

TRADE SPECIFICATION

ELECTRICAL

GENERAL

- a) This Trade Specification gives information regarding the procurement of materials, installation of materials and on-site working methods to ensure the correct standards and compliance is achieved on site. This trade specification is to be read alongside working drawings, BDW Standard Details, manufacturer's literature and the Barratt Construction Best Practice Guide. Any statutory requirement relating to the Trade Specification takes precedent. If any doubts remain regarding the information given or further clarity is required, these concerns must be communicated to the Commercial Department BEFORE proceeding.
- b) **BDW Trading Limited**
Barratt Homes and David Wilson Homes are all trading names of BDW Trading Limited "the Company".
- c) **Clearing**
As part of this Trade Specification the Contractor is responsible for clearing up and safe removal of waste materials from in and around the house arising from the execution of their Works, ensuring that all waste materials have been taken to the waste segregation area for sorting and disposal by Contractor in the appropriate skip.

Failure to comply with this requirement resulting in the Company's labour performing this task will result in contra charges being levied against the Contractor.

The Contractors attention is particularly drawn to the sections below which state where waste materials must be removed as work progresses.

- d) **Contract Conditions**
The Contractors attention is drawn to the Company's Conditions of Contract and General Terms.
- e) **Defective Workmanship**
All defects arising from poor workmanship by the Contractor or, by the Contractor not carrying out the Works in accordance with this Trade Specification are to be remedied by the Contractor at no cost to the Company.

Failure by the Contractor to carry out this contractual obligation, resulting in an alternative Contractor being instructed to carry out such remedial work, will incur the Contractor with the cost thereof.

Should any element of work, undertaken by a preceding trade, be considered deficient and inhibiting progression by this trade, all such defects must be brought to the attention of BDW Site Management for remedy prior to the commencement of the works.

f) **Governing Documents**

The documents below must be used for reference in compliance with the Company's standard working drawings and construction best practice guide. The Contractor is to ensure that all current versions are followed.

All materials, equipment, accessories and workmanship shall fully comply with the latest edition of the IET Regulations for electrical installations and current amendments, and to current Building Regulation and Technical Standards.

All manufacturers used must hold the current BS 5750: Part 2: 1979, ISO:9002/1987 or in the case of cables BASEC certification. It is the Contractors responsibility to certify that they have viewed a copy of the relevant certificates showing compliance.

All Electrical installation must be completed in accordance with BS 7671, BS 3456 and BS 3955.

The Company may require the Contractor to use its IT platform to complete QA checks and the Contractor must provide suitable hardware and ongoing training to any supervisors to allow them to access and record appropriate QA checks.

g) **Group Suppliers**

The Contractor should be aware that the Company operates National Commodity Agreements with a number of nominated suppliers, as listed below. It is the Contractors responsibility to ensure that these agreements are adhered to. Failure to do so may lead to the Company making a claim from the Contractor for any loss of rebate.

Electrical Accessories, Smoke Detectors
and Downlights –

Deta Electrical Co Ltd

Kingsway House
Laporte Way
Luton
Bedfordshire
LU4 8RJ

Consumer Units –

Hager Ltd

Hortonwood 50
Telford
Shropshire
TF1 7FT

Mechanical Ventilators,
Ducts and Terminations –

**Volution Group Trading as Vent
Axia**

Flemming Way
Crawley
West Sussex
RH10 9YX

External Lighting –

Green Lighting Ltd

Unit 18, Great Western Business Park
McKenzie Way
Worcester
WR4 9PT

Electric Vehicle Charging Point (EVCP) –

Egg

Griffin House
161 Hammersmith Road
Hammersmith
W6 8BS

Pod Point

28-42 Banner Street
London
EC1Y 8QE

Eco2Solar

Summerfield House
Arthur Drive
Kidderminster
DY11 7SL

Replacement Light Bulbs –

BJ Lighting Supplies Ltd

Unit 3, The Raylor Centre,
York,
YO10 3DW

Door Entry Systems –

Comelit Group UK Ltd

Unit 4 Mallow Park Watchmead
Welwyn Garden City Herts
AL7 1GX
Tel: +44 (0)1707377203
Fax: +44 (0)1707377204

www.comelitgroup.co.uk

sales@comelitgroup.co.uk

laura.hickson@comelitgroup.co.uk

No other manufacturer's products are to be specified unless otherwise stated in the following Schedule of Materials.

h) **Health & Safety**

The below are specific requirements required for the work activity and reference must also be made to the Company's Safety Health and Environmental Code for Sub-Contractors (SHE Form 09). The Contractor must be conversant with this code and fully apply its requirements where practicable.

The Contractor is to provide suitable competent supervision for their work activities and ensure that monitoring of their work activities is undertaken. A report detailing the monitoring of work activities and action taken must be provided to the company.

All operatives are to be inducted on site prior to carrying out any work. It is the Contractors' responsibility to ensure that all persons that are engaged on a site are presented for induction prior to commencing work.

It is the responsibility of the Contractor to ensure all persons working for them have been supplied with and wear the appropriate Personal Protective Equipment (PPE) and Respiratory Protective Equipment (RPE) required by statutory requirements, site rules and/or specified controls measures required for the work. It is the Contractors' responsibility to provide the PPE/RPE.

The Contractor is responsible to ensure all operatives have a valid competency card (i.e., CSCS or equivalent) for the specific work activities to be undertaken.

Prior to work commencing the Contractor must provide an appropriate risk assessment and/or method statement for all the work activities, which also includes an assessment for manually handling material, and COSHH assessments for any materials classified as hazardous. The Contractor must ensure that all their workers understand and have been provided with a briefing on the control measures required.

