

the wiring system. The size of conductor, as determined by the foregoing requirements of sections 27-3175 through 27-3179 of this article, shall be selected from table number one and table number three of section 27-3083 of article five of this subchapter and have a current carrying capacity equal to or higher than the amounts required by the total load supplied.

b. Feeders shall also be of such size that the voltage drop to the final distribution point shall not exceed two and one-half per cent computed on the basis of the total load supplied.

c. The voltage drop in the neutral conductor of a balanced three-phase four-wire system need not be considered in computing for voltage drop. For any system where the neutral carries the same current as the phase conductors, such as a three-wire "wye" tap taken from a three-phase four-wire system, the neutral shall be computed for voltage drop.

d. If, at any time after being installed, it shall be found that the conductors are overloaded, they shall be increased to comply with the requirements of tables number one and three in section 27-3083 of article five of this subchapter. When the insulation on electrical conductors becomes deteriorated, the conductors shall be replaced.

§ [B30-157.7] 27-3181 Neutral feeder load. — The neutral feeder load shall be the maximum unbalance of the load. The maximum unbalance load shall be the computed load obtained by the above sections of this article, except that the load thus obtained shall be multiplied by one hundred forty per cent for five-wire two-phase systems. For three-wire direct current or single-phase alternating current, four-wire three-phase and five-wire two-phase, for residential buildings only, a further demand-factor of seventy per cent may be applied to that portion of the unbalanced load in excess of two hundred amperes.

§ [B30-157.8] 27-3182 Common neutral feeder. — a. A common neutral feeder may be employed for two or three sets of three-wire feeders or two sets of four-wire or five-wire feeders. When in metal enclosures, all conductors of feeder circuits employing a common neutral feeder shall be contained within the same enclosure.

b. In existing direct current installations and only where the source of supply is to be changed to alternating-current, a common neutral feeder conductor may be used also as a common return conductor for both direct and alternating-current systems, provided the neutral feeder is of sufficient carrying capacity to accommodate the extra load that may be imposed upon it as a common return conductor and further, that it complies with the requirements contained in section 27-3180 of this article.

§ [B30-157.9] 27-3183 Wiring existing buildings for increased feeder capacity. — When installing feeders or sub-feeders in existing buildings for apartments of one thousand two hundred square feet or less, the following rules may apply in lieu of the requirements contained in sections 27-3175 to 27-3180:

- a. Feeder or sub-feeder to each apartment for general lighting and small appliance load shall be not less than two No. 10 or three No. 12 A.W.G. conductors.
- b. In computing the size of service equipment, feeders and sub-feeders, a minimum of twenty amperes at one hundred twenty volts shall be used for each apartment.
- c. When appliance branch circuits are installed, they shall comply with the requirements contained in section 27-3169 of this article. For each such circuit installed, an additional fifteen amperes shall be added.

§ 27-3184 Wires. — a. Wiring other than bare collector wires shall be rubber covered, slow burning (type S.B.), or asbestos covered (type A).

b. Rubber covered wire shall not be smaller than No. 12, except on pilot circuits of controllers, where No. 14 may be used.

c. Slow burning (type S.B.) wire shall be used where exposed to external heat in excess of 167° F. (75° C.) and asbestos covered wire (type A) where the temperature exceeds 194° F. (90° C.) between resistances and contact plates, unless exposed to moisture, when rubber covered wires shall be used. When rubber covered wires so used are bunched, outer covering of each conductor shall be flame-retarding or shall be taped with a flameproof covering.

§ 27-3185 Installation of wires. — a. Wiring other than bare collector [sic] wires and necessary short lengths of open wires at resistors and collectors shall be installed in rigid conduit, or electrical metallic tubing, except that necessary selections* of armored cable or flexible metallic conduit may be employed for connection to motors, electric brake or other features which must be in movable relation to the conduit or wiring system and provided further that in dry places where space is limited, each wire may be separately encased in flexible tubing securely fastened in place.

b. Collector wires shall not be used as feeders for any equipment other than the crane or cranes which they are primarily designed to serve.

c. Where wires of cranes and hoist circuits leave conduit or other fixed raceways, they shall be individually bushed, except that more than four wires may be bunched, taped with a flameproof covering and bushed with an insulating bushing. The fixed raceway shall terminate as close to the wire terminals as convenience in handling will permit.

d. The primary and secondary circuits for alternating current motors and direct current motor circuits shall be run as complete individual circuits for each motor.

*As directed but "arrows" probably intended.