

LIGHTING

At its simplest, different levels of lighting are required for different types of work – close, accurate work such as soldering will require higher light levels than walking down a corridor. However, when considering lighting, a number of different factors need to be considered such as colour, contrast, glare and so on.

‘Lighting at work’, HSG38, explains how lighting contributes to the health and safety of people at work. It deals with assessing and managing the health and safety risks attributable to lighting in the workplace, good practice and the minimum recommended illumination levels that meet health and safety requirements.

Why is good lighting at work important?

Lighting at work is very important to the health and safety of everyone using the workplace. The quicker and easier it is to see a hazard, the more easily it is avoided. The types of hazard present at work therefore determine the lighting requirements for safe operation.

Poor lighting can not only affect the health of people at work, causing symptoms like eyestrain, migraine and headaches, but it is also linked to Sick Building Syndrome in new and refurbished buildings. Symptoms of this include headaches, lethargy, irritability and poor concentration.

Who is responsible for lighting at work and what are their legal responsibilities?

Employers have a duty to ensure that lighting is safe and does not pose a health risk to employees and others who may use their premises. The Management of Health and Safety at Work Regulations 1999 require employers to have arrangements in place to cover health and safety. This includes lighting which needs to be suitable and adequate to meet the requirements of the Workplace (Health, Safety and Welfare) Regulations 1992.

Assessing lighting in the workplace

It is important that lighting in the workplace:

- allows people to notice hazards and assess risks;
- is suitable for the environment and the type of work;
- provides sufficient light (illuminance on the task);
- allows people to see properly and discriminate between colours, to promote safety;
- does not cause glare, flicker or stroboscopic effects;

- avoids the effects of reflections;
- does not result in excessive differences in illuminance within an area or between adjacent areas;
- is suitable to meet the special needs of individuals;
- does not pose a health and safety risk itself;
- is suitably positioned so that it may be properly maintained or replaced, and disposed of to ensure safety;
- includes, when necessary, suitable and safe emergency lighting.

What does BS4163:2014 Health and safety for design and technology in educational and similar establishments – Code of practice say about lighting?

Section 6.1 Lighting

Sufficient lighting in work areas should be provided. Escape lighting should be provided in high risk areas and in escape routes from high risk areas.

The following levels of lighting should be provided at least in accordance with CIBSE LG5 [N4] Table 5.1 and Table 5.3.

- a) High intensity of natural light (500 lx) should be provided in food preparation areas. Fluorescent lighting with a minimum colour rendering index (Ra) of 80 should be provided to avoid distortion of food colours.
- b) At least 500 lx should be provided for normal bench and machine work (taking into consideration the stroboscopic effect of fluorescent lighting units).
- c) At least 500 lx should be provided in fabric work areas.
- d) 1 000 lx should be provided for fine bench and machine work.

NOTE 1 Use suitable task lights to provide lighting at 1 000 lx.

Subdued lighting should be provided in forging, brazing and welding areas to enable colour changes in heated metals to be easily observed. These areas should not be close to windows, especially windows that face south.

Sudden changes in intensity of illumination within work areas or at entrances and exits should be avoided. If possible, the recommended levels of illumination should be provided by natural light, supplemented by artificial lighting if required. Glare should be avoided.

Lighting units installed in storage areas should be mechanically protected.

Computer visual display units should be positioned away from glare and reflection from lights and windows and spaced at least 1 m apart. Window blinds should be provided where required. If it is probable that the computer room will be put into prolonged use, provision of anti-glare category 2 light fittings should be considered.

NOTE 2 The Health and Safety (Display Screen Equipment) Regulations 1992 (as amended) provide guidance (see HSE document L26).

Supplementary lighting should be provided for machine tools and equipment if the main room lighting is not sufficient. Supplementary lighting should conform to BS EN 60204-1. Lamps should not operate at more than 50 V a.c. If the switch for the supplementary light is not easily accessible to the machine tool operator, another switch should be provided adjacent to the light source. Lighting should be provided with a deep shade to prevent glare from polished surfaces.