The Contractor must ensure prior to commencing works that appropriate fall protection has been provided (external and internal with a plot) and that it is appropriately positioned to enable works to be completed safely. The Contractor or any of their workers must not, at any time, alter, modify, or amend any scaffolding including handrail systems which has been provided by specialist Contractors (i.e., scaffolding Contractor).

The Contractor must provide suitable access equipment to undertake the works. Any access equipment used by the Contractor must be a minimum of BS EN 131.

A permit to work must be obtained by the Contractor from the Company prior to work being undertaken in any loft space. The permit must be closed and signed off when the work has been completed.

The Contractor shall provide suitable task lighting to illuminate any works within a loft space. Head torches can be used for localised lighting, but additional lighting will be required to enable safe movement within the loft space.

The Contractor shall provide and ensure that work is undertaken from a suitable and sufficient proprietary working platform within the loft space. The platform should be 600mm wide where practicable and be supported by a minimum of 3 truss cords. Sufficient platforms must be provided to enable safe movement of workers within the loft space.

The contractor shall provide a safe means of access into the loft space which will be via an appropriately secured ladder, which extends into the loft space via the access hatch.

All Electrical work in new dwellings must comply with Part P Building Regulation requirements and be carried out by competent and trained persons.

Evidence of compliance with Part P will be that the work has been carried out by a skilled person and the provision, to the building control body of BS 7671 'Requirements for electrical installations' certificate for the installation.

Both the skilled person and the electrical Contractor must be a member of, one of the five, Government approved, skilled person self-certification schemes.

i) **Materials**

It is the Contractors responsibility for checking materials delivered directly to site for any damage, colour variation and correct quantities prior to unloading. Should significant quantities of damaged materials be identified, these must be reported to the supplier before accepting the consignment.

The Contractor is responsible for unloading, protecting and safe storing of all of their own materials to avoid damage and surface contamination.

The Contractor must ensure that all materials are satisfactory for use and have not been subject to deterioration and conform to the relevant British Standards, if applicable Third Party Certification (e.g. Agrément Certificates), NHBC and Local Authority requirements. Failure resulting from the Contractor using unsuitable or damaged materials will result in the Contractor being liable for any costs in rectifying the same.

j) **Manufacturers Products**

The Contractor must make themselves aware of Manufacturer's products and fixing instructions at the tendering stage as no claim for want of knowledge will be entertained. All technical issues must be resolved before work commences on site.

k) **Site Conditions**

The Contractor is to examine the drawings, visit the site in order to ascertain position of site office, compound, electricity and water supplies.

Accessibility may vary depending on the location, weather conditions and such like. These factors must be taken into consideration at tender stage as no claims will be entertained for additional costs due to adverse site conditions.

l) **Sub-Contractor**

The Contractor must not further sub-contract any part of the Works to another Contractor without the prior knowledge and written approval of the Company.

Where fireproofing or fire stopping measures are likely to follow this trade, it is essential the preparation work is sufficiently prepared. Please refer to the Fireproofing Trade Specification and associated standard details and drawings to ensure knowledge of requirements. If in doubt, please ask for clarification, prior to signing this document.

Manufacturing engineering judgements should be requested for non - standard applications. Please contact Group Design and Technical for assistance.

It is essential that the Contractor liaises with all other trades associated with the Works to ensure the sub-structure is installed correctly and appropriately prior to work being carried out, including but not limited to:

Plumber

The Electrical Contractor must work in conjunction with the Plumbing and Heating Contractor to ensure the wiring locations are appropriate and all necessary connections are completed for all items supplied and installed by the Plumbing and Heating Contractor requiring connection to either mains power or to data points; including the heating programmer, heating control units, electric showers, smart hot water cylinders, hot water taps and air source heat pumps.

The Electrical Contractor must also work in conjunction with the Plumbing Contractor to install condensation traps and drain to the ventilation duct, in readiness for the Plumbing Contractor to connect the drain to the SVP.

Roof Insulation Contractor

Where works require the Electrical Contractor to enter the loft space after the loft insulation has been installed, ensure that where loft insulation is required to be temporarily moved to allow works to be completed in this area, that the loft insulation is not damaged and is fully reinstated to its original position prior to the Electrical Contractor leaving the area.

1. QUOTATION

- 1.1 The Contractor must provide a fully inclusive lump sum (labour and materials) fixed price quotation per House Type for the design and installation of **ELECTRICAL** works.
- 1.2 All works are to be completed in accordance with the House Type working drawings, kitchen layouts and Sales specification supplied with this specification document. The Contractors particular attention is drawn to the importance of following this information.
- 1.3 Your quotation for the Works is deemed to include all necessary,
 - (i) all equipment and materials necessary for the complete electrical installation,
 - (ii) labour,
 - (iii) supply of materials to Site,
 - (iv) protecting materials on Site,
 - (v) distributing materials to Plots
 - (vi) installation,
 - (vii) connecting up,
 - (viii) testing,
 - (ix) commissioning,
 - (x) leaving in a serviceable condition,
 - (xi) providing record drawings,
 - (xii) inspection and
 - (xiii) completion certificates.

- 1.4 All Works must be completed in accordance with the above listed Governing Documents, current codes of practice, [I.E.T. 18th Edition changes](#) and manufacturers recommendations.

