

General specification for Electrical installations in residential dwellings in the Dublin City Council area

DUBLIN CITY COUNCIL
ELECTRICAL SERVICES - HOUSING

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1. Scope

This specification document details the requirements of Dublin City Council Electrical Services, for all electrical wiring schemes in residential dwellings. The purpose of this document must establish standards for design, materials and workmanship to achieve a quality development that would enable it to be taken in charge by Dublin City Council's Electrical Services. This document recommends minimum standards and technical specifications for all new electrical wiring schemes, which must be adhered to by developers or their contractors.

2. Standards

All electrical installations must comply with the following standards / publications:

- *National Rules for Electrical Installations IS10101:2020,* including amendments, published by the *NSAI.*
- *IS EN 61439-3 Low voltage Switchgear and control gear assemblies – Part 3: Distribution boards intended to be operated by ordinary persons (DBO).*
- *Code of Practice for Customer Interface,* current edition published by *ESB Networks (ESBN)*
- *ELECTRICAL SERVICES GUIDEBOOK – Housing Schemes*, current edition published by *ESB Networks*.
- *The Building Regulations* published by the *Department of Environment, Heritage and Local Government (DOEHLG).*
- *Code of Practice for Avoiding Danger from Underground Services* published by the Health and Safety Authority (H.S.A.).
- *Criteria documents* and any other requirements specified by the *Commission for Regulation of Utilities (CRU).*
- *IS 3217:2013+A1:2017 for Emergency Lighting, published by the NSAI*
- *IS 3218:2013+A1:2019 - Fire detection and Alarm systems for buildings – System design, installation, commissioning, servicing and maintenance, published by the NSAI*
- All solar PV products must comply with *EN 61215:2005* "Crystalline silicon terrestrial photovoltaic (PV) modules – Design qualification and type approval" *or EN 61646:1977* "Thin film terrestrial photovoltaic (PV) modules – Design qualification and type approval". The panels must also be tested to the *EN 61730* Photovoltaic (PV) module safety qualification and carry *EN 62716* Ammonia Resistance Certificate and *IEC 68-2-52* (Salt mist resistance). The installation must satisfy Conditions Governing Connection and Operation of Micro-generation as published by the ESB Document No: DTIS-230206- BRL.

Note 1: Where reference is made to any standard, the latest version and/or amendment must apply.
Note 2: Where reference is made in this specification to a particular make, source, process, trademark, type or patent, this is not to be regarded as a de facto requirement. In all such cases it must be understood that such indications must be treated for reference purposes only, to which the words "or equivalent" will always be appended.

3. Electrical Sub-Contractor

The Sub-Contractor appointed to carry out the electrical services installation must:

- Be in possession of the appropriate employers and public liability insurances.
- Be a Registered Electrical Contractor (REC) as defined in *Criteria Document Cer/08/071* published by *CER (CRU).*
- Be a current member of an approved Electrical Safety Supervisory Body (ESSB) appointed by *CRU* i.e. the *Register of Electrical Contractors of Ireland* (*RECI)* (Safe Electric).
- Be qualified to issue Electrical Completion Certificates and Test Record Sheets for each installation in accordance with *IS 10101: 2020* and in accordance with any requirements specified by *CRU*.
- Be qualified to issue Fire Alarm Design, Installation and Commissioning Certificates
- Be qualified to issue Emergency Lighting Design, Installation and Commissioning certificates
- Have a foreman on site to supervise all electrical work.
- Ensure that all apprentices are supervised by qualified personnel.
- Facilitate inspections during construction by personnel from Dublin City Council Electrical Services as required.
- Facilitate *ESB Networks (ESBN)* as far as is reasonably practicable in relation to the provision of electricity supply service.

4. Health and safety

The Sub-Contractor must comply with the provisions of *The Safety Health and Welfare at Work Act 2005* and any associated Regulations, in particular the *Safety, Health and Welfare (General Application) Regulations, 2007* and the *Safety, Health and Welfare at Work (Construction) Regulations 2013.*
The Contractor must observe all safety related procedures on site and must employ systems of work which do not endanger the health, safety or welfare of:

- His/her own employees
- Employees of other contractors
- Visitors to the site
- Dublin City Council employees
- Members of the public and other third parties

The Contractor must also be in possession of a Safety Statement in accordance with the terms of *The Safety Health and Welfare at Work Act 2005.* He must also ensure that all staff employed by him on the site are in possession of a valid current *Safe Pass* registration card or any relevant Construction Skills Certification Scheme (CSCS) card required by the *Safety, Health and Welfare at Work (Construction) Regulations 2013.*

5. Electrical Installation - General Conditions

5.1 Conditions and workmanship

The electrical installation must form part of the general building contract and the responsibility for carrying out the work to a satisfactory conclusion must be borne by the Building Contractor who must, however, sublet the work to an experienced firm of Electrical Contractors.

