

**CD / 58**

# Road lighting —

**Part 8: Code of practice for lighting that may affect the safe use of aerodromes, railways, harbours and navigable inland waterways**

ICS 93.080.40

## Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee CPL/34/8, Road lighting, upon which the following bodies were represented:

Council for the Protection of Rural England  
County Surveyors' Society  
Department of the Environment, Transport and the Regions — Highways Agency  
Electricity Association  
Institution of Lighting Engineers  
Institution of Mechanical Engineers  
Lighting Industry Federation Ltd.  
Scottish Office  
Co-opted  
British Lighting Association for the Preparation of Standards (Britlamps)  
British Precast Concrete Federation Ltd.  
Chartered Institution of Building Services Engineers  
Civil Aviation Authority

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### Amendments issued since publication

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## Foreword

This part of BS 5489 has been prepared by Technical Committee CPL/34/8. It supersedes BS 5489-8:1992 which is withdrawn.

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### Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 4, an inside back cover and a back cover.

## 1 Scope

This part of BS 5489 gives recommendations for road lighting within defined areas around aerodromes, railways, harbours and navigable waterways, supplementing the general recommendations of other parts of BS 5489.

NOTE The recommendations of this part of BS 5489 may also be applied to lighting other than road lighting.

## 2 Normative references

The following normative documents contain provisions that, through reference in this text, constitute provisions of this part of this British Standard. The latest edition of the publication referred to applies.

BS 5489-1:1992, *Road lighting — Part 1: Guide to the general principles*.

BS 6100-2, (all sections) *Glossary of building and civil engineering terms — Part 2: Civil engineering*.

BS EN 60598, *Luminaires*.

## 3 Terms and definitions

For the purposes of this part of BS 5489, the terms and definitions given in BS 6100-2 and BS 5489-1 apply.

## 4 General principles

### 4.1 Impact

When the impact of a new road lighting installation is assessed, consideration should be given to the modes of transport that may be affected. These modes of transport may not necessarily be adjacent to the installation and could be some distance away. An area is defined for aerodromes (see clause 5).

### 4.2 Consultation

It is essential that consultation is made with all appropriate authorities regarding any special provisions that may be necessary for a new road lighting installation. Provisions should be mutually acceptable, and fully documented for incorporation at the design stage.

### 4.3 Design considerations

It is essential to eliminate any lighting that interferes with clear vision and ability to recognize signals of transport operators.

Interference can be caused by:

- disability glare from luminaires or installations;
- variations in contrast and reflected light;
- lighting of the same colour as signal lights.

Luminaires should be carefully selected and sited to prevent confusion of visual information. If screening of a light source is necessary, this should be achieved by choice of luminaire. If external baffles/screens are required, they should be properly designed for the luminaire.

### 4.4 Luminaires

Luminaires should conform to BS EN 60598.

### 4.5 Maintenance

Maintenance inspections of road lighting should include checks of luminaire aiming and screening. Care should be taken that any luminaire aiming or alignment marks are redefined.

## 5 Lighting in the vicinity of aerodromes

NOTE The area within which a road lighting scheme may affect safe use of an aerodrome is 4.8 km (3 miles) beyond the aerodrome boundary.

### 5.1 General

Road lighting that could be dangerous to air navigation is restricted under several Acts of Parliament on civil aviation and military flying regulations. If a lighting scheme is planned within the area defined in the note to clause 5, the following authorities should be consulted:

- the local authority;
- the senior air traffic controller (military aerodromes);
- Aerodrome Standards Department (civil aerodromes);
- Civil Aviation Authority Safety Regulation Group (Gatwick Airport).