2. ACCESSORIES

- 2.1 All accessories shall be manufactured to the appropriate British standards (as latest edition I.E.T. Regulations) and shall be as listed in the schedule of materials.
- 2.2 All switch socket outlets shall be of the D.P. switched type and where a fused connection unit is fitted this shall be of D.P. switched type.
- 2.3 For compliance with Part L of the Building regulations all fixed lamp holders, pendants and battens must be of safety type, to enable the safe removal by decorators, compliant with BS EN 61184, fitted with low energy lamps (with a better efficacy than 40 lumens per circuit) all in accordance with the working drawings with the exception of garages, lofts, cupboards and outhouses which are excluded from the low energy requirement.
- 2.4 All fuse spur switches in the kitchen and utility are to be durably marked/engraved for identification purposes i.e. “dishwasher”, “fridge”, “washing machine” etc. to BS7671.
- 2.5 All socket outlets for integrated appliances are to be accessible after the appliance is fitted.
- 2.6 Particular attention shall be paid to the fixing of all accessories to ensure that they are correctly aligned and suitably mounted to accord with plaster or other finishes.
- 2.7 Unless otherwise specified by the Company mounting heights are to be in accordance with Part M of the Building Regulations and as indicated on working drawings.
- 2.8 Wherever appropriate, accessories of the same type (e.g. light switches) shall be mounted at the same height above finished floor level. Adjoining sockets should be positioned a consistent distance to the next socket. Light switches should be positioned a consistent measurement from each architrave, fuse spurs positioned above door openings should be centrally positioned. Screw fixings on socket plates should have the screw slot finished vertically if not provided with a cover plate.

3. APPLIANCES

- 3.1 Fixed electrical appliances such as ovens and hobs must be earth bonded to ensure that in the event of a fault, the circuit breaker and/or RCD is tripped at the consumer unit to prevent electrocution.
- 3.2 All appliance fitting must be carried out in accordance with I.E.T. Regulations.

4. BONDING ETC

- 4.1 The making off of all bonding conductors etc, will be affected by means of purpose made clamps or terminals.
- 4.2 Each complete circuit will be provided with a separate protective conductor brought back to

a common earthing bar at the consumer's main switchboard.

- 4.3 Attention is also drawn to the requirements for bonding of other services and full compliance with I.E.T. Regulations is essential.
- 4.4 Supplementary bonding will be carried out in accordance with I.E.T. Regulations.
- 4.5 Particular attention will be paid to the requirements in bathrooms as detailed in I.E.T. Regulations.

5. BROADBAND

- 5.1 Where BT Openreach Superfast Fibre Access is to be installed, all equipment will be supplied by BT Openreach (BTOR).
- 5.2 The BTOR installation engineer will drill a 12mm hole in the wall of the property and install the cable lead-in protector (CLI) provided by BTOR and trim it flush to the external wall and the inside face of the internal backbox of the Customer Splice Point (CSP).
- 5.3 Where Virgin Media O2 (VMO2) is to be installed, The Electrical Contractor is to core drill a minimum 15mm diameter hole through the wall, from the outside to the inside to prevent undue damage to the face of the outside wall, in a slight upward angle to prevent moisture ingress, where the internal Optical Network Termination unit (ONT) or router is to be positioned and install a uPVC micro-duct in readiness for the VMO2 Engineer to install Ten Gigabit Symmetrical – Passive Optical Network (XGS-PON) fibre and connection to the router.
- 5.4 The Electrical Contractor is to feed the EZ Bend fibre optical cable (provided by BTOR) from the Customer Splice Point (CSP) to the Optical Network Termination unit (ONT) within the property shown on the working drawing marked BTOR. Where this is not on an outside wall of the property the Contractor is to wire only the EZ Bend fibre optic cable at first fix stage, so that it is behind the finished plastered surface of the wall, to the location shown on the working drawing marked BTOR.
- 5.5 The Electrical Contractor is to provide and install a Cat 6 module wired using either Cat 5e or Cat 6 cable in a 'star pattern' from the location of the BT Openreach or Virgin Media O2 equipment to all locations as shown on the working drawings including the lounge 'media plate' as indicated on the working drawings to enable the socket to be used for both data and telephony, if required.

6. BUILDERS WORK

- 6.1 Electrical Contractors are responsible for all their own builders work; this includes Diamond Core Drilling brickwork/Blockwork where applicable to facilitate mechanical ventilation units.
- 6.2 Install required noggins at first fix for timber frame house types.

7. CABLE INSTALLATION

- 7.1 All buried wiring must be installed to a minimum depth of 50mm and must be protected by an RCD. Wiring between floors and in roof voids shall traverse joists etc. by means of holes drilled through the centre of such joists (to NHBC requirements): - Adequate support must be provided in compliance with all current requirements of the I.E.T. Regulations.
- 7.2 Where wiring is in contact with, or enclosed by, thermal insulation, consideration must be given to the requirements of the I.E.E Regulations .
- 7.3 Where standard circuit arrangements are appropriate the requirements of Appendix S for socket outlets must be fully complied with and Appendix 4 must be employed for the calculation of maximum demand and diversity.
- 7.4 Cables are to run in 'safe zones' as detailed by NHBC and BS 7671. Concealed cables (lighting and power) which are installed at a depth of less than 50mm will require RCD protection. Any cable (irrespective of depth) within a partition which has metallic parts (excluding fixings) must be protected by an RCD.
- 7.5 All cables in airing cupboards to be routed and clipped so as to avoid hazard to user.
- 7.6 Where electrical cables are located within timber stud partition walls and / or bulkheads, the cables are to be protected within the wall construction with a metal plate to prevent plasterboard fixing screws from penetrating the cables.
- 7.7 Electrical cable in close proximity to gas pipe without been suitably protected. BS 6891:2015 (Specification for the installation and maintenance of low pressure pipework of up to 35mm on premises) states in section 8.4.2. that ' Where installation pipework is not separated from electrical equipment or cables by an insulating enclosure, dividing barrier, trunking or conduit, it shall be spaced as follows – at least 25mm away from electricity supply and distribution cables'. The Contractor should install a back plate to ensure the cable is routed away from the gas pipe.