Approval by the Engineer of the Electrical Sub-Contractor to be employed by the General Contractor and of the arrangements made by the Contractor for carrying out the work must be obtained by the General Contractor before the installation is commenced. Only electrical contractors of good standing and with previous experience in work of a similar nature will be permitted to undertake the Electrical Installation.

5.2 Inspection of work and materials during progress

All materials used on this contract must be to the appropriate Irish, British, European or International Standard and must be available for examination by the Engineer or his duly authorised representative at any time during the progress of the contract. Only materials approved by the Engineer must be used on this contract. All accessories (switches, sockets etc.) must be plastic type to appropriate IS, BS or EN standards.

5.3 Positions and ways

The lines, positions and ways of electric mains must be ascertained by the General Contractor at an early stage so that, where possible, ways must be left to receive them to save unnecessary cutting away.

5.4 Redundant equipment and wiring

All redundant equipment e.g. showers, bathroom fans, light fittings, switches, sockets etc. must be disconnected and removed completely from the site before handover to Dublin City Council.
All redundant wiring must be disconnected and removed. Wiring that it is inaccessible may be cut away at its nearest accessible points and abandoned.

6. Electrical Installation – Technical Conditions

6.1 Metering

Electricity meters will be installed by *ESBN in* outdoor meter cabinets or at a centralised metering location. Older installations without meter cabinets will generally have the meter located beside the consumer unit.
Connections between the meter position and the tenants consumer unit (meter tails) must be by 3x16 mm^2 cable minimum.
The meter tails must be mechanically protected in accordance with *IS 10101:2020*. In instances where this is not possible the contractor must supply and install a miniature circuit breaker (63A rating, 9kA breaking capacity, B type operating characteristic) in an IP 55 enclosure located in the bottom right hand corner of the meter cabinet (where provided) in accordance with the requirements of *IS 10101: 2020* and the *Code of Practice for Customer Interface,* current edition published by *ESBN.*

6.2 Consumer Units

- Each dwelling must be provided with an individual consumer unit to which all sub-circuits within the dwelling must be connected.
- Consumer units must only be mounted in the locations and at the mounting heights permitted in *IS 10101:2020.*
- Consumer Units must comply with *IS EN 61439-3.*
- Unit must be manufactured from metallic or non-metallic materials complying with IEC 606595-2-11:2000.

- Earth and neutral bars must have double clamp screws at some point along their length with separate ways for each outgoing circuit.
- Neutrals and earths must be terminated in the same sequence as the corresponding phase conductors.
- Consumer unit must contain a main incoming isolation device. This must consist of a 63A double pole switch with protective short circuit breaking capacity of 9kA, B type operating characteristic.
- All MCBs must comply with IS/EN 60898 with a minimum short circuit rating of 3kA (9kA if used on main incomer). MCBs on sub-circuits must have a B type operating characteristic.
- Residual current devices (RCDs) must have a sensitivity of 30mA and comply with IS/EN 61008
- A main Type 2 Surge Protection Device (SPD) as per 443 and 534 of IS10101:2020 must be installed.
- Arc Fault Detection Devices (AFDD) as per 421.7 of IS 10101:2020 must be installed on all final circuits.

6.3 Circuits

All circuits, including socket outlet circuits, must be of radial design and no ring main circuits must be provided. The following circuits must be provided within each dwelling:

- Two (2) lighting circuits serving the dwelling, each wired in 1.5mm^2 single core or 2 core flat twin with insulated earth LSOH cable and protected by a 6A/ 30mA RCBO/ AFDD. Each circuit must serve approximately 50% of the lighting points.
- One (1) circuit to fire alarm system wired in 1.5mm^2 LSOH 2 core flat twin with insulated earth cable with ringing wire. This circuit must terminate on one of the MCBs provided for the lighting circuits. Wiring for the fire alarm must be in accordance with *IS 10101: 2020* and the relevant manufacturer's instructions.
- One and two bedroom dwellings must be provided with 4 no. radial socket circuits as follows: 2 circuits for kitchen, 1 circuit for bedrooms, 1 for living room / dining area/ hall. Each circuit must be wired in 2.5mm^2 LSOH 2 core flat twin with insulated earth cable and individually protected by a 20A MCB/ AFDD.
- Three and four bedroom dwellings must be provided with 5 no. radial socket circuits as follows: 2 circuits for kitchen, 2 circuits for bedrooms, 1 for living room / dining area/ hall. Each circuit must be wired in 2.5mm^2 LSOH 2 core flat twin with insulated earth cable and individually protected by a 20A MCB/ AFDD.
- One (1) radial circuit for the immersion heater wired in 2.5mm^2 LSOH 2 core flat twin with insulated earth cable protected by 20A MCB/ AFDD
- 1 no. cooker circuit wired in 6.0mm^2 LSOH 2 core flat twin with insulated earth cable protected by 32A MCB/ AFDD.
- One (1) radial circuit must be provided for gas boiler installation wired in 2.5mm^2 LSOH 2 core flat twin with insulated earth cable protected by a 6 or 10A RCBO/ AFDD and terminating in a 20A un-switched fused spur outlet (fused at 3A) located beside the boiler position. Wiring of S-plan heating system to be carried out in accordance with Dublin City Council Mechanical Section requirements. All external wiring from control centre must be hard wired in accordance with IS 10101 requirements.
- One (1) radial circuit must be provided for Mechanical Ventilation installation wired in 2.5mm^2 LSOH 2 core flat twin with insulated earth cable protected by a 6 or 10A RCBO/ AFDD and terminating in a 20A un-switched fused spur outlet (fused at 3A) located beside the mechanical ventilation unit which will be either located in the Bathroom or the kitchen.
- All socket circuits and the immersion circuit must be protected by an RCD, 63A rating, 30 mA sensitivity.

- All lighting circuits must be protected by a 6A RCBO/AFDD.
- If an electric instantaneous shower unit must be provided, the circuit must be wired in 6mm^2 or 10mm^2 cable as appropriate to the loading and in accordance with the manufacturer's instructions. The shower circuit must be protected by an RCBO/AFDD of appropriate rating and with a sensitivity of 30mA.

All circuits, including lighting circuits, must be provided with an individual neutral. The use of "borrowed" neutrals constitutes an unsafe practice and is prohibited. No lighting switch must contain more than one lighting circuit.

Summary of circuit requirements

Service	**No. circuits**	**Cable Size**	**Protective Device**
Lighting	2	1.5 mm^2	6A RCBO/ AFDD
Sockets - kitchen	2	2.5 mm^2	20A MCB/AFDD (RCD)
Sockets – all areas excluding kitchen	1 or 2 bed: 2 3 bed: 3	2.5 mm^2	20A MCB/AFDD (RCD)
Immersion	1	2.5 mm^2	20A MCB/AFDD (RCD)
Cooker	1	6 mm^2	32A MCB/ AFDD
Gas boiler installation	1	2.5 mm^2	6A or 10A RCBO/ AFDD
Mechanical Ventilation system	1	2.5 mm^2	6A or 10A RCBO/ AFDD
Instantaneous shower (if provided)	1	6 mm^2 or 10mm^2	40A/0.03 RCBO/ AFDD

Circuits marked RCD to be additionally protected by a residual current device (RCD), 63A rating, 30 mA sensitivity. Circuits marked RCBO must be provided with a separate RCBO exclusively for the protection of that circuit. Circuits marked AFDD to be additionally protected by an arc fault detection device (AFDD).

6.4 Cables

All cables to comply with 527.0 of I.S. 10101:2020 and meet the requirements of Class Dca s2,d2,a2 or higher in accordance with I.S. EN 50575. In addition, cables must be tested in accordance with I.S. EN 61034-2 and the smoke generated must result in transmittance values of not less than 60%.
Each coil of cable delivered on site must be new and bear the maker's sealed label which must state clearly the maker's name, megohm grade and normal details of the wire. The core identification colour of all cables and wires must comply with the core colour scheme specified in *IS 10101: 2020*.
All cables must be either harmonised or be an approved national type. Harmonised cables must carry the <*HAR*> mark plus name of national approvals body e.g. *BASEC, VDE.* Approved national cable must carry the name of the relevant national approvals body.

