1. ADJACENT SERVICES ARE SUPPLIED BY THE SAME TRANSFORMER;
21 2. THE SPACES ARE SPRINKLERED;
22 3. THE BUILDING IS OWNED BY ONE LEGAL ENTITY;
23 4. IDENTIFYING SIGNS ARE INSTALLED AT EACH SERVICE LOCATION; AND
24 5. ALL PUBLIC SERVICES FEEDS SHALL PASS THROUGH PUBLIC OR COMMON AREA SPACE.

PART 128.8 SUPERVISION OF SOLAR PHOTOVOLTAIC INSTALLATIONS. ALL PHASES OF SOLAR PHOTOVOLTAIC INSTALLATIONS, REPAIRS AND/OR MODIFICATIONS SHALL BE PERFORMED UNDER THE SUPERVISION OF A LICENSED ELECTRICIAN QUALIFIED TO INSTALL SUCH SOLAR PHOTOVOLTAIC INSTALLATIONS.

PART 128.8.1 INSTALLATION OF SOLAR PHOTOVOLTAIC SYSTEMS. NEW PHOTOVOLTAIC SYSTEMS, OR EXTENSIONS OF EXISTING SYSTEMS SHALL ALSO COMPLY WITH SECTION 11.12 PHOTOVOLTAIC SYSTEMS OF NFPA 1, FIRE CODE, 2015 EDITION.

EXCEPTION: DETACHED, NONHABITABLE GROUP U STRUCTURES INCLUDING, BUT NOT LIMITED TO, PARKING SHADE STRUCTURES, CARPORTS, SOLAR TRELLISES AND SIMILAR STRUCTURES SHALL NOT BE SUBJECT TO THE REQUIREMENTS OF THIS PART.

PART 128.9 SOLAR PHOTOVOLTAIC SUPPLY SIDE CONNECTION TO UTILITY. WHERE SOLAR PHOTOVOLTAIC SYSTEMS ARE CONNECTED TO THE UTILITY ON THE SUPPLY SIDE OF THE SERVICE DISCONNECT, THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, ARTICLE 230 SHALL APPLY TO THE INSTALLATION. GROUNDING AND BONDING REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, ARTICLE 250 FOR SERVICES SHALL APPLY. THE UNFUSED PHOTOVOLTAIC SUPPLY SIDE CONDUCTORS SHALL BE KEPT AS SHORT AS PRACTICABLE AND MUST BE IN A RACEWAY.

PART 128.10 INTENTIONALLY LEFT BLANK.

PART 128.11 SOLAR PHOTOVOLTAIC WIRING. NO PART OF THE PHOTOVOLTAIC WIRING OR GROUNDING SYSTEM IS PERMITTED TO OBSTRUCT THE NORMAL FLOW OF WATER OFF THE ROOF. THE FINAL WIRING FROM THE LAST MODULAR OF THE ARRAY TO THE COMBINER OR JUNCTION BOX MUST BE IN A RACEWAY OR TRACK.

PART 128.12 GENERATORS. ALL GENERATORS SHALL COMPLY WITH THIS CODE AS WELL.
AS THE LATEST EDITIONS OF NFPA 37 STANDARD FOR THE INSTALLATION AND USE OF
STATIONARY COMBUSTION ENGINES AND GAS TURBINES, AND NFPA 110 STANDARD FOR
EMERGENCY AND STANDBY POWER SYSTEMS. INSTALLATION AND USE SHALL BE IN
ACCORDANCE WITH THE MANUFACTURER’S INSTRUCTIONS.

PART 128.12.1 PROPERTY LINE SETBACK. ALL GENERATORS SHALL BE SO POSITIONED
AS TO BE A MINIMUM OF 5 FEET FROM A PROPERTY LINE.

PART 128.12.2 GENERATOR EXHAUST. ALL GENERATORS SHALL BE POSITIONED SO THAT
THE EXHAUST POINT OF DISCHARGE IS AS FOLLOWS:
1. AT LEAST 5 FT IN ANY DIRECTION AWAY FROM ANY OPENINGS OR AIR INTAKES.
2. AT LEAST 5 FT AWAY FROM A BUILDING.
3. AT LEAST 5 FT AWAY FROM A PROPERTY LINE.