8. CENTRAL HEATING ZONES

- 8.1 In accordance with 2010 Building Regulations wiring must be provided for 2-zones to a programmable room thermostat and standard room thermostat and wiring connections to zone valves.
- 8.2 The Contractor is to install zone thermostats provided by the Plumbing Contractor.

9. SMART CYLINDERS

- 9.1 To allow for the integration of a Smart cylinder, an additional RJ45 port must be added to the cylinder and fibre equipment locations, see Standard Detail DB-SD09-248A.
- 9.2 The Contractor must label the RJ45 ports in the cylinder and fibre equipment locations. This will identify the RJ45 ports, assisting the plumber and customer in making the required connections.

10. CONDUCTORS

- 10.1 Unless otherwise specified, all conductors shall be single core PVC insulated or twin and earth PVC insulated to BS 6004.
- 10.2 As part of the Approved Cable Initiative (ACI) all cable must be marked BASEC approved, the Company will not accept non BASEC approved cable. The Approved Cables Initiative is addressing the issue of unsafe, non-approved and counterfeit cable entering the UK marketplace. If you have information or concerns about a suspected faulty or counterfeit cable the organisation will test samples and if found to be unsafe details will be passed to relevant industry regulators and legislators. ACI can also provide guidance where appropriate to installers.
- 10.3 In accordance with the I.E.T. Regulations, the minimum conductor sizes to be used will be as follows:-

Lighting circuits	1 mm ²	
Ring main circuits	2.5 mm ²	
Immersion heater	2.5 mm ²	
Electric Showers up to 10.5kW	10mm ² - 16 mm ²	(Nb. MCB rating: Up to 9.5kW – 40A or 10.5kW – 50A) (Nb. 10mm ² up to 50m cable runs)
Cooker circuit	6.0 mm ²	
Hob circuit	6.0 mm ²	(Nb. Where a separate hob exists to the cooker.)
Lighting tiexibles	0.5 mm ²	
Meter tails	25 mm ²	
Main earth connection	16 mm ²	
Supplementary bonding	2.5 mm ²	(PROTECTED)
	4.0 mm ²	(UNPROTECTED)

- 10.4 Wiring shall be carried out in the loop in system. Joints are not permitted. A minimum length of 225mm of conductor or cable shall be left at each outlet for connection of the accessories or fittings.

11. CONSUMER UNITS

- 11.1 A consumer unit of the non-combustible type (as listed in the **SCHEDULE OF MATERIALS** section below) shall be mounted adjacent to the supply authority's equipment and suitably located for ease of access. The mounting height of the consumer unit must be such that the switches are between 1350mm and 1450mm above floor level in accordance with Approved Document P 6th April 2013. It must be complete with suitable single core tails for connection to the authority's meter and earthing conductor.
- 11.2 The equipment shall include a 100AMP rated main isolator and have capacity for either 10 or 16 ways as listed in the schedule of materials.

- 11.3 Combination RCCB/MCB units shall be to BS:4293 and to 'DIN' 57644 PTI/VDE 0664, PTI/5.81 CLI 1 as applicable to pulsating D.C. and superimposed D.C. earth fault currents. Combination RCCB/MCB units shall take up no more than 1 individual MCB way in the consumer unit.
- 11.4 Where a residual current device is to be included in the consumer unit the device must be an integral part of the consumer unit. Where the consumer unit is designed to feed circuits controlled by a 100AMP isolator and additionally circuits controlled by a residual current device the consumer unit will be of the factory assembled split busbar pattern to BS:5486.
- 11.5 Individual amperage ratings will be as listed in the schedule of materials.
- 11.6 Where applicable the RCDs shall hold an ASTA type test certificate.
- 11.7 Each unit shall be complete and factory assembled with the appropriate number of circuit ways and earthing terminals for protective conductors including equipotential bonding conductors. Attention is drawn to I.E.T. Regulations. Permanent labels shall be affixed to each consumer unit in accordance with I.E.T. Regulations.
- 11.8 The Contractor is to provide consumer unit installation schedules in accordance with BS:7671.
- 11.9 All consumer units are to be fitted with Locking Brackets to allow the units to be locked-off during the construction phase of the installation. Following which, the hole should be replaced by a bung to close the hole at handover stage. Refer to the Schedule of Materials for the part specification for the locking device.

12. DOWNLIGHTERS

- 12.1 Proprietary acoustic and fire rated downlighters are to be used in order to ensure the acoustic and fire integrity of the ceiling. The specified Deta products and codes are fully detailed within the "Schedule of Materials" incorporated within this document.
- 12.2 The Specification for installing Deta Downlighters is as follows;
- Maximum diameter hole in a 15mm ceiling plasterboard, must be no greater than 75mm.
- No more than 1 downlighter per 1sqm.
- Downlighters to be spaced a minimum of 600mm apart.
- Importantly, downlighters can now be positioned a minimum of 20mm from the nearest adjoining joist, this provides more flexibility for the electrician and accommodating specific customer requirements.
- 12.3 Where downlighters are fitted to ceilings with loft space above, the insulator separator (part of the downlight) allows loft insulation to be laid over the top of the fitting.
- 12.4 The downlight must be installed in accordance with Group Standard Details.