6.5 Wiring System

Wiring for socket outlets, cookers, immersions and showers must be by LSOH 2 core flat twin with insulated earth cables (or LSOH in conduit/ trunking for surface installations).
Wiring for lighting circuits may be either single core 1.5 mm^2 LSOH/ LSOH cables or 1.5 mm^2 LSOH 2 core flat twin with insulated earth cables wired on the loop-in system (or LSOH in

conduit/trunking in surface installation). Must the 2 core flat twin with insulated earth system be used the loops must be made at switch points only and not at lighting points. All such switch boxes must have a minimum depth of 25mm and all connectors contained therein must have a minimum rating of 20A.
All wiring must, as far as possible, be concealed. However, there may be some situations where this is not practicable. This may arise where, for example, in bedrooms and hallways where partitions with in-situ PVC conduit are being installed or where existing kitchen units are being retained. In such instances wiring may be surface mounted in PVC conduit and trunking. Conduit and trunking must be secured to building surfaces by means of saddles and/or screws and not by other means such as self-adhesive tape. All such wiring must be carried out in a safe, neat and workmanlike manner. The surface wiring must, wherever practicable, be concealed by, for example, mounting it at high level behind plinths of kitchen units or in the void below worktops.
Cables must be run from the consumer unit to the attic space or under floorboards. Cables rising to the attic space must either be surface mounted in trunking or recessed.
All recessed wiring must be in accordance Section 522 of *IS 10101: 2020*. Wiring embedded in solid or hollow partition walls must be enclosed in galvanised steel conduit except where the following two conditions apply:

- The distance measured horizontally between the wiring and the reverse surface of the wall is not less than 50mm, and
- The wiring is installed in a straight horizontal and vertical run going directly to a switch or socket position.

In these situations, wiring must be enclosed in PVC conduit.
All conduits must enter their respective boxes each box for at least 5 mm. and must extend at least 100 mm. into the ceiling cavity. In walls which are chased to receive it, the conduit must be secured, to the satisfaction of the Engineer, with a hard sand and cement mix to within 6 mm. of the finished plaster. On walls which must be dry-lined the conduit must be secured by means of a sufficient number of crampets or saddles.
Joists must not be grooved or cut at top or bottom. 25 mm. diameter holes must be bored through the centre of the joists before these are fitted in position. If this is not done a drill having a right angle adaptor must be used to bore the holes in situ to ensure that they are horizontal. All holes must be horizontal and in straight lines and must lie beneath the appropriate traps. In attic spaces cables must be clipped neatly to the sides of the joists at 250 mm. intervals horizontally and 120 mm. intervals vertically or must run across the joists at right angles to them. In no case must the cables be taken diagonally through or across the joists.
Where conduit enters the switch and socket outlet boxes these must be drilled to accept the conduit and under no circumstances may these be cut, grooved or scooped for this purpose.
The earth wires must be sleeved individually within outlet boxes.
All wiring in close proximity to hot water pipes must be protected by covering the pipes with insulation.

6.6 Conduit and Trunking

All PVC conduits must be heavy gauge round plain conduit manufactured for high impact installation with minimum wall thicknesses as follows:

Outside Diameter mm	Minimum wall Thickness
20mm	1.8mm
25mm	1.9mm
32mm	2.5mm

All conduit, both galvanized steel and PVC must comply with I.S. EN 50086 or equivalent national standard.
Trunking systems must comply with I.S. EN 50085-1 or equivalent national standard.

6.7 Lighting

A ceiling rose and lamp holder, without lamp, must be provided in all rooms except the bathroom.
A Class II totally enclosed luminaire must be provided in the bathroom. The fitting must be capable of accepting either an incandescent or a compact fluorescent lamp with integral control gear. Light switches, must, in general, be one way with light switches located on the open side just inside doorways. Landing lights must be provided with two way switching with switches at both top and bottom of stairways. Light switches for bathrooms must be located in a convenient position immediately outside the door.
Light switches must be located between 900mm and 1200 mm above finished floor level in accordance with *IS 10101: 2020.*

6.8 Ventilation

Demand Controlled Ventilation

A demand controlled ventilation system with ducting and central fan in the bathroom may be supplied as part of the mechanical contract. A spur unit must be provided in the bathroom for this system.

