

**CHAPTER 27. LIGHTING****GENERAL PROVISIONS**

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**Authority**

The provisions of this Chapter 27 issued under act of June 2, 1913 (P. L. 396, No. 267) (71 P. S. §§ 1441—1451); and section 15 of the act of May 18, 1937 (P. L. 654, No. 174) (43 P. S. § 25-15), unless otherwise noted.

**Source**

The provisions of this Chapter 27 adopted May 10, 1923, amended through August 1, 1968, unless otherwise noted.

**Cross References**

This chapter cited in 34 Pa. Code § 13.73 (relating to lighting); 34 Pa. Code § 29.127 (relating to location); 34 Pa. Code § 39.22 (relating to yard and internal housekeeping); 34 Pa. Code § 41.32 (relating to construction); 34 Pa. Code § 45.11 (relating to mechanical power transmission and machine layout); 34 Pa. Code § 47.64 (relating to general requirements); 34 Pa. Code § 47.164 (relating to lighting and heating); and 34 Pa. Code § 47.193 (relating to workrooms).

**GENERAL PROVISIONS****§ 27.1. Definitions.**

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

*Foot-candle*—The lighting effect produced upon an object by a standard candle at a distance of 1 foot.

*Minimize*—To reduce to the smallest practical proportion.

*Nonflammable material*—Material which will not readily burn or ignite.

**§ 27.2. Scope.**

This chapter sets forth rules to safeguard the lives, limbs and health of workers in industries in which industrial lighting is necessary, and places the responsibility of complying with the provisions of this chapter upon both employer and employe.

**§ 27.3. Penalty.**

Any person who violates any of the provisions of this chapter or any regulations of the Department or who interferes with the Department or its authorized representative in the enforcement of the provisions or regulations shall be penalized under section 15 of act of May 18, 1937 (P. L. 654, No. 174) (43 P. S. § 25-15).

**§ 27.11. General.**

(a) *Places requiring light.* Working or traversed spaces in buildings or grounds and all working places in establishments or on their premises during the time of use, shall be supplied with light in accordance with this chapter.

(b) *Measurements.* The location at which the principal illumination is required is expressed in this chapter as "at the work." Measurement of the illumination shall be made at this location in the usual plane in which the work is done; that is, on the horizontal, vertical or intermediate plane, as the case may be.

(c) *Method of measurement.* For the purpose of light measurements, a standardized photometer shall be used and the measurements shall be made at such locations specified in Tables I and II of this chapter.

(d) *Maintenance.* Equipment for both natural and artificial lighting shall be maintained in a clean and safe condition at all times.

**§ 27.12. Glare.**

(a) *Diffusing accessories.* Lamps producing glare in the ordinary field of vision from any position at which work is performed, or such lamps located in traversed spaces in buildings, shall be provided with shades, reflectors, diffusing glassware or other accessories, installed and arranged in such manner as to minimize glare. The devices shall be made of substantial construction and made of nonflammable material.

(b) *Exceptions.* The requirements of subsection (a) do not apply to lamps used for a temporary decorative purpose if an unusual or harmful glare is not created.

(c) *Natural light.* Natural light, when it is used for illumination, shall be so distributed as to avoid glare.

**§ 27.13. Distribution of light.**

(a) Lights and lighting fixtures shall be installed with regard to height, spacing, reflectors or other accessories to secure a good distribution of light on the work and to avoid objectionable shadows and excessively sharper contrasts.

(b) Lighting standards are as follows:

(1) The Illuminating Engineering Society Lighting Handbook (current edition) shall be used as a standard for lighting within this Commonwealth, I.E.S. recommended minimum lighting levels shall be used with a 20% reduction allowed, provided quality lighting is retained to assure proper visibility on the task. Typical examples of lighting levels are indicated in § 27.15 (a) (relating to intensity of illumination).

(2) Visual Comfort Probability (V.C.P.) reports shall be submitted for all typical types of areas in question. The report shall reflect the design foot-candle level and the actual area dimensions while maintaining a minimum V.C.P. of 70 for those particular parameters.

(3) Any Light Loss Factor (L.L.F.) used for design calculations that is greater than .70 shall be documented by luminaire and lamp manufacturer's test data and submitted for consideration in the approving authority.

(4) Veiling reflections which are reflections from the very task itself that cause a loss of contrast between the task and its immediate surroundings shall be limited to a minimum. This approach to proper lighting design known as equivalent-sphere-illumination (E.S.I.) shall be considered to obtain as high an E.S.I. foot-candle level as possible.

(5) As special requirements, new construction, modernization or major renovations of hospitals, nursing homes and related facilities need not comply with the standards listed in this subsection but shall comply with those standards required by the United States Department of Health, Education and Welfare (DHEW) and approved by the Pennsylvania Department of Health or the Pennsylvania Department of Public Welfare, or both, as required.

(c) Visual Comfort Probability (V.C.P.) reports shall be submitted for all typical types of areas in question. The report shall reflect the design footcandle level and the actual area dimensions while maintaining a minimum V.C.P. of 70 for those particular parameters.

(d) Maintenance factors used for design calculations shall be as documented by the fixture manufacturer through an independent testing laboratory.

(e) Veiling reflections which are reflections from the very task itself that cause a loss of contrast between the task and its immediate surroundings shall be limited to a minimum. This approach to proper lighting design known as equivalent-sphere-illumination (E.S.I.) shall be considered to obtain as high an E.S.I. footcandle level as possible.

(f) New construction, modernization or major renovations of hospitals, nursing homes and related facilities need not comply with the standards listed in this

section but shall comply with those standards required by the United States Department of Health, Education and Welfare (DHEW) and approved by the Pennsylvania Department of Health or the Pennsylvania Department of Public Welfare, or both, as required.

**Source**

The provisions of this § 27.13 amended January 27, 1978, 8 Pa.B. 252. Immediately preceding text appears at serial page (8447).

**§ 27.14. Emergency lighting.**

Emergency lighting systems shall be required in establishments as required by Section 1 of the Special Regulations for Emergency Lighting Systems used when loss of power may cause illumination less than the minimum required by the applicable provisions of this chapter.

**§ 27.15. Intensity of illumination.**

The following table shall be used in determining the illumination levels for various office tasks and locations, the column at right indicating acceptable range of footcandles required:

*TABLE I*

<i>Description</i>	<i>Acceptable Range of Footcandles on the Task</i>
1. General Offices	
General Office Work	56-70
Accounting, Bookkeeping	120-150
Drafting & Designing	120-150
Private Offices	56-70
2. Conference Rooms	1/2-70*
3. Corridors, Elevators, Escalators, Stairways	16-20
4. Lobbies, Reception Areas	10-30
5. Washrooms	24-30

\*More than one lighting system and/or dimming area desirable

Not less than 1/5 the level of nearby offices

May be more when planned for transition with daylight or other areas

**Source**

The provisions of this § 27.15 amended January 27, 1978, 8 Pa.B. 252. Immediately preceding text appears at serial pages (8448) to (8458).

**§ 27.16. Dust and gas.**

Gas, vapor and dust-proof lighting fixtures shall be provided at all places where explosive gas, vapor or dust accumulates.

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(247414) No. 288 Nov. 98

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