12.5 Remote gearboxes and transformers must be situated clear of the insulation, in accordance with the manufacturers fitting instructions.

13. ELECTRICITY SUPPLIES

13.1 A 230v 50HZ single-phase supply will be provided by the supply authority to each dwelling terminating at an agreed position. Details of the fault level and the external impedance's may be available from the supply authority. If such information is not available the tenderer must quote the value assumed in his calculation for the fault level. Including the external impedance, at the origin of each installation.

13.2 In addition, the assessed values of earth fault loop impedance shall be quoted in respect of each circuit and the clearance times as required by I.E.T. Regulations.

14. ELECTRIC VEHICLE CHARGING POINT (EVCP)

14.1 Supply and fit a EVCP in the locations detailed on the construction working drawings, all in accordance with the Company's preferred supplier(s), listed under **Group Suppliers** above and in accordance with the manufacturer's instructions.

14.2 EV Charging Point Minimum Requirements

- Minimum nominal rated output of 7kW
- Universal socket (untethered)
- Indicator lights or visual display to show charging status
- Minimum Mode 3
- Must have its own dedicated circuit
- Must be compatible with all vehicles which may require access to it

14.3 Electric vehicle charge point must be designed and installed in accordance with BS EN 61851, BS 7671 and the requirements of the IETs Code of Practice: Electric Vehicle Charging Equipment Installation.

14.4 Where possible underground cable should follow route of garden paving and must be provided from a metered electricity supply.

14.5 Configuration of the EVCP

- During the installation, it is the responsibility of the electrician to amend the default setting of 1 kW per hour charging speed to the designated required output for the individual site [as directed via the site management team]. Note this is typically 7kW to align with common planning conditions and upcoming Building Regulations
- Installation guidance should be followed in order to complete this step.

14.6 Commissioning of the EVCP

- Once the installation is complete, it is the responsibility of the Electrical Contractor to complete the on-line commissioning form and send it to supplier. This action then activates the Warranty and registers the EVCP
- The online form must be completed for each installed EVCP per plot.
- Failure to do so will result in the Warranty not being active and product failures being re-directed to the installing party rather than to supplier.

15. EXTERNAL LIGHTS

- 15.1 For compliance with Part L of the Building regulations that all external light fittings (Security, bulk head and/or lantern styles), where fitted, must be operated by means of a movement sensitive PIR photocell that will extinguish when there is sufficient daylight and when not required at night.
- 15.2 Where this movement sensitive PIR photocell is not incorporated (integral) within the external light fitting, then a remote one must be fitted.

16. FINAL CIRCUITS

- 16.1 Unless otherwise specified, two final circuits shall be installed for socket outlets and one lighting circuit for each floor. Two-way circuits for staircases shall be associated with lower floors in each case. Generally, BS 1363 socket outlets shall be installed on ring main final circuits, and all will be single pole switching.
- 16.2 Attention is drawn to the requirements for socket outlets, which may be utilised for portable equipment to be used outside the equipotential zone.
- 16.3 All sockets in homes must be protected by an RCD in accordance with the latest edition of the I.E.T. regulations. These also must be single pole switched.

17. MECHANICAL EXTRACT VENTILATION

- 17.1 Electrical Contractor to supply and install all mechanical extract ventilation of approved type as listed under the Schedule of Materials section, including D-MEV systems where indicated on the working drawings.
- 17.2 Where D-MEV is being utilised, switch should be located in a position whereby the customer is unable to switch off.
- 17.3 All sleeving and ducting to be installed at first fix stage with ventilation grilles connected at second fix.
- 17.4 Flexible ducting is only to be used for runs going through the joist webs. A rigid angled boss is to be installed as standard on the back of fans to prevent flexible ducting being pulled too tightly/squashed and reducing flow rate.
- 17.5 The maximum length of flexible duct should not exceed 1.5m, where the distance from the fan to the outside wall is greater than 1.5m rigid ducting must be installed.
- 17.6 All ducting bends must be formed using rigid ducting.
- 17.7 The standard specification for ductwork when parallel to 'I' joist spans is rigid ductwork all in accordance with the Group Supplier agreement for mechanical extractors/ductwork.
- 17.8 Rigid ducting to be installed through wall and should slope downwards away from the fan.
- 17.9 Connections of rigid ducts must be bonded, mechanically fixed and taped (glued, screwed and taped) to ensure no air leakage.

- 17.10 Connection of duct to fans, ventilation tile, fixed wall grille or air brick to be silicon sealed and taped to ensure no air leakage.
- 17.11 All ducting in unheated roof voids is to be insulated.
- 17.12 Ducting through external walls should be built-in with appropriate sleeve in accordance with the preferred Group Supplier listed above as brickwork/blockwork proceeds.
- 17.13 Where Building Regulations require the protection against fire passage, the use of rigid ducting is required in accordance with the materials noted in Schedule of Materials provided by the preferred Group Supplier noted above or where provided in the enquiry documentation.
- 17.14 Following completion of the works the Electrical Contractor is to complete commissioning of the extract ventilation system and provide a commissioning certificate stating the achieved extract rates for trickle and boost settings, for each individual property, compared to the stated values on the working drawings. **NB** Air flow measurement must be conducted with a powered flow hood or vane anemometer with a proprietary hood. The anemometer should have a vane head diameter of at least 100mm. The hood must be square/rectangular (not circular). Hoods must be placed centrally over the fan or terminal being measured. Equipment used must have been UKAS calibrated within the past 12 months.
- 17.15 CoolBox 50 mechanical extract systems are required to be installed to rooms located adjacent to low-level roofs. Comprising of, ACM 150mm in-line Fan set at medium speed on acoustic mat, 150mm diameter insulated flexible duct, 150mm to 125mm diameter Y-piece duct, 125mm diameter insulated acoustic valves, 125mm diameter room ventilation terminals in white with adjustable valve commissioned at 25 litres/second, all necessary connectors, mounting fixings and bends as required to roof or wall terminal, as shown on detailed Working Drawings. A passive, fresh air, inlet is required where more than 1 room has a CoolBox 50 overheating extract installation. Where the ACM 150mm in-line Fan is installed and ducted through an unheated roof space a condensation is to be installed by the Electrical Contractor. The two lengths of 125mm insulated acoustic ducting, running between the Y-piece duct and the two 125mm diameter room ventilation terminals, must be identical in length and at least 1500mm long.
- 17.16 Unless specifically noted on the manufacturers installation drawing, Condensation Traps are required to be supplied and installed where insulated ducting runs vertically through the unheated roof space. The Electrical Contractor is to provide and install the proprietary boss to the ventilation duct and connect to 21.5mm straight through trap and drain at a minimum slope of 1:40 to the SVP in readiness for the Plumbing Contractor to install to the SVP.

18. PLASTIC CONDUIT

- 18.1 Plastic Conduit must be installed to protect electrical cables running over the surface of exposed (non-plaster-boarded) Brick and Block walls, where wiring is indicated on the working drawings, including, but not limited to, garages.
- 18.2 This shall be of high impact gauge PVC in accordance with BS 4607 and shall be installed in accordance with the manufacturer's recommendations.
- 18.3 When installing the 'hockey stick' plastic conduit for meter boxes the Contractor is to supply and install a clip, to ensure the hockey stick is fixed vertically to the outside wall.

19. PROTECTIVE CONDUCTORS

- 19.1 The latest edition of the I.E.T. Regulations places special significance on the installation of protective conductors and no deviation from the requirements will be permitted.
- 19.2 The Contractor will be required to submit documentary evidence to confirm that the requirements have been complied with to satisfy the shock and thermal constraints, particular attention is drawn to I.E.T. Regulations and Appendices.

20. SMOKE DETECTORS

- 20.1 Automatic detection and alarm system to meet the required standard but a minimum Grade D2 Category LD3 system to BS 5839-6 unless an alternative grade and category is specified on the working drawing. Certification will be required to be submitted by the Contractor as per BS 5839-6.
- 20.2 All detectors must be 230v mains supply with battery backup and fully integrated to meet the requirements of the "Smoke Detector Act 1991", BS 5446 part 1, BS 5839-6 circulation areas and current Building Regulations (section B1 Means Of Escape).
- 20.3 Where smoke detectors are not specified on working drawings these must be of the optical type to the ground floor or, first floor if the house type has a first floor kitchen, linked with each further alarm, one at each floor level as indicated on working drawings.
- 20.4 Combined smoke and heat alarms must be installed (including in roof spaces) where solar PV, inverters, batteries, or boilers are installed. A wireless test switch is to be installed the top floor landing area.
- 20.5 All detectors must be wired within the lighting circuit to prevent them from being disabled separately to other circuits. All detectors must be inter-connected and be located a minimum distance of 300mm away from a wall.

21. CARBON DIOXIDE DETECTOR

- 21.1 A mains operated Carbon Dioxide detector must be installed to locations indicated on working drawings in Scotland only, in accordance with the model noted in the Schedule of Materials.

22. FIRE PROTECTION

- 22.1 Fire protection must be supplied and fixed to flush-mounted accessories (including switches, sockets, flex outlet plates, television, data and telephone points etc.) by the Contractor in plasterboard partitions, which enclose protected entrance halls/protected stairways within private parts of dwellings.
- 22.2 Electrical sockets must be installed in accordance with Standard Detail no: DB-SD09-019 "electrical sockets + FP", dated December 2017. To incorporate a fire proof insert to back boxes as per locations on working drawings.
- 22.3 Electrical sockets Integrated Dishwashers must be installed adjacent to these appliance

locations in accordance with Barratt Standard Details. Barratt Standard Details are available from the Divisional Commercial Department or Site Offices upon request.

- 22.4 Installation will require you to remove the face plate of the electrical socket box, mould the pre-formed putty pads into the back of the box and around the cables and secure the face plate.
- 22.5 Electric Built-in Ovens must be hard wired.
- 22.6 When installing electrical sockets, avoid locating electrical sockets back to back on compartment walls, however, where this is necessary, putty pads are to be installed between them.

23. SOLAR PV

- 23.1 Where the inverter is located in the loft space, then the Solar PV Contractor will provide DC cabling from the PV array to an inverter within the plot and is responsible for connection and testing. Where the inverter is located elsewhere or DC strings need to be buried in the walls, this is to be installed by the Electrical contractor at first fix. If the inverter is located outside the loft space, the Contractor is required to mechanically protect buried DC cables with steel containment complying to wiring regulation 522.6.204 or use an armoured cable suitable for DC use, for example PV Ultra Steel Wired Armoured (SWA) cable for connection and testing by the Solar PV Contractor.

23.2 House

The Contractor is to provide the 6mm 2 core and earth cable to be run from the mains board (0.5m left coiled in the mains board) to the loft space making sure this is run to the closest vertical truss to the loft hatch with 2m coiled above the insulation. For all 2½ storey houses, a 4 core SWA cable must be routed from the inverter cupboard to the loft space with 2m coiled above the insulation and 0.5m coiled within the inverter cupboard for the connection by the Solar PV Contractor.