6.9 Socket outlets

The number and location of socket outlets must be determined by the design of the dwelling. However, the following minimum quantities must be taken as a guide:

- Three twin socket outlets in the master bedroom – two located on either side of bed and one located facing bed.
- Two twin switched sockets in all other bedrooms, spaced to allow for varying furniture layouts.
- A minimum of three twin switched sockets in living/ dining room. Where the living and dining rooms are separate a minimum of three twin switched sockets must be provided in each room. Sockets must generally be located in the room corners away from the door.
- One switched twin socket over each worktop section in kitchen i.e. where a worktop is divided by a sink, cooker or other unit a socket must be provided over each worktop section.
- Single sockets must be provided under kitchen worktops where space is provided for an appliance such as fridge, washing machine etc. A single socket must be provided at high level for a cooker hood, where this is supplied.
- All socket outlets located in inaccessible locations (e.g. under worktops or at high level for cooker hoods) must be provided with an isolating switch, clearly labelled in accordance with *IS 10101: 2020.* These isolating switches must be located over the worktops or as close as possible to the relevant socket.
- One twin socket in hallway.

No sockets to be provided in bathroom or in stores / cupboards. Socket outlets in the kitchen must be mounted 1.2 m. above floor level and in all other rooms must be mounted 0.4 m. above floor level. Sockets must be secured by cup-head chrome plated screws.
Socket outlets must be white plastic flush mounting shuttered three pin 13A type conforming to BS 1363-2:2016+A1:2018 as must be provided at the locations indicated on the drawings.

6.10 Cooker Switch

A 45A/60A white flush mounted cooker switch of approved pattern with 35 mm box, must be provided in the kitchen adjacent to the cooker position at a height of 1.2 m. above floor level. A 20 mm. conduit must be sunk in a wall chase from the cooker switch to a point centrally

behind the cooker 0.5 m. above floor level, and must terminate in a standard outlet box with flat outlet cover. The cooker circuit E.C.C. must be secured first at the earthing terminal of the cooker switch.

6.11 Boxes

Switch and socket outlet boxes must be metal with earth terminal. They must finish, flush with the finished wall surface. This may necessitate a deep box in instances where additional insulation has been provided on the inside of a wall.
On walls which must be dry-lined, or in studding, boxes must be fixed in position with two non-corroding woodscrews. On walls which must be rendered and skimmed the boxes must be fixed either by two non-corroding woodscrews or a hard sand and cement mix. Neither "HILTI" type fixings nor Masonry nails must be used in any event. Plaster depth boxes must not be used.

6.12 Immersion Heater

A standard 35 mm outlet box with 20 Amp dual switch with neon indicator must be provided outside and as near as possible to the hot press. It must be located in a position on the landing convenient for operation and at a mounting height of 900mm to 1200mm above finished floor level. The Dual Switch must be to B.S. EN 60669-1:2018.
A 610 mm. 3kW/2kW Dual Immersion heater to BS EN 60335-2-73:2003+A2:2009 (Household and similar electrical appliances) must be installed in the hot water cylinder and connected to the Dual Switch by suitable heat resistant flex.
The immersion heater must be fitted with both control thermostat and non-resetting thermal cut-out.
The flex must exit the back of the outlet box and pass through the stud partition or wall entering the hot press just below the bottommost shelf. The flex must be clipped neatly along the sides and shelf of the hot press so that the flex does not touch the side of the cylinder. The cylinder must be installed in such a way that the immersion group faces towards the non-hinged side of the hot press door opening.

6.13 Fire and Carbon Monoxide Alarms

Each dwelling must be provided with an individual fire alarm system consisting of interlinked optical smoke and heat detectors in accordance with Category LD2 of *IS 3218:2013+A1:2019 Fire Detection and Alarm Systems for Building: System Design, Installation Commissioning, Servicing and Maintenance*.
The number and location of detectors must be determined by the design of the dwelling but the following may be taken as a guide for a typical dwelling:

- One smoke detector in hallway.
- One heat detector in kitchen.
- One smoke detector in living room.
- One smoke detector in each bedroom.
- It may be necessary in some instances to provide an additional smoke detector on the escape route at the rear of the dwelling. However, in many instances, the heat detector in the kitchen will serve this purpose.
- The fire alarm equipment chosen must have the option for the provision of a detector base incorporating volt-free relay contacts in lieu of a standard base.

The detectors must be mains operated with rechargeable lithium cell back-up and interlinked. Electricity supply must be taken from a lighting MCB on the consumer unit, but not the bathroom circuit.
Each dwelling must also be provided with the following carbon monoxide detectors:

- One carbon monoxide detector per fuel burning appliance (mounted on ceiling in room where appliance located).

