

CHAPTER E 530

MOTION PICTURE STUDIOS AND SIMILAR LOCATIONS

E 530.01	Scope	E 530.51	Lamps in cellulose nitrate film storage vaults
E 530.11	Permanent wiring	E 530.52	Motors and other electrical equipment in film storage vaults
E 530.12	Portable wiring	E 530.61	Substations
E 530.13	Stage lighting and effects control	E 530.62	Low-voltage switchboards
E 530.14	Plugging boxes	E 530.63	Overcurrent protection of DC generators
E 530.15	Enclosing and guarding live parts	E 530.64	Working space and guarding
E 530.16	Portable lamps	E 530.65	Portable substations
E 530.17	Portable arc lamps	E 530.66	Grounding at substations
E 530.18	Overcurrent protection; short time rating		
E 530.19	Grounding		
E 530.31	Dressing rooms		
E 530.41	Lamps at tables		

A. GENERAL

**E 530.01 Scope.** (1) The requirements of this chapter shall apply to television studios (except as covered in section E 520.01), motion picture studios, exchange, factory, laboratory, stage, or a portion of the building in which motion picture films more than 7/8 inch in width are manufactured, exposed, developed, printed, cut, edited, rewound, repaired or stored.

(2) For the purpose of this chapter, a motion picture studio is one in which photographic film is used to record action. A television studio shall mean one which employs the use of electronic cameras only.

*Note:* For recommendations for protection against cellulose nitrate film hazards refer to NFPA Standard for the Storage and Handling of Cellulose Nitrate Motion Picture Film (No. 40).

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

B. STAGE OR SET

**E 530.11 Permanent wiring.** The permanent wiring shall be in approved metal raceways, type ALS cable or type MI cable.

(1) **EXCEPTION.** Communication circuits, and sound recording and reproducing equipment may be wired as permitted by the chapters covering those installations. (See Wis. Adm. Code chapters E 640 and E 800.)

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 530.12 Portable wiring.** The wiring for stage set lighting and stage effects, and other wiring which is not fixed as to location, shall be done with approved portable cables and approved flexible cords. This requirement shall not apply to portable lamps or other electrical equipment used as properties in a motion picture set, on a studio stage or lot, or on location.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 530.13 Stage lighting and effects control.** Switches used for studio stage set lighting and effects (on the stages and lots and on location) shall be of the externally-operable type. When contactors are used as the disconnecting means for fuses, an individual externally-operable type switch (such as a tumbler switch) for the control of each contactor, shall be located at a distance of not more than 6 feet from the contactor, in addition to remote-control switches.

(1) **EXCEPTION:** A single externally-operable switch may be used to simultaneously disconnect all the contactors on any one location board, where located at a distance of not more than 6 feet from the location board.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 530.14 Plugging boxes.** Each receptacle of plugging boxes shall have an ampacity of not less than 30 amperes.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 530.15 Enclosing and guarding live parts.** (1) Live parts shall be enclosed or guarded to prevent accidental contact by persons and objects.

(2) All switches shall be of the externally-operable type.

(3) Rheostats shall be placed in approved cases or cabinets which enclose all live parts, having only the operating handles exposed.

(4) Current-carrying parts of "bull-switches", "location boards", "spiders", and plugging boxes shall be so enclosed, guarded, or located that persons cannot accidentally come into contact with them or bring conducting materials into contact with them.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 530.16 Portable lamps.** Portable lamps and work lights shall be equipped with approved portable cords, approved composition or metal-sheathed porcelain sockets and substantial guards.

(1) **EXCEPTION.** The requirements of this section shall not apply to portable lamps used as properties in a motion picture set or television stage set, on a studio stage or lot, or on location.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 530.17 Portable arc lamps.** Portable arc lamps shall be substantially constructed. The arc shall be provided with an enclosure designed to retain sparks and carbons and to prevent persons or materials from coming into contact with the arc or bare live parts. The enclosures shall be ventilated. All switches shall be of the externally-operable type.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 530.18 Overcurrent protection; short time rating.\*** (1) **GENERAL.** Automatic overcurrent protective devices (circuit-breakers or fuses) for feeders, and subfeeders for moving-picture studio stage set lighting and the stage cables for such stage set lighting, shall be rated or set to operate at not more than 400% of the values given in table E 310.12 and table E 400.09 (2).

\* Special consideration is given to motion picture studios because filming periods are of only a few minutes duration and are rarely longer than 10 minutes.

