

ARTICLE 700 ~ EMERGENCY SYSTEMS

I. GENERAL

700-1. SCOPE.

EMERGENCY SYSTEMS ARE INTENDED TO AUTOMATICALLY SUPPLY ILLUMINATION OR POWER, OR BOTH, TO DESIGNATED AREAS AND EQUIPMENT IN THE EVENT OF FAILURE OF THE NORMAL SUPPLY OR IN THE EVENT OF ACCIDENT TO ELEMENTS OF A SYSTEM INTENDED TO SUPPLY, DISTRIBUTE, AND CONTROL POWER AND ILLUMINATION ESSENTIAL FOR SAFETY TO HUMAN LIFE.

700-3. EQUIPMENT APPROVAL.

ALL EQUIPMENT SHALL BE APPROVED FOR USE ON EMERGENCY SYSTEMS.

700-4. TESTS AND MAINTENANCE.

(A) CONDUCT OR WITNESS TEST.

THE AUTHORITY HAVING JURISDICTION SHALL CONDUCT OR WITNESS A TEST ON THE COMPLETE SYSTEM UPON INSTALLATION AND PERIODICALLY AFTERWARD.

(B) TESTED PERIODICALLY.

SYSTEMS SHALL BE TESTED PERIODICALLY ON A SCHEDULE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION TO ASSURE THEIR MAINTENANCE IN PROPER OPERATING CONDITION.

(C) BATTERY SYSTEMS MAINTENANCE.

WHERE BATTERY SYSTEMS OR UNIT EQUIPMENT ARE INVOLVED...THE AUTHORITY HAVING JURISDICTION SHALL REQUIRE PERIODIC MAINTENANCE.

(D) WRITTEN RECORD.

A WRITTEN RECORD SHALL BE KEPT OF SUCH TESTS AND MAINTENANCE.

(E) TESTING UNDER LOAD.

MEANS FOR TESTING ALL EMERGENCY LIGHTING AND POWER SYSTEMS DURING MAXIMUM ANTICIPATED LOAD CONDITIONS SHALL BE PROVIDED.

700-5. CAPACITY.

(A) CAPACITY AND RATING.

AN EMERGENCY SYSTEM SHALL HAVE ADEQUATE CAPACITY AND RATING FOR ALL LOADS TO BE OPERATED SIMULTANEOUSLY. THE EMERGENCY SYSTEM SHALL BE SUITABLE FOR THE MAXIMUM AVAILABLE FAULT CURRENT AT ITS TERMINALS.

II. CIRCUIT WIRING

700-9. WIRING, EMERGENCY SYSTEM.

(B) WIRING.

WIRING OF TWO OR MORE EMERGENCY CIRCUITS SUPPLIED FROM THE SAME SOURCE SHALL BE PERMITTED IN THE SAME RACEWAY, CABLE BOX OR CABINET. WIRING FROM EMERGENCY SOURCE OR EMERGENCY SOURCE DISTRIBUTION OVERCURRENT PROTECTION TO EMERGENCY LOADS SHALL BE KEPT ENTIRELY INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT, UNLESS OTHERWISE PERMITTED IN (1) THROUGH (4):

- (1) WIRING FROM THE NORMAL POWER SOURCE LOCATED IN TRANSFER EQUIPMENT ENCLOSURES
- (2) WIRING SUPPLIED FROM TWO SOURCES IN EXIT OR EMERGENCY LUMINARIES (LIGHTING FIXTURES)
- (3) WIRING FROM TWO SOURCES IN A COMMON JUNCTION BOX, ATTACHED TO EXIT OR EMERGENCY LUMINARIES (LIGHTING FIXTURES)
- (4) WIRING WITHIN A COMMON JUNCTION BOX ATTACHED TO UNIT EQUIPMENT, CONTAINING ONLY THE BRANCH CIRCUIT SUPPLYING THE UNIT EQUIPMENT AND THE EMERGENCY CIRCUIT SUPPLIED BY THE UNIT EQUIPMENT

III. SOURCES OF POWER

700-12. GENERAL REQUIREMENTS.

CURRENT SUPPLY SHALL BE SUCH THAT, IN THE EVENT OF FAILURE OF THE NORMAL SUPPLY TO, OR WITHIN, THE BUILDING...EMERGENCY LIGHTING, EMERGENCY POWER, OR BOTH WILL BE AVAILABLE WITHIN THE TIME REQUIRED FOR THE APPLICATION, BUT NOT TO EXCEED 10 SECONDS.

(A) STORAGE BATTERY.