PART 128.13 PORTABLE GENERATORS. THE FOLLOWING REQUIREMENTS GOVERN THE
USE OF PORTABLE GENERATORS:
1. PORTABLE GENERATORS SHALL NOT BE OPERATED OR REFUELED WITHIN BUILDINGS, PORCHES, BALCONIES, OR ON ROOFS.
2. FUELING FROM A CONTAINER SHALL ONLY BE PERMITTED WHEN THE ENGINE IS SHUT DOWN AND ENGINE SURFACE TEMPERATURE IS BELOW THE AUTOIGNITION TEMPERATURE OF THE FUEL.
3. A PORTABLE GENERATOR SHALL BE ALLOWED TO BE UTILIZED AS A SOURCE OF POWER FOR A MAXIMUM OF 30 DAYS IN ANY CONSECUTIVE 12-MONTH PERIOD.
4. TEMPORARY WIRING METHODS MAY BE ACCEPTABLE ONLY IF APPROVED BASED ON THE CONDITIONS OF USE. EXCEPT AS MAY BE SPECIFICALLY MODIFIED IN THE LATEST EDITION OF NFPA 70, ALL OTHER REQUIREMENTS OF NFPA 70 FOR PERMANENT WIRING SHALL APPLY TO TEMPORARY WIRING INSTALLATIONS.
5. EXTENSION CORDS AND FLEXIBLE CORDS SHALL NOT BE AFFIXED TO STRUCTURES, EXTEND THROUGH WALLS, CEILINGS, OR FLOORS, OR UNDER DOORS OR FLOOR COVERINGS, OR BE SUBJECT TO ENVIRONMENTAL OR PHYSICAL DAMAGE AND, UNLESS SPECIFICALLY PERMITTED IN ARTICLE 400.7 OF NFPA 70, FLEXIBLE CORDS AND CABLES SHALL NOT BE USED AS A SUBSTITUTE FOR THE FIXED WIRING OF A STRUCTURE.
6. DEVIATIONS FROM REQUIREMENTS 1 AND 4 ABOVE DURING PERIODS OF CONSTRUCTION, REMODELING, REPAIR OR DEMOLITION UNDER A VALID BUILDING PERMIT SHALL BE SUBJECT TO THE APPROVAL OF THE CODE OFFICIAL.

PART 128.14 AUTHORITY TO ORDER DISCONNECTION OF ENERGY SOURCES. THE CODE OFFICIAL SHALL HAVE THE AUTHORITY TO ORDER THE DISCONNECTION OF ENERGY SOURCES SERVING A BUILDING, STRUCTURE OR MECHANICAL SYSTEM WHEN IT IS DETERMINED THAT ANY PORTION OF THE SYSTEM, EQUIPMENT, OR INSTALLATION IS HAZARDOUS OR UNSAFE.

PART 128.15 ELECTRICAL RECEPTACLE REQUIRED FOR NEW OR REPLACEMENT
DECK, BALCONY OR PORCH. WHEN THE CONSTRUCTION OF A DECK, BALCONY OR PORCH IN ANY EXISTING RESIDENTIAL OCCUPANCY REQUIRES ELECTRICAL MODIFICATIONS, ALTERATIONS, REPAIRS, OR INSTALLATION, AN OUTDOOR RECEPTACLE SHALL BE INSTALLED TO SERVE THE DECK, BALCONY OR PORCH IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, 2014 EDITION.

PART 128.16 GROUNDED CONDUCTORS AT WALL SWITCH OUTLET LOCATIONS:
DELETE ARTICLE 404.2(C) FROM THE NATIONAL ELECTRICAL CODE, 2014 EDITION, ADD THE FOLLOWING: A GROUNDED BRANCH CIRCUIT CONDUCTOR SHALL BE INSTALLED AT EACH WALL SWITCH OUTLET LOCATION.

PART 128.17 POOL PERIMETER AREA BONDING REQUIREMENTS:
DELETE ARTICLE 680.26(B)(2)(b) FROM THE NATIONAL ELECTRICAL CODE (“NEC”), 2014 EDITION, ADD THE FOLLOWING: WHERE STRUCTURAL REINFORCING STEEL IS NOT AVAILABLE OR IS ENCAPSULATED IN A NONCONDUCTIVE COMPOUND, PERIMETER SURFACE BONDING SHALL BE ACCOMPLISHED BY ONE OR MORE OF THE FOLLOWING METHODS:

1. A COPPER CONDUCTOR GRID CONSTRUCTED OF MINIMUM 8 AWG BARE SOLID COPPER CONDUCTORS BONDED TO EACH OTHER AT ALL POINTS OF CROSSING.
2. THE COPPER CONDUCTOR GRID SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF NEC ARTICLE 680.26(B)(1)(b)(3).

2. WELDED CONCRETE REINFORCING WIRE BONDED TOGETHER TO FORM A SINGLE GRID ENCOMPASSING THE SURFACE AREA DEFINED IN NEC ARTICLE 680.26(B)(2).

3. UN-ENCAPSULATED STRUCTURAL REINFORCING STEEL BONDED TOGETHER BY STEEL TIE WIRES OR THE EQUIVALENT. THE STEEL GRID SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF NEC ARTICLE 680.26(B)(1)(b)(3).

WHERE THE PERIMETER SURFACE DEFINED IN NEC ARTICLE 680.26(B)(2) IS:

1. POURED CONCRETE.
   A. ONE OR MORE OF THE METHODS DESCRIBED IN THIS SECTION SHALL BE ENCASED IN THE POURED CONCRETE.

2. NATURAL GRADE.
   A. A COPPER CONDUCTOR GRID AS DESCRIBED IN THIS SECTION SHALL BE INSTALLED BENEATH THE FINAL GRADE.

3. PAVERS.
   A. ON NATURAL GRADE (WITH OR WITHOUT A SUBSURFACE).

I. A COPPER CONDUCTOR GRID AS DESCRIBED IN THIS SECTION SHALL BE INSTALLED BENEATH THE FINAL GRADE.

B. ON POURED CONCRETE.
   I. WHERE PAVERS ARE INSTALLED ON TOP OF POURED CONCRETE THE FINISHED SURFACE SHALL BE CONSIDERED TO BE A POURED CONCRETE SURFACE. ONE OR MORE OF THE METHODS DESCRIBED IN THIS SECTION SHALL BE ENCASED IN THE POURED CONCRETE.