



STREET LIGHTING SPECIFICATION

Wirral Borough Council

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STREET LIGHTING SPECIFICATION Wirral Borough Council

General

The Developer shall provide a lighting design for street lighting in accordance with BS5489-1:2020 as part of the estate development. Proposals for street lighting must be submitted for the approval of the Council's Street Lighting Department prior to works commencing.

The proposals shall include the positions of lighting columns, type of column, type of LED lantern, type of secondary isolator, supply cables, cable routes and Electricity Company service details for DNO or IDNO connections.

A copy of each drawing containing the proposals should be submitted for approval together with a copy of the lighting calculations and cable design calculation where appropriate.

The approved drawings will be used on subsequent adoption inspections therefore, any changes made to road or lighting layout shall be resubmitted for approval.

PLEASE NOTE: Approved drawings are valid for a maximum of 12 months from approval date. If lighting installation work has not commenced within 12 months approval will be withdrawn and amended drawings will need to be re-submitted for approval which may be subject to an administration charge.

Adoption of Lighting

Every lighting unit and underground cable, on completion and before being energised, shall be inspected and tested to verify that the requirements of the current version of BS7671 (IET Wiring Regulations) have been met.

The inspection and the test results shall be submitted to the Council's Street Lighting Department at the time of requesting an adoption inspection of the lighting system.

Upon completion of the installation 'as constructed' drawings shall be forwarded to the Council's Street Lighting Department showing column positions, cable routes, sizes and positions, and full-service details for DNO / IDNO providers.

It is the Developers responsibility to obtain a MPAN number when requesting underground services for the lighting installation from the electricity company. The Developer will then be charged for the energy consumed by the street lighting

installation from the date of connection to the date the “Final Certificate of completion” is issued.

Following the issue of the “Final Certificate” the Developer shall inform the electricity company that they are no longer responsible for the energy consumed by the street lighting.

Formal adoption of the lighting takes place after a minimum 12-month maintenance period and only when the roads and footpaths are adopted.

Design Standards

Street lighting schemes shall comply with the current edition of BS EN 13201-2 and the guidance and recommendations contained within BS 5489-1:2020.

Design Maintenance Factor

The design maintenance factor shall be compliant with BS5489 / CSS recommendations based on a 6-year bulk clean and electrical test for all LED units.

Standard Equipment

The base specification for all new lighting schemes should adhere to the following specifications; however other equipment may be submitted for consideration by the Council’s Street Lighting Department.

	Lighting Class	Column
Residential Roads, Access Roads and Footpaths	Appropriate S (P) lighting class	6m or 7m Aluminium tubular tapered – as per specification supplied separately.
Industrial Estate, Local Distributor and Access Roads	Appropriate lighting class	8m – 10m tubular steel (Details below ^{**})
Urban Traffic Routes, Main Distributor Roads	Appropriate ME / C lighting class.	8m, 10m, 12m tubular steel (Details below ^{**})
External Council Owned Car Parking Areas	Appropriate lighting class	Car Park. Specific 5m – 12m tubular steel (Details below ^{**})

- **Aluminium tubular tapered, for all residential roads, access roads and footpaths.** Specification detailed separately.
- ****** CU Phosco or similar approved columns manufactured in accordance with BS EN 40-3-2:2013, hot dip galvanised tubular steel to BS EN 1461:2009 unpainted with parallel shaft and surface mounted door, mounting height within the range of 6m, 8m, 10m and 12m as appropriate. Root protection is to be a minimum of G1 or two pack high build epoxy coating both inside and out of the planted section and finish 250mm above ground level. A minimum of 250 microns dry film finish shall be attained.
- The same specification above for the mid hinged raise and lower lighting columns for use only when vehicular access is restricted.

Lantern	LED as approved by the Council for S38, and appropriate lantern for S278 (details below)
Lamp	LED
Photo Electric Control Unit	ZODION SS6 or SS5DR set at 10 lux for residential and 20 lux for traffic routes and shall have a switching ratio of 1:1 (or similar approved use only)
Central Management System (CMS)	N/A
Termination Unit	Tofco Ltd WBC Models Double Pole Switched Fuse isolation unit (or similar approved only)

- LED of appropriate wattage and appropriate luminaire complete with 7-pin NEMA socket from the list below:
- ASD Highway Diamond series, or similar approved only.

Non-standard Equipment and Conservation areas

Please contact the Council's Street Lighting Department for further details for the use of non-standard equipment or lighting within Conservation areas.

Environmental / Ecological sensitive areas

Any area considered or suspected to have ecological sensitivity, in particular bats, shall have the lighting designed as per the recommendations contained within BS5489-

1:2020 and ILP Guidance note 8. Any Environmental, Ecological studies and/or impact assessments required or requested by the Council shall be arranged at the developer's expense. Please contact the Councils Street Lighting Department for more information or assistance if unsure.

Underground Services

Electricity supplies to each column must be provided by a Distribution Network Operator main supply, unless detailed otherwise by the Council.

With regard to Section 278 works, the Developer is responsible for all orders regarding electricity supply connections. The equipment shall be installed prior to any orders being sent. It is also the Developer's responsibility to order the connections on a Section 38 development.

Looped services will only be permitted by the Council under special conditions generally feeding signs on roundabouts, Splitter Islands or central reservations, and must be installed to the Council's specifications.

The Council shall be made aware of any IDNO sites at the time of submitting design drawings for approval. Full details of the IDNO shall be provided prior to adoption including any service level agreements and service charges that may impact the Council.