### 5.2 Zones

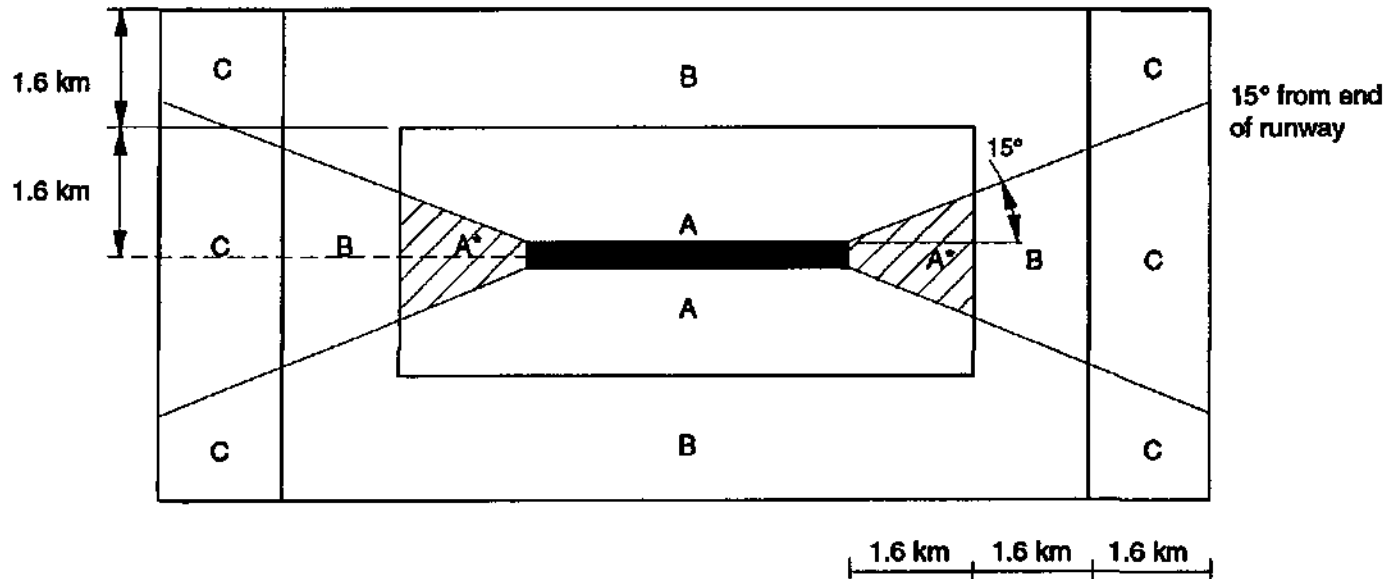
The area defined in clause 5 contains zones (see Figure 1) in which different recommendations apply.

If the direction of an instrument runway visual range (IRVR) equipped runway is between 15° and 165° (195° and 345°), a zone D should apply, to the north of the runway (see Figure 2).

### 5.3 Design considerations

Maximum luminous intensities within the zones in Figure 1 should conform to Table 1.

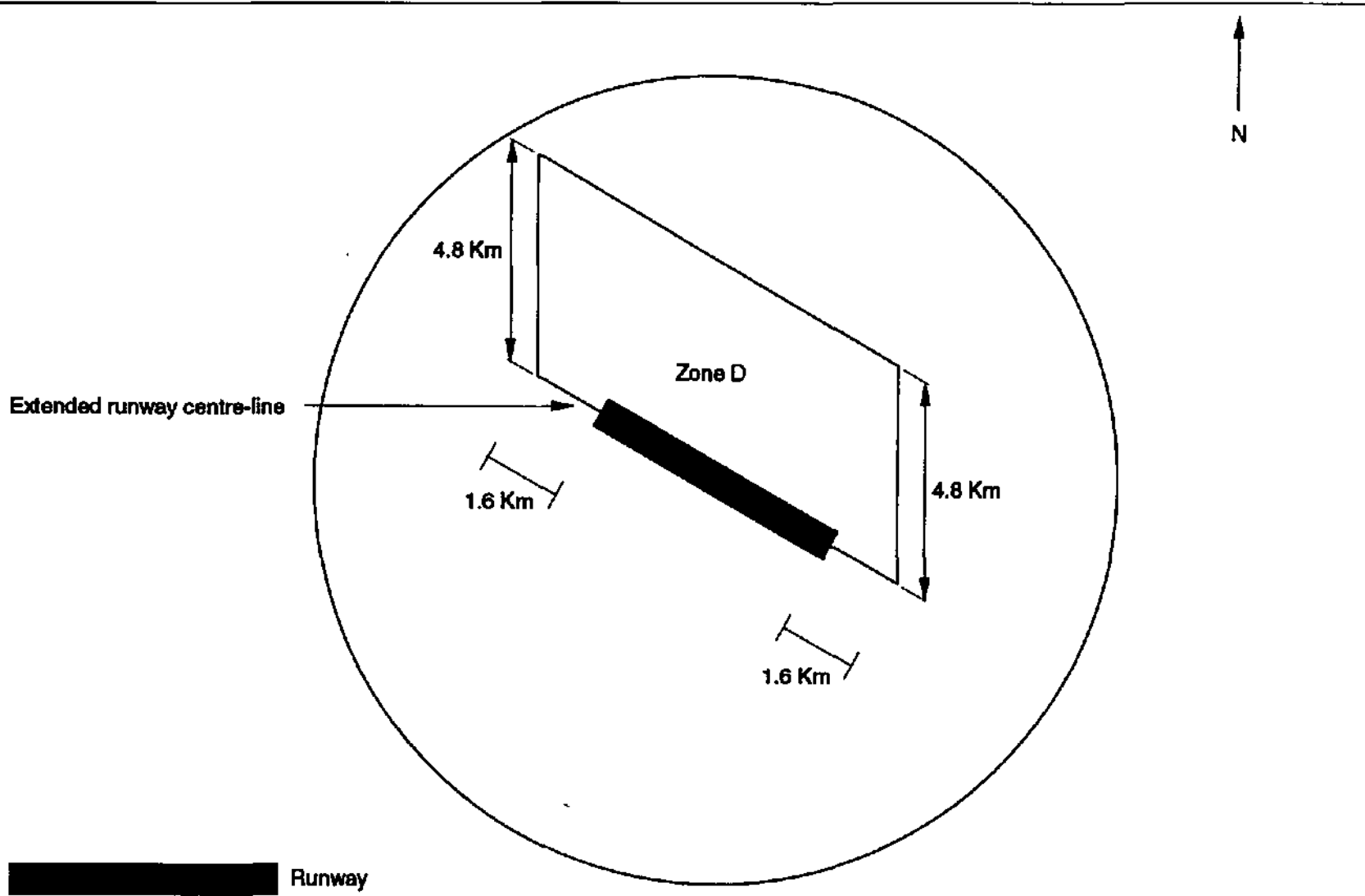
NOTE The aviation authority may specify requirements for the layout pattern, mounting height and column construction material of road lighting, and the colour and intensity distribution of light emitted above the horizontal.



NOTE 1 The mounting height of lighting in area A\* may be restricted.

NOTE 2 If there is more than one runway, zones A, B and C apply to each. Overlapping zones assume the category of the inner zone; i.e. zone A overrides zone B, which overrides zone C.

Figure 1 — Zones within the area around a runway



NOTE 1 Zone D is to the north of the runway. The northern boundary of zone D is 4.8 km from the runway centre-line, parallel to the centre-line. The eastern and western boundaries of zone D extend northwards from the runway centre-line produced 1.6 km from either end of the runway.

NOTE 2 If there is more than one runway with IRVR, zone D should apply to the northernmost runway.

Figure 2 — Zone D

Table 1 — Maximum luminous intensity for area around a runway

Angle from downward vertical	Maximum luminous intensity based on initial luminous flux of lamp		
	Zone A cd	Zone B cd	Zone C cd
85	500	500	900
90	0	300	500
95	—	0	100
≥ 135	—	—	0

## 6 Lighting in the vicinity of railways

NOTE The area within which a road lighting scheme may affect safe use of a railway is not defined because of the diversity of fixing locations for signals and curvature of the line. Signals should receive individual consideration for lighting interference.

### 6.1 General

If a road lighting scheme is planned within an area that may affect safe use of a railway, the railway authority Railtrack should be consulted, and *Railway Safety Principles and Guidance* [1] referred to.

### 6.2 Design considerations

It is essential that any lighting scheme does not affect track visibility for railway operatives.

Colours in a lighting scheme should not conflict or cause confusion with colours used for signal lights.

NOTE Information on colours and colour classes is given in BS 1376.

Careful consideration should be given to lighting column height and mounting height, particularly near to overhead cables.

## 7 Lighting in the vicinity of coastal waters

If a road lighting scheme is planned that could interfere with observation of navigation marks, buoys and ships' navigation lights, or may affect night vision of seamen, the local Marine Office of the Marine Safety Agency and the General Lighthouse Authority should be consulted.

## 8 Lighting in the vicinity of harbours

### 8.1 General

If a road lighting scheme is planned that could affect safe use of a harbour, the Harbour Master should be consulted.

### 8.2 Design considerations

Lighting schemes near to and inside a harbour boundary should not interfere with observation of navigation marks, buoys or ships' navigation lights. Lighting should not affect night vision of seamen in the vicinity of a harbour. Particular consideration should be given to installation and maintenance of high mast lighting for dock roads, terminals and other facilities.

## 9 Lighting in the vicinity of navigable inland waterways

### 9.1 General

If a road lighting scheme is planned adjacent to navigable inland waterways, the following authorities should be consulted:

- British Waterways;
- Environment Agency;
- the local navigation authority.

### 9.2 Design considerations

Lighting schemes adjacent to navigable inland waterways should not interfere with observation of navigation lights, marks, buoys or signs. Lighting should not affect night vision of crews on unlit waterways. It is essential that the distance, angle and intensity of lighting adjacent to inland waterways takes into account safe navigation of vessels.

## Bibliography

### Standards publications

BS 1376, *Specification for colours of light signals*.

### Other documents

[1] *Railway Safety Principles and Guidance*, HSE Books, Customer Services Department, P.O. Box 1999, Sudbury, Suffolk SO10 6FS.

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