(2) **FEEDERS.** The feeders from the substations to the stages shall be protected by means of overcurrent devices having suitable ampacity (generally located in the substation). The overcurrent devices may be double-pole, or two single-pole devices may be used. There need be no pole or overcurrent coil in the neutral conductor. The overcurrent device setting for each feeder shall not exceed 400% of the ampacity of the feeder, as given in table E 310.12 for the kind of insulation used.

(3) **LOCATION BOARDS.** Overcurrent protection (fuses or circuit-breakers) shall be provided at the location boards. The fuses in the location boards shall be not larger in rating than 400% of the ampacity of the cables between the location boards and the plugging boxes.

(4) **PLUGGING BOXES.** Where plugging boxes are not provided with overcurrent protective devices, each cable or cord smaller than No. 8 supplied through a plugging box shall be attached to the plugging box by means of a plug containing 2 cartridge fuses or a circuit-breaker. The rating of the fuses or the setting of the circuit-breaker shall be not more than 400% of the safe ampacity of the cables or cords as given in tables E 310.12, E 310.13 and E 400.09 (2) for the kind of insulation used.

(5) **LIGHTING.** Work-lights, stand-lamps, and fixtures shall be connected to plugging boxes by means of plugs containing 2 cartridge fuses not larger than 20 amperes, or they may be connected to special outlets on circuits protected by fuses or circuit-breaker settings of not more than 20 amperes. Plug fuses shall not be used unless they are on the load side of the fuses or circuit-breakers on the location boards.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 530.19 Grounding.** Conduit, armored cable or metal raceways, and all noncurrent-carrying metal parts of appliances, devices and equipment shall be grounded as prescribed in chapter E 250. This shall not apply to pendent and portable lamps, nor to stage lighting and stage sound equipment, nor to other portable or semiportable special stage equipment, operating at not more than 150 volts to ground.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

### C. DRESSING ROOMS

**E 530.31 Dressing rooms.** Fixed wiring in dressing rooms shall be installed in accordance with wiring methods covered in chapter E 300. Wiring for portable dressing rooms shall be of an approved type.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

### D. VIEWING, CUTTING AND PATCHING TABLES

**E 530.41 Lamps at tables.** Only approved composition or metal-sheathed porcelain keyless lampholders, equipped with suitable means to guard lamps from physical damage and from film and film scrap, shall be used at patching, viewing and cutting tables.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

### E. FILM STORAGE VAULTS

**E 530.51 Lamps in cellulose nitrate film storage vaults.** Lamps in cellulose nitrate film storage vaults shall be rigid fixtures of the glass enclosed and gasketed type. Lamps shall be controlled by a switch having a pole in each ungrounded conductor. This switch shall be located outside of the vault and provided with a pilot light to indicate whether the switch is on or off. This switch shall disconnect from all sources of supply all ungrounded conductors terminating in any outlet in the vault.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 530.52 Motors and other electrical equipment in film storage vaults.** No electric motors, heaters, portable lights, or other portable electric equipment shall be located in the film storage vaults.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

### F. SUBSTATIONS

**E 530.61 Substations.** Wiring and equipment above 600 volts shall conform to Wis. Adm. Code chapter E 710.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 530.62 Low-voltage switchboards.** On 600 volts or less switchboards shall conform to chapter E 384.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 530.63 Overcurrent protection of DC generators.** Three-wire DC generators shall have protection consisting of overcurrent devices having current ratings or settings in accordance with the generator rating. The overcurrent protective devices may be single-pole or 2-pole and need not have a pole or overcurrent coil in the neutral lead (whether it is grounded or ungrounded).

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 530.64 Working space and guarding.** Working space and guarding in permanent fixed substations shall conform to Wis. Adm. Code sections E 195.16 and E 195.17. For guarding of live parts on motors and generators, see sections E 430.011 and E 430.014. Switchboards for voltage of not more than 250 volts DC between conductors when located in substations or switchboard rooms accessible to qualified persons only need not be dead-front.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 530.65 Portable substations.** Wiring and equipment in portable substations shall conform to the rules applying to installations in permanent fixed substations, but, due to the limited space available, the working spaces may be reduced, provided that the equipment shall be so arranged that the operator may do his work safely, and so that other persons in the vicinity cannot accidentally come into contact with current-carrying parts or bring conducting objects into contact with them while they are energized.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 530.66 Grounding at substations.** Noncurrent-carrying metal parts shall be grounded except the frames of DC circuit-breakers installed on switchboards.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.