- One carbon monoxide detector in hall adjacent to bedrooms (mounted on the ceiling).

The carbon monoxide detectors must be interlinked to cut out the gas boiler if activated. Electricity supply for carbon monoxide detectors must be hard wired and must be taken from the RCBO for the gas boiler circuit.
The detectors must have the facility to be house coded and commissioned via an industry standard RF tool.

6.14 Gas Heating System

The electrical contractor will be required to wire the gas heating system which will typically include the following;
Gas Heating:

- S PLAN 2 Zone (2 Motorized Valves, 1 Room Stat, 1 Time Clock, 1 Cylinder Stat
- S PLAN 3 Zone (3 Motorized Valves, 2 Room Stat's, 1 Time Clock, 1 Cylinder Stat
- Combi Boiler (1 Room Stat, 1 Time Clock)

6.15 Earthing and Bonding

Earthing and bonding arrangements must comply with the requirements of *IS 10101: 2020.*

The Earth bar of the consumer unit must be used in place of a separate external neutral block. It must be fitted with two double screw terminals to accept the incoming 16 sq. mm. earthing conductor and 16 sq. mm. neutralising lead to the approval of the Engineer.

The earthing conductor must run from the earth electrode which must be a galvanised earth rod not less than 16 mm. in diameter, driven vertically into the ground to a depth not less than 1200mm. The connection to the earth electrode must be made by means of a nonferrous clamp protected by an approved water-repellent tape and enclosed in a flush mounted galvanised adaptable box measuring 100 mm. x 100 mm. x 50 mm. minimum. The earthing conductor must be protected by a 20 mm. "Hydrodare" tubing or equal. Earth rods of adjoining dwellings must not be driven closer than 3 m. to each other.

Earth continuity conductors must be brought to all switch and lighting points in accordance with *IS10101:2020*.

Connections of bonding leads to pipes and of the earthing conductor to the earth rod must be made by means of approved clamps. All earthing clamps must be of an approved non-ferrous design having a separate terminal for the cable. Pipes must be thoroughly scraped and cleaned before a clamp is fitted.

6.16 Testing and Certification

The electrical contractor must fully inspect, test and certify each dwelling and any other electrical installation forming part of the works, as required by *IS10101: 2020*
Testing must include both pre and post connection tests. A completion certificate and test record sheets must be provided in respect of each completed installation in accordance with the *IS10101: 2020.*
No dwelling will be taken over by Dublin City Council until:

- The electrical installation has been completed and fully tested;
- The completion certificate has been completed and signed by the Electrical Contractor confirming that all pre and post connection tests have been completed in accordance with *IS 10101: 2020*;
- All test record sheets have been completed and signed by the Electrical Contractor;
- All equipment that is the property of *ESB Networks* i.e. the cut-out, electricity meter and isolator have been installed by that body;

- All electrical connections to *ESB Networks* equipment have been completed and that no connections that rely on the use of temporary connectors are left in situ.

Testing must include the electrical commissioning of the smoke detectors and electrical supply and to the gas boiler (if supplied).
All documentation relevant to the electrical installation must be included in the Safety File to be handed over Dublin City Council in accordance with the requirements of the *Safety, Health and Welfare at Work (Construction) Regulations 2013.*

7. Additional Services

In some instances, additional services may be required and the following additional conditions must apply

7.1 Dwellings for tenants with disabilities

In circumstances where a dwelling is being provided for persons with disabilities the requirements of the *Building Regulations* published by the *Department of Environment, Heritage and Local Government (DOEHLG)* and any other relevant bodies must be taken into consideration if the design of the electrical services. This may require, for example, the provision of such items as special door bells and fire alarms for the deaf and hard of hearing; stair lifts etc.
Sockets with outboard rockers and light switches with wide pads must be used in these circumstances.

7.2 Electrical instantaneous showers

Where an electrical instantaneous shower unit must be provided it must consist of an *industry standard model*.
A 40A isolating switch with indicator (or higher rating if the shower unit requires it) must be provided for control of the shower unit. This must consist of a wall mounted switch located outside the bathroom, or a ceiling mounted pull-cord switch located in zone 3 in the bathroom.