Supply and install 16A double pole, Bi-directional B Curve RCBO Type A.

All in accordance with Group Standard Details.

23.3 Apartments – Depending on size of solar PV array

The Contractor is to provide the suitably sized 2 core and earth cable to be run from the mains board (0.5m left coiled in the mains board) to inverter location.

Supply and install suitably sized RCBO.

All in accordance with Group Standard Details.

24. STATUTORY REQUIREMENTS

- 24.1 The Contractor shall comply with all statutory regulations of government e.g. Health and

Safety Act, local authority, electrical supply authority, fire prevention office or any other interested parties.

25. SUPPLY CONNECTION

- 25.1 Upon agreed completion of an installation the Contractor shall supply the electricity authority with formal notice of completion and attend the final connection up of the installation.
- 25.2 Electrical Contractors are warned to comply with I.E.T. Regulations, which states that particular attention shall be given to the presence and shall be isolated so that they are not damaged by the test voltage.

26. TELEVISION

- 26.1 The Contractor shall supply and install CT100 Co-Axial cable from the location of the media plate or Co-Axial outlet, as noted in the Sales and Construction Specification, to the roof void with 5m of cable left in a coiled loop to allow future installation of a Television aerial (by the purchaser).
- 26.2 Where the purchaser has paid for additional locations for Television aerials, these must also be wired with CT100 Co-Axial cable to the roof void.
- 26.3 Where satellite TV is required to Apartments the Contractor shall supply and install a communal satellite dish and wire accordingly to each apartment with CT100 Co-Axial cable.
- 26.4 For the connection of Sky and Virgin Media Plates. The Contractor must refer to the latest requirements, detailed in the Sky and Virgin pre-wiring specifications.

27. EMERGENCY LIGHTING TO APARTMENT COMMUNAL AREAS

- 27.1 Certification will be required to be submitted by the Contractor/s including details of the photometric data, in accordance with BS 5266-1

28. TESTING

- 28.1 The full requirements of the I.E.T. Regulations, including all Appendices, shall be complied with unless it is agreed that circumstances exist which prevent this, E.G. non-availability of suitable commercially available testing equipment.
- 28.2 In accordance with the I.E.T. Regulations, including all Appendices, inspection and testing will be carried out to ensure that:
- (i) the external impedance and fault level at the origin of the installation do not obviate the design proposals,
 - (ii) insulation to earth and between conductors meets requirements,
 - (iii) earth loop impedance satisfies the design requirements,
 - (iv) all single pole switches are in the phase conductors,
 - (v) supplementary bonding conductors are adequately installed and connected,

- (vi) polarity is correct,
- (vii) ring main circuits are currently installed,
- (viii) residual current circuit breakers operate as required and that the manufacturer's instructions are clearly displayed regarding the periodical testing procedures,
- (ix) air flow test measurements and checklists for extractor fans need to be carried out as per the domestic ventilation compliance guide 2010 issued to building control inspectors.

28.3 The results of all tests shall be recorded and signed using the suggested type of certificate in accordance with the I.E.T. Regulations.

28.4 The completion and inspection certificates must be provided to the Company and should be forwarded to the Surveying Department on completion.

29. AIR SOURCE HEAT PUMPS (where specified)

29.1 The Electrical Contractor must work closely with the Plumbing Contractor to ensure that all electrical installations including sockets and controls are in accessible locations.

29.2 The Electrical Contractor must work in conjunction with the Plumbing and Heating Contractor to ensure the wiring locations are appropriate and all necessary connections are completed. All items supplied and installed by the Plumbing and Heating Contractor requiring connection to either mains power or to data points, including the heating programmer, heating control units, Hot Water Cylinders, and Air Source Heat Pump.

29.3 Supply and install external Isolator Switch for the ASHP. The switch must be IP65 and EN60947 compliant. The isolator must be placed outside of the R290 space requirements zone and the service and ventilation requirement zone.

29.4 Wiring schematics must be followed at the first fix stage to ensure successful installation of the ASHP and Hot Water Cylinder at the second fix stage.

29.5 All external wiring must adhere to the electrical standards for outdoor equipment. It must be fixed black PVC coated Class O weatherproof and UV stable external insulation.

29.6 The Electrical Contractor must install the Control Panel and Thermostat according to the manufacturer's guidance.

30. WASTE REMOVAL AND CLEANING OUT

30.1 The Contractor must ensure that waste from their work activities is minimised and materials are reused where practicable.

30.2 Waste generated should be segregated and disposed of into the relevant tipper skips, it is the responsibility of the contractor to request appropriate and sufficient tipper skips to be sited in close proximity to their working area. If cross contamination of skips is observed and is as a result of the Contractor's inappropriate management of waste, a contra-charge will be applied.

- 30.3 All plots, garages and scaffolds must be cleaned by the Contractor upon completion of the works and the area left free of materials or debris created by the works.
- 30.4 Upon completion of the contract (or defined sections thereof), the Contractor will clear from site all stored materials, equipment, site accommodation, etc., no longer required, without delay.
- 30.5 We reserve the right to contra-charge the Contractor for the cost of excessive removal of the Contractors' waste, including waste resulting from damage to materials in their care, plus an administration fee of 20%.

31. WIRE ONLY WORKS

- 31.1 The Contractor is to include the wiring only of electric showers – to be supplied and installed by the Plumbing and Heating Contractor.
- 31.2 The Contractor is to include the wiring only of all heating controls – to be supplied by the Plumbing and Heating Contractor.
- 31.3 The Contractor is to include the wiring only of the Air Source Heat Pump – to be supplied by the Plumbing and Heating Contractor.