STORAGE BATTERIES USED AS SOURCE OF POWER FOR EMERGENCY SYSTEMS SHALL BE OF SUITABLE RATING AND CAPACITY TO SUPPLY AND MAINTAIN THE TOTAL LOAD FOR A PERIOD OF 1-1/2 HOURS MINIMUM, WITHOUT THE VOLTAGE APPLIED TO THE LOAD FALLING BELOW 87-1/2 PERCENT OF NORMAL.

BATTERIES...SHALL BE DESIGNED AND CONSTRUCTED TO MEET THE REQUIREMENTS OF EMERGENCY SERVICE AND SHALL BE COMPATIBLE WITH THE CHARGER FOR THAT PARTICULAR INSTALLATION.

FOR A SEALED BATTERY, THE CONTAINER SHALL NOT BE REQUIRED TO BE TRANSPARENT. HOWEVER, FOR THE LEAD ACID BATTERY THAT REQUIRES WATER ADDITIONS, TRANSPARENT OR TRANSLUCENT JARS SHALL BE FURNISHED. AUTOMOTIVE-TYPE BATTERIES SHALL NOT BE USED.

AN AUTOMATIC BATTERY CHARGING MEANS SHALL BE PROVIDED.

(E) UNIT EQUIPMENT.

INDIVIDUAL UNIT EQUIPMENT FOR EMERGENCY ILLUMINATION SHALL CONSIST OF (1) A RECHARGEABLE BATTERY; (2) A BATTERY CHARGING MEANS; (3) PROVISIONS FOR ONE OR MORE LAMPS MOUNTED ON THE EQUIPMENT, OR SHALL BE PERMITTED TO HAVE TERMINALS FOR REMOTE LAMPS, OR BOTH; AND (4) A RELAYING DEVICE ARRANGED TO ENERGIZE THE LAMPS AUTOMATICALLY UPON FAILURE OF THE SUPPLY TO THE UNIT EQUIPMENT. THE BATTERIES SHALL BE OF SUITABLE RATING AND CAPACITY TO SUPPLY AND MAINTAIN AT NOT LESS THAN 87-1/2 PERCENT OF THE NOMINAL BATTERY VOLTAGE FOR THE TOTAL LAMP LOAD ASSOCIATED WITH THE UNIT FOR A PERIOD OF AT LEAST 1-1/2 HOURS...

UNIT EQUIPMENT SHALL BE PERMANENTLY MOUNTED IN PLACE (I.E., NOT PORTABLE) AND SHALL HAVE ALL WIRING TO EACH UNIT INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF ANY OF THE WIRING METHODS IN CHAPTER 3. FLEXIBLE CORD- AND PLUG-CONNECTION SHALL BE PERMITTED, PROVIDED THAT THE CORD DOES NOT EXCEED 3 FEET...IN LENGTH. THE BRANCH CIRCUIT FEEDING THE UNIT EQUIPMENT SHALL BE THE SAME BRANCH CIRCUIT AS THAT SERVING THE NORMAL LIGHTING IN THE AREA AND CONNECTED AHEAD OF ANY LOCAL SWITCHES...

IV. EMERGENCY SYSTEM CIRCUITS FOR LIGHTING & POWER

700-15. LOADS ON EMERGENCY BRANCH CIRCUITS.

NO APPLIANCES AND NO LAMPS, OTHER THAN THOSE SPECIFIED AS REQUIRED FOR EMERGENCY USE, SHALL BE SUPPLIED BY EMERGENCY LIGHTING CIRCUITS.

700-16. EMERGENCY ILLUMINATION.

EMERGENCY ILLUMINATION SHALL INCLUDE ALL REQUIRED MEANS OF EGRESS LIGHTING, ILLUMINATED EXIT SIGNS, AND ALL OTHER LIGHTS SPECIFIED AS NECESSARY TO PROVIDE REQUIRED ILLUMINATION.

EMERGENCY LIGHTING SYSTEMS SHALL BE SO DESIGNED AND INSTALLED THAT THE FAILURE OF ANY INDIVIDUAL LIGHTING ELEMENT, SUCH AS THE BURNING OUT OF A LIGHT BULB, CANNOT LEAVE IN TOTAL DARKNESS ANY SPACE THAT REQUIRES EMERGENCY ILLUMINATION.

WHERE HIGH-INTENSITY DISCHARGE LIGHTING SUCH AS HIGH- AND LOW-PRESSURE SODIUM, MERCURY VAPOR, AND METAL HALIDE IS USED AS THE SOLE SOURCE OF NORMAL ILLUMINATION, THE EMERGENCY LIGHTING SYSTEM SHALL BE REQUIRED TO OPERATE UNTIL NORMAL ILLUMINATION HAS BEEN RESTORED.

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