7.3 Underground services

Where electrical services cables are required to be laid underground they must be accommodated in underground ducts with surface boxes provided at suitable points to facilitate future renewal and maintenance. The ducting installation must be in accordance with the colour coding and other details specified in the *Code of Practice for Avoiding Danger from Underground Services* published by the *Health and Safety Authority (H.S.A.)*. Suitable marking tape must be laid for subsequent identification.
All underground cables must be LSOH/SWA/LSOH to BS 6346 or cables with equivalent mechanical protection.
Each cable must be identified along its route by means of suitable robust labels wrapped around its sheath. This identification must be at all accessible points i.e. in switchrooms and at access chamber positions.

7.4 Solar Photovoltaic Installations

Dublin City Council manages a diverse range of properties incorporating many different types of solar electric (P.V.) systems including micro inverter systems, string inverter systems, optimiser / economiser systems etc.
M&E consultants must consult with Dublin City Council Electrical Services Section once their system design is complete. The Electrical Services section will provide guidance to the

consultant/ system designer in the process of integrating PV into the electrical installation at the dwelling. All pertinent standards, system architecture, PV array outputs, cabling systems, surge protection, wireless monitoring mechanisms and other relevant details must be furnished with the system design by the consultant, as part of the system design, while seeking approval from the Electrical Services Section.
National electrical safety standards to be adhered to. PV system must be installed in compliance with 'National Rules for Electrical Installations'.
All solar PV products must comply with *EN 61215:2005* "Crystalline silicon terrestrial photovoltaic (PV) modules – Design qualification and type approval" *or EN 61646:1977* "Thin film terrestrial photovoltaic (PV) modules – Design qualification and type approval".
The panels must also be tested to the *EN 61730* Photovoltaic (PV) module safety qualification and carry *EN 62716* Ammonia Resistance Certificate and *IEC 68-2-52* (Salt mist resistance). The installation must satisfy Conditions Governing Connection and Operation of Micro-generation as published by the ESB Document No: DTIS-230206-BRL.

8. Procedure for obtaining electricity supply services

8.1 Before commencement of electrical installation

This Section outlines the procedure for obtaining an electricity supply and for connection of the completed electrical installation *by ESB Networks (ESBN*). There are three possible scenarios that may be encountered:

Electricity Supply still connected
If the electricity supply to the dwelling is still connected the building contractor must make an application to an electricity supplier licensed by the *Commission for Regulation of Utilities (CRU)* to transfer the electricity account into his own name.

Electrical Supply disconnected
If the electricity supply has been disconnected the building contractor must make an application, in his own name, to an electricity supplier licensed by *CRU*.

Electricity Supply to be altered
ESB Networks require electricity meters to be located at the entry point to a building, either in a meter cabinet outside the front door or, if indoors, adjacent to the consumer unit position in the hallway. Unacceptable locations are under stairways or in kitchens. In these circumstances, it will be necessary to arrange for the incoming electricity supply point to be altered and this must be arranged in advance by the building contractor / electrical contractor with *ESB Networks*. It must be noted that this process may take a considerable amount of time and an early application to *ESB Networks* is strongly advised. Meter cabinets and ducting for underground electricity services, if required, must comply with the requirements of the most recent edition of the *ELECTRICAL SERVICES GUIDEBOOK – Housing Schemes*, current edition published by *ESB Networks*.

All procedures and forms are available on the ESB website www.esb.ie/esbnetworks
All fees for new supplies, connections etc. must be paid to *ESB Networks* by the building contractor.

8.2 On completion of the electrical installation works

a) The electrical contractor submits a completion certificate to his *Electrical Safety Supervisory Body (ESSB)* i.e. *RECI or other* as appropriate, quoting the relevant MPRN

b) The building contractor makes arrangements with *ESB Networks* to gain access to the dwelling to facilitate connection. *ESB Networks* will either connect meter tails to meter or supply and install new meter and isolator. If new meter and isolator provided, *ESB Networks* will connect meter to incoming side of isolator. They will seal both meter and the incoming side of the isolator.

c) If an isolator is fitted the electrical contractor connects the meter tails cables from the consumer unit to the outgoing side of the isolator and switches it the ON position and applies his *ESSB* contractor' seal.

d) The electrical contractor carries out post-connection tests on each dwelling as required by the *National Rules for Electrical Installations* and completes and signs that part of the completion certificate.

e) The provision of an electricity supply also enables the following:

- Commissioning of central heating system
- Testing of fire alarm system

8.3 On handover of dwelling

- Tenant applies to an electricity supplier licensed by the *CRU* for supply in their own name on allocation of dwelling
- The builder notifies his electricity supplier of his intention to close the electricity on completion. On day of handover he takes final meter reading and closes the electricity account.

It is important that all connections to the ESB network are permanently made by *ESB Networks* and no dwelling must be left on temporary connectors.
No property will be accepted for handover by Dublin City Council unless this procedure has been complied with.

Notes

Residential electricity customers were previously restricted to one supplier only but now have a choice in relation to their electricity supplier, who must, however, be licensed by the Commission for Regulation of Utilities (CRU). This option is also available to contractors making an application for supply to facilitate connection prior to handover.

ESB Networks is the sole owner and operator of the electricity distribution network.

AMENDMENT DOCUMENT CONTENT

DUBLIN CITY COUNCIL

Environment & Public Realm
Public Lighting & Electrical Services

AMENDMENT NOTICE

To: DCC General Specification for Electrical Services (June 2022)
Document Ref: DCC/ES_GENSPEC/2022

Amendment No: 01/2026

Date: 06/05/2026

Issued By: Public Lighting & Electrical Services – Housing

Status: Tender Addendum – Mandatory Compliance

1. PURPOSE OF AMENDMENT

This amendment updates the requirements relating to:

- Cooker final circuits
- Cooker isolation arrangements
- Cable sizing
- Protective device selection

This amendment supersedes Section 6.10 "Cooker Switch" and related circuit table entries within Section 6.3 of the June 2022 Specification.

All other clauses of the June 2022 Specification remain unchanged.

2. REVISED COOKER CIRCUIT REQUIREMENTS

The following provisions must replace Section 6.10 and associated cooker circuit references.

2.1 Cooker Circuit - General Requirements

All cooking appliances must be supplied by dedicated radial circuits.

The electrical designer must confirm final cable size and protective device rating based on:

- Manufacturer's declared load
- Installation method
- Diversity
- Installation conditions
- Requirements of I.S. 10101

Minimum requirements below must apply unless a higher rating is required by design.

2.2 Option A - Free-Standing Combined Cooker (Hob & Oven)

Where a free-standing combined cooker is provided:

- One dedicated radial cooker circuit must be installed.
- Minimum cable size: 10 mm^2 LSOH twin and earth
- Minimum protective device: 40A Type B MCB
- RCD protection must be provided where required under I.S.

10101. The circuit must:

- Terminate in a fixed cooker connection unit/outlet plate.
- Be controlled by a 45A or 50A double-pole cooker control switch.
- The switch must:
    - Be located adjacent to the appliance position
    - Be mounted approximately 1200 mm above finished floor level
    - Provide double-pole isolation
    - Be clearly labelled

Back box depth must not be less than 47 mm where 10 mm² conductors are used.

2.3 Option B - Separate Hob and Oven Arrangement

Where separate appliances are installed:

Hob Circuit

- One dedicated radial circuit
- Minimum cable size: 10 mm² LSOH twin and earth
- Minimum protective device: 40A Type B MCB
- Controlled via a 45A/50A double-pole cooker switch
- Terminate in fixed cooker connection unit/outlet plate

Oven Circuit

- One dedicated radial circuit
- Minimum cable size: 2.5 mm² LSOH twin and earth
- Protective device: 20A Type B RCBO (30mA)
- Circuit must terminate in:
    - A single socket outlet located behind oven housing
    - Controlled via a 20A double-pole switch located in accessible position

The cooker connection unit/outlet and associated cable and containment from the cooker control switch must be flush mounted as the default arrangement.

Surface mounting must only be permitted where coordination with the installed kitchen units confirms that the full appliance recess depth is maintained and that no projection from the connection unit, cable, or containment will reduce the usable recess space.

The installation must not reduce the standard appliance recess depth provided within the kitchen units. Any arrangement that prevents a standard domestic cooking appliance from being fully recessed into the designed appliance space must be deemed non-compliant.

2.4 Protective Device Clarification

Where installation method, concealed wiring depth, grouping factors, or zoning requirements under I.S. 10101 necessitate additional protection:

- The designer must provide RCBO protection accordingly.

Type AC RCDs must not be used.

2.5 Isolation andLabelling

All cooker and hob isolation switches must:

- Be clearly labelled to indicate the appliance served.
- Be accessible without the need to move the appliance.
- Provide double-pole isolation.

Continuity of circuit protective conductor must be maintained throughout.