Cable Ducts

All approved private networks shall be in orange UPVC duct, inscribed "STREET LIGHTING" in white lettering 9mm high along its length at intervals of not more than 1 metre. 50mm internal diameter at a minimum depth of 450mm in footway and 100mm internal diameter duct minimum depth of 750mm in carriageway.

A brightly coloured identification tape shall be installed in accordance with SHW Clause 1421 paragraph 14, bearing the legend: - "CAUTION STREET LIGHTING CABLE BELOW"

Access Chambers

Access chambers shall be used for cross carriageway ducting. The chambers shall be a preformed high density polyethylene stacking system with a minimum of 3 no. stacks

and size suitable for the number of cables and the chamber lid shall conform to BSEN 124, minimum 12.5 tonne wheel loading.

Bollards

Traffic bollards installed during Section 38 / 278 works shall be solar powered at all locations where an illuminated bollard is required; elsewhere retro reflective non illuminated self-righting bollards are required. Current specification is TMP EVO-S / TMP EVO-N (black body). All bollards must comply with BS EN 12767 and be of a type authorised for use by the DfT. Retro reflective Diamond Grade 3 material should cover the front and side surfaces of the bollard. The rear surface should be black non-reflective material with a minimum of two reflective marker strips.

Please contact the Council's Street Lighting Department for current bollard specifications if unsure.

Cables

Underground cables shall be 3 core XLPE/PVC/SWA/PVC cable with copper conductors and a minimum size of 4mm².

All illuminated traffic signs shall be supplied using XLPE/PVC/SWA/PVC, 3 core cable with copper conductors and a minimum size of 4mm².

Internal wiring between the terminal block in the lantern and the components in the base of the column shall be PVC insulated flexible cable with minimum 300/500-volt grade and have a copper conductor size of not less than 1.5 mm². All cores shall be correctly colour coded and conform to BS EN 50525-2-11.

Cables for continuous earth bonding shall be green and yellow PVC insulated single core copper cable of minimum cross section 6 mm², minimum 300/500-volt grade conforming to BS EN 50525-2-3.

Underground (ducted) cables shall have a black coloured sheath with high conductivity copper conductors. The cables shall be 600/1000-volt grade with steel wire armouring to BS5467 and all conductors shall be of equal cross-sectional area.

Cable Joints

No cable joints are permitted unless previously approved in writing by the Council.

Earthing

The whole of the installation shall be earthed in accordance with the current requirements of BS7671, IET Wiring Regulations, and with the recommendations contained in BS7430, Earthing Standards.

Earthing shall be carried out in PVC insulated copper cable green and yellow in colour. All metallic parts of the ancillary equipment, column, lantern and gear shall be bonded together to form a continuous earth path to the earth stud of the column.

Fuses

All fuses to be HRC to BS88 Part 2 operating on 240 volts 50Hz supply. All equipment shall be fused as per the manufacturer's recommendations.

Control Gear

All lamp control gear shall be electronic and housed within the lantern.

Column Siting

All street lighting and associated cable works, and ancillary equipment shall only be installed within the area of the estate that it is proposed will be adopted as highway. In exceptional circumstances, and with the prior approval of the Council's Street Lighting Department, the developer may be permitted to site apparatus outside the highway if appropriate easements are granted to the Council at the Developer's expense.

Columns should be sited at the rear of the footway or verge wherever possible. If this is not possible then recommended clearance as detailed within BS5489-1:2020 shall be attained. Columns in service strips should be sited at least 1.0 metre behind kerb face.

If for any reason it is not possible for a column to be sited in the position indicated, a revised position must be agreed between the Developer and the Council before the column is installed.

Column doors shall be positioned so that they face away from oncoming traffic unless obstructed, for example by a boundary wall, in which case the door shall be angled outwards to clear any obstruction.

Column Numbering

The column numbering system must not be taken from the lighting design layout drawing. Column numbering shall be undertaken after completion of the installation by the Council's Street Lighting Department.

Corrosion Protection

Unless manufactured from aluminium or stainless steel, all columns and bracket arms shall, before leaving the factory, be hot dip galvanised to BS EN 1461:2009. Root protection for all columns is to be a minimum of G1 or two pack high build epoxy (as per ILP TR26) coating both inside and out of the planted section and finish 250mm above ground level. A minimum of 250 microns dry film finish shall be attained.

Paint System

The Council shall approve all painting of columns.

Central Management System (CMS)

Currently not required

Inspection

Before an inspection can be carried out, the Developer must supply the Council with Inspection and Completion Certificates in accordance with the current edition of BS7671 IET Wiring Regulations. Certificates must be dated within four months of receipt by the Council's Street Lighting Department.

Obtrusive Lighting

Obtrusive light is lighting that falls outside the area to be illuminated, which could cause discomfort, annoyance, distraction, or reduces the ability to see.

All lighting designs shall take this into consideration.

As Built Information

As Built drawings shall be produced upon completion of works and issued to the Council's Street Lighting Department.

Compliance with Standards and Regulations

The work to be carried out and the equipment provided shall be in strict accordance with the latest edition of the following publications, together with the latest amendments there to, unless stated otherwise in the specification.

Published by	
British Standards Specification and Codes of Practice	British Standards Institution
Regulations for Electrical Installations	The Institute of Electrical Engineers
Technical Report No.7 Section 6 Specification for Maintenance	Institution of Lighting Professionals
Engineering Recommendation G39	Electrical Association
Scottish Power & Wirral Borough Council Agreements and Working Practices	Scottish Power & Wirral Borough Council
Electricity at Work Regulations 1989	Health and Safety Executive
Specification for Highway Works	The Highways Agency
ILP Guidance Notes for the reduction of Light Pollution	Institution of Lighting Professionals