

# **NATIONAL LIGHTING CODE (NLC)-2010**

## **INTRODUCTION**

The NATIONAL LIGHTING CODE (NLC) published by the Bureau of Indian Standards has been formulated for the purpose of setting out in a convenient form the requirements for responsible social, commercial and engineering conduct for the designers, manufacturers and suppliers of lighting. Lighting technology place a significant role in achieving basic social safety and environmental objectives.

The intent of this code is to encourage good lighting practices and systems which would minimize light pollution, glare, light trespass and conserve energy while maintaining safety, security, utility and productivity.

The lighting industry is highly fragmented and has relatively low technical barriers to entry. Despite its fundamental importance to many basic safety operation it is subjected to comparatively low levels of regulation. Consequently end users and consumers do not always have access to accurate and reliable information on what represents a safe, reliable and efficient lighting system. This code aims to build up a trust between the industry and its customers through integration of commerce and technology.

Economic development over the last few years has shown a major boost in the demand of lighting equipment. With an estimated 17 percent of the energy consumption in India due to lighting, there are many numerous opportunities to save energy and thus resources. Moreover lighting has, until the recent past, been taken for granted as a matter of aesthetics without putting any serious thought on energy conservation, safety, reliability etc. Putting in place the best available technology, proper design, planning and selection of equipment for the lighting in industrial, commercial, public, utility areas and residential applications with special emphasis on energy conservation, there are ample scope in overall improvement of the lighting system to cater for the need of the individual, society and the country as a whole.

The National Lighting Code is a single document in which, like, a network, the information contained in various Indian Standards is compiled into a pattern of continuity and cogency with the interdependent requirements of Sections carefully analyzed and fitted into. This makes the whole document a cogent continuous volume.

The code contains good regulatory practices which can be immediately adopted or enacted for use by various departments and public bodies. It lays down a set of minimum provisions necessary to protect the interest of the public with regard to lighting levels and quantity, safety parameters etc. For the choice of lighting products and method of lighting design for the lighting professional, details guidelines have been provided in the code, still leaving enough scope for the integrity of the user, designer, architects and consultants.

This National Lighting Code is applicable to the lighting systems in large varieties of interior and exterior installations including special areas like hospitals, utilities, sports complex, metro railway etc. under the control of qualified persons.

The code, however, does not specify the additional requirements to be considered while designing lightening system for certain areas such as marine, railway rolling stock, theater, television and photography etc.

The code also does not cover the requirements and methods of test applicable to light sources and luminaries for which separate Indian Standards exists. However, the code covered the measurement aspects of luminaries in a photometric laboratory.

## **ACTUAL COVERAGE**

The NATIONAL LIGHTING CODE (NLC) covers the following:

- a) Guidance on illuminating engineering practices to be followed by various types of occupancies;
- b) Guidance on good engineering practices to be followed the design, selection, installation and maintenance of lighting system for indoor and outdoor areas;
- c) Matters related to the science of illumination such as physics of life, electric light sources, luminaries and photometry;
- d) Coordination aspects to be considered while designing the lighting system such as day lighting; and
- e) Aspects relating to energy management and energy conservation in lighting installation including guidelines for design and good practices to be adopted for effective and efficient use of light sources.

Numerical Values in this Code are in the metric (SI) systems.

The NLC as written in the present stage of knowledge on the various aspects of lighting systems. In this NLC many of the problems were answered fully and some partially. Therefore, a continuous programme, will go on by which additional knowledge that is gained through technological evolutions, user's views over a period of time pinpointing areas of classification, and coverage and results of research in the field would be incorporated into the code from time to time to make it a living document. It is therefore proposed to bring out changes to the code periodically. In the meantime, all or some parts of the code may be adopted with or without changes by delegated legislative authorities in their regulations, administrative orders or similar documents.

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## **CONTENT**

This NLC is divided into 13 parts some of which are having sections making a total 29 Parts/sections as given below:

### **NATIONAL LIGHTING CODE**

- PART 1      LIGHTING VOCABULARY**
- PART 2      PHYSICS OF LIGHT**
  - Section 1      General Principles**
  - Section 2      Vision**
  - Section 3      Colour**
  
- PART 3      ELECTRIC LIGHT AND THEIR ACCESSORIES**
  - Section 1      Electric Light Sources**
  - Section 2      Control-Gears for Light Source**
  
- PART 4      LUMINAIRES**
  - Section 1      Classification and Selection of Luminaires**
  - Section 2      Photometry**
  
- PART 5      INTERIOR ILLUMINATION**
  - Section 1      Industrial Lighting**
  - Section 2      Office Lighting**
  - Section 3      Lighting for Educational Facilities**
  - Section 4      Hospital Lighting**
  - Section 5      Light for other Public Buildings**
  
- PART 6      EXTERIOR ILLUMINATION**
  - Section 1      General Features**
  - Section 2      Industrial Area Lighting**
  - Section 3      Security Lighting**
  - Section 4      Decorative Lighting**  
**(Monument Park and Garden)**
  - Section 5      Lighting for Utility Areas (Dock and**  
**Harbour, Railway and Airport Apron)**
  - Section 6      Sports Lighting**
  - Section 7      Lighting for Mass Rapid Transit**  
**Transport System (MRTS)**

<b>PART 7</b>	<b>LIGHTING FOR HAZARDOUS AREAS</b>
<b>PART 8</b>	<b>ROAD LIGHTING</b>
<b>PART 9</b>	<b>ENERGY -EFFECTIVE LIGHTING SYSTEMS</b>
<b>PART 10</b>	<b>INSTALLATIONS ASPECTS FOR LIGHTING</b>
	<b>Section 1     Mechanical</b>
	<b>Section 2     Electrical</b>
	<b>Section 3     Coordination with Related Disciplines</b>
<b>PART 11</b>	<b>DAY LIGHTING FOR BUILDINGS</b>
<b>PART 12</b>	<b>EMERGENCY LIGHTING</b>
<b>PART 13</b>	<b>LIGHTING MAINTENANCE</b>