32. SCHEDULE OF MATERIALS

Consumer Units – Hager Ltd

Note: All consumer units are to be comply with BS7671:2018 18th Edition from the 1st of January 2019

Part Number	Specification Addition – 18 th Edition Compliant Consumer Units (D30 & D50)
BDC14SPDHBM	14 way Hi Integrity C/W 2 X 100a Type A RCCBs with Surge Protection
BDC24SPDHBM	24 way Dual Row Hi Integrity C/W 2 X 100a Type A RCCBs with Surge Protection
BDC14SPDHBMK	14 way Hi Integrity C/W 2 X 100a Type A RCCBs with Surge Protection & Knockouts
BDC24SPDHBMK	24 way Dual Row Hi Integrity C/W 2 X 100a Type A RCCBs with Surge Protection & Knockouts
BDC14FSPDHBM	14 way Hi-integrity "flush" c/w 100A sw & 2x100A Type A RCCB's with Surge Protection
BDC24FSPDHBM	24 way Hi-integrity "flush" c/w 100A sw & 2x100A type A RCCB's with Surge Protection
MTN 106-163	Type B MCB's 6KA

ARM906U-932U	MCB with dangerous arc detection 1M B-curve 6kA
MTN106	6 AMP TYPE MCB
MTN110	10 AMP TYPE B MCB
MTN116	16 AMP TYPE B MCB
MTN120	20 AMP TYPE B MCB
MTN132	32 AMP TYPE B MCB
MTN140	40 AMP TYPE B MCB

In addition to the products detailed above, Hager has a further range of consumer units and devices for individual plot requirements, which will be specific to some developments. This includes surge or overload protection where applicable.

Part Number	Locking Device for Consumer Units
VMHBL	Bag of 6 Locking Brackets
VSRHBL	Bag of 6 locking brackets (Flush units only)

Part Number	EV Car Charging
ADA990U	1P+N 40A 30mA RCCB A Class (required for EV charging)

Mechanical Ventilation – Vent Axia Ltd.

Stock Ref (to be used when ordering by Contractor)	Vent Axia Product code	Description
412260BDW	CoolBox 50	ACM 150mm fan motor, valves, Y-piece, ducting, acoustic mat and backdraught shutters, Approved Document F & L Compliant
		FLEXIBLE DUCTING
427569BDW	100mm ø PVC flexible duct x 6m (Grey)	
407059BDW	100mm ø Insulated flexible duct x 1m	
427570BDW	125mm ø PVC flexible duct x 6m	
		100 NON INSULATED
5108250BDW	100mm ø Round Ducting 2 Metre Length	
372006BDW	100mm ø Connector	
372005BDW	100mm ø 45° Bend	
372004BDW	100mm ø 90° Bend	
		125 NON INSULATED



496155BDW	120mm ø Round Ducting 1 Metre Length
478163BDW	125mm ø Round Ducting 2 Metre Length
428633BDW	125mm ø Connector
441657BDW	125mm ø 45° Bend
427360BDW	125mm ø 90° Bend
	TERMINATIONS
370328BDW	100mm ø Louvre Grille -Terracotta
403569BDW	125mm ø Louvre Grille - Terracotta
	ACCESSORIES
561704BDW	60-110 Worm Drive Clips
561707BDW	60-215 Worm Drive Clips
447113BDW	Screw 4.2X13 Flange S-Drill Magnetic S-Steel (Qty 100 Per Box)
372081BDW	Galvanised Banding 10m
371565BDW	White Silicone Sealant Low Modulus MPP/C/HESF/0855
370218BDW	Aluminium Duct Tape 30m
563516BDW	Condensation Trap

Door Entry systems

Part Number	Description
BAV1 (1 Apartment) to BAV12 (12 Apartments)	Video Building Kit - Surface Wall Mounted Panel - Audio & Video , Ikall Functional - Inc.: Entrance Panel, PSU & 1 x Mini Handset monitors (replace the highlighted number by the number of apartments in block).
BAA1 (1 Apartment) to BAA12 (12 Apartments)	Audio 2 wire kit - Surface Wall Mounted Panel - Audio only, Ikall Functional - Inc: Entrance Panel, PSU & 1 x Mini Audio Handset (replace the highlighted number by the number of apartments in block).
1224A Switcher	1224A SWITCHER + 1200 PSU - USED WHEN 2 OR MORE ENTRANCE PANELS ARE USED. 1 REQUIRED PER ADDITIONAL ENTRANCE PANEL.
1200 PSU	N.B. A switcher is need when linking entrance panels on the same system
BAPA 8	Surface Wall Mounted video and audio only Panel - Ikall functional with 8 buttons inc. 1595 power supply
BAPA 10	Surface Wall Mounted video and audio only Panel - Ikall functional with 10 buttons inc. 1595 power supply
BAPA 12	Surface Wall Mounted video and audio only Panel - Ikall functional with 12 buttons inc. 1595 power supply
1404 Switcher	1404 SWITCHER - USED WHEN 2 OR MORE ENTRANCE PANELS ARE USED. 1 REQUIRED PER ADDITIONAL ENTRANCE PANEL.
BAPV 8	Surface Wall Mounted video and audio only panel – Ikall functional with 8 buttons inc. 1210 power supply
BAPV10	Surface Wall Mounted video and audio only panel – Ikall functional with 10 buttons inc. 1210 power supply
BAPV 12	Surface Wall Mