

## E24. Lighting

### E24.1. Background

Artificial lighting enables work, recreation and entertainment activities to occur beyond normal daylight hours. It also provides additional safety and security to sites and associated activities. However, unless used with care, it can adversely affect adjoining properties through light spill and glare. If screening or aiming of light is poorly controlled this can result in light pollution causing adverse changes to the view of the night sky.

The provisions for artificial light provide for adequate lighting to support activities and enable safety and security for participants, while minimising potential adverse effects.

### E24.2. Objectives [rcp/dp]

- (1) Artificial lighting enables outdoor activities and the security and safety of people and property.
- (2) The adverse effects of outdoor lighting on the environment and safety of road users are limited.

### E24.3. Policies [rcp/dp]

- (1) Provide for appropriate levels of artificial lighting to enable the safe and efficient undertaking of outdoor activities, including night time working, recreation and entertainment.
- (2) Control the intensity, location and direction of artificial lighting to avoid significant glare and light spill onto adjacent sites, maintain safety for road users and minimise the loss of night sky viewing.
- (3) Use area or activity specific rules where the particular functional or operational needs of the area or activity make such rules appropriate.

### E24.4. Activity table

Table E24.4.1 Activity table specifies the activity status of land use and development activities pursuant to section 9(3) of the Resource Management Act 1991 and the activity status of coastal use, occupation and activity pursuant to sections 12(1); 12(2) and 12(3) of the Resource Management Act 1991.

**Table E24.4.1 Activity table**

Activity		Activity status
(A1)	Activities that comply with all the relevant permitted activity standards	P
(A2)	Activities that do not comply with a relevant permitted activity standard	RD

### **E24.5. Notification**

- (1) Any application for resource consent for an activity listed in Table E24.4.1 Activity table above will be subject to the normal tests for notification under the relevant sections of the Resource Management Act 1991.
- (2) When deciding who is an affected person in relation to any activity for the purposes of section 95E of the Resource Management Act 1991 the Council will give specific consideration to those persons listed in Rule C1.13(4).

### **E24.6. Standards**

All activities listed as permitted in Table E24.4.1 Activity table must comply with the following standards.

#### **E24.6.1. General standards**

- (1) Lighting limits must be measured and assessed in accordance with Standard AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting, except for building façade lighting that complies with Standard E24.6.1(10). In the event of any conflict between Standard AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting and the lighting standards set out below, the lighting standards set out below shall prevail.
- (2) Any calculation for the purposes of these standards must be based on a maintenance factor of 1.0 (i.e. no depreciation).
- (3) For the purposes of Standard E24.6.1(2) and Standard E24.6.1(9) the lighting category classification for each zone in Table E24.6.1.1 Lighting category classifications will apply. Where a development is located on a site which adjoins or is directly across a road from a different lighting category, the most sensitive classification of the two categories will apply.
- (4) Where measurements of any illuminance above background levels from the use of artificial lighting cannot be made because the artificial lighting cannot be turned off, measurements may be made in areas of a similar nature that are not affected by the artificial lighting. The result of these measures may be used for determining the effect of the artificial lighting.
- (5) For the purposes of these standards, the curfew time is 10pm - 7am and the pre-curfew time is 7am – 10pm.

Table E24.6.1.1 Lighting category classifications

Zone	Lighting category			
	Lighting category 1 (Intrinsically dark)	Lighting category 2 (Low brightness)	Lighting category 3 (Medium brightness)	Lighting category 4 (High brightness)
<b>Residential</b>				
Residential – Large Lot Zone		X		
Residential – Rural and Coastal Settlement Zone		X		
Residential – Single House Zone			X	
Residential – Mixed Housing Suburban Zone			X	
Residential – Mixed Housing Urban Zone			X	
Residential – Terrace Housing and Apartment Buildings Zone			X	
<b>Open space</b>				
Open Space – Conservation Zone	X			
Open Space – Informal Recreation Zone			X	
Open Space – Sport and Active Recreation Zone			X	
Open Space – Civic Spaces Zone				X
Open Space – Community Zone			X	
<b>Business</b>				
Business – City Centre Zone				X
Business – Metropolitan Centre Zone				X
Business – Town Centre Zone				X
Business – Local Centre Zone				X
Business – Neighbourhood Centre Zone			X	
Business – Mixed Use Zone			X	
Business – General Business Zone				X
Business – Business Park Zone				X
Business – Light Industry Zone				X
Business – Heavy Industry Zone				X
<b>Coastal</b>				
Coastal – General Coastal Marine Zone		X		
Coastal – Marina Zone		X		

Zone	Lighting category			
	Lighting category 1 (Intrinsically dark)	Lighting category 2 (Low brightness)	Lighting category 3 (Medium brightness)	Lighting category 4 (High brightness)
Coastal – Mooring Zone		X		
Coastal – Minor Port Zone			X	
Coastal – Ferry Terminal Zone			X	
Coastal – Defence Zone			X	
Coastal – Coastal Transition Zone			X	
<b>Rural</b>				
Rural – Rural Conservation Zone	X			
Rural – Countryside Living Zone		X		
Rural – Rural Coastal Zone		X		
Rural – Mixed Rural Zone			X	
Rural – Rural Production Zone			X	
Rural – Waitākere Foothills Zone		X		
Rural – Waitākere Ranges Zone	X			
Future Urban Zone		X		
<b>Special purpose</b>				
Strategic Transport Corridor Zone				X
Special Purpose – Airports and Airfields Zone				X
Special Purpose – Cemetery Zone		X		
Special Purpose – Healthcare Facility and Hospital Zone				X
Special Purpose – Major Recreation Facility Zone			X	
Special Purpose – Maori Purpose Zone			X	
Special Purpose – Quarry Zone			X	
Special Purpose – School Zone			X	
Special Purpose – Tertiary Education Zone				X

(6) The added illuminance from the use of any artificial lighting on any site must not exceed either:

- (a) the levels in Table E24.6.1.2 Horizontal and vertical illuminance at a boundary, when measured at the boundary of any adjacent site containing a lawfully established dwelling. The illuminance limit will apply horizontally and vertically at any point on the boundary and at any height; or

**Table E24.6.1.2 Horizontal and vertical illuminance at a boundary**

Time	Illuminance limit
Pre-curfew	100 lux above the background level
Curfew	10 lux above the background level

- (b) the vertical illuminance limits in Table E24.6.1.3 Vertical illuminance at a window, when measured or calculated at the windows of habitable rooms of a lawfully established dwelling.

**Table E24.6.1.3 Vertical illuminance at a window**

Time	Vertical illuminance limit for each lighting category			
	Lighting category 1	Lighting category 2	Lighting category 3	Lighting category 4
Pre-curfew	2 lux	10 lux	10 lux	25 lux
Curfew	0 lux (except public road lighting)	1 lux	2 lux	4 lux

- (7) Outdoor artificial lighting operating on any site between sunset and sunrise must not exceed the threshold increment limit stated in Table E24.6.1.4 Threshold increment, on any public road, calculated within each traffic lane in the direction of travel.

**Table E24.6.1.4 Threshold increment**

Light technical parameter	Threshold increment limit for each lighting category			
	Lighting category 1	Lighting category 2	Lighting category 3	Lighting category 4
Threshold increment (TI)	15 per cent (based on adaption luminance of 0.1 cd/m <sup>2</sup> )	15 per cent (based on adaption luminance of 1 cd/m <sup>2</sup> )	15 per cent (based on adaption luminance of 2 cd/m <sup>2</sup> )	15 per cent (based on adaption luminance of 10 cd/m <sup>2</sup> )

- (8) Where measurements of any illuminance above background levels from the use of artificial lighting cannot be made because the artificial lighting cannot be turned off, measurements may be made in areas of a similar nature that are not affected by the artificial lighting. The result of these measures may be used for determining the effect of the artificial lighting.
- (9) The exterior lighting on any property adjacent to a road or adjacent to land on which there is a dwelling must be selected, located, aimed, adjusted and/or

screened to ensure that glare resulting from the lighting does not exceed the pre-curfew or curfew limits outlined in Table E24.6.1.5 Pre-curfew luminous intensity limits or Table E24.6.1.6 Curfew luminous intensity limits.

**Table E24.6.1.5 Pre-curfew luminous intensity limits**

Intentionally illuminated area		Pre-curfew luminous intensity limit for each lighting category			
Size of area (based on the controlling dimension)	Controlling dimension (refer to Note 1)	Lighting category 1	Lighting category 2	Lighting category 3	Lighting category 4
Large	>75m	2,500 cd	7,500 cd	10,000 cd	25,000 cd
Medium	≥25m ≤75m	2,500 cd	7,500 cd	10,000 cd	25,000 cd
Small	<25m	2,500 cd	2,500 cd	7,500 cd	25,000 cd

Note 1

The controlling dimension is the maximum dimension from any light source to the furthest point of the intentionally illuminated area in the direction of maximum intensity.

**Table E24.6.6 Curfew luminous intensity limits**

Curfew luminous intensity limit for each lighting category			
Lighting category 1	Lighting category 2	Lighting category 3	Lighting category 4
0 cd	500 cd	1,000 cd	2,500 cd

(10) The average surface luminance measured in candelas per square metre ( $\text{cd/m}^2$ ) for an intentionally artificially lit building façade shall not exceed any one of the following:

- (a)  $0 \text{ cd/m}^2$  in lighting category 1;
- (b)  $5 \text{ cd/m}^2$  in lighting category 2;
- (c)  $10 \text{ cd/m}^2$  in lighting category 3; or
- (d)  $25 \text{ cd/m}^2$  in lighting category 4.

(11) The limits may be determined by calculation or measurement in accordance with CIE 150:2003 Guide on the limitation of the effects of obtrusive light from outdoor lighting installations – International Commission on Illumination ISBN 3 901 906 19 3.

**E24.7. Assessment – controlled activities**

There are no controlled activities in this section.

## **E24.8. Assessment – restricted discretionary activities**

### **E24.8.1. Matters of discretion**

The Council will restrict its discretion to all of the following matters when assessing a restricted discretionary activity resource consent application:

- (1) the effects of lighting on traffic safety; and
- (2) the effects of artificial lighting and glare on the amenity values and the character of the neighbourhood.

### **E24.8.2. Assessment criteria**

The Council will consider the relevant assessment criteria for restricted discretionary activities from the list below:

- (1) for traffic safety:
  - (a) the extent to which any artificial lighting will adversely affect traffic safety;
- (2) for the effects of artificial lighting and glare on amenity values:
  - (a) whether the number, placement, design, height, colour, orientation and screening of light fittings and light support structures minimises light spill, glare, and loss of night time viewing;
  - (b) the extent to which the amount of light falling beyond the site during the hours of darkness is minimised to control effects on indoor amenity values and sleep quality; and
  - (c) whether the artificial lighting is necessary, suitably designed and adequately protects the amenity values of the surrounding environment.

## **E24.9. Special information requirements**

There are no special information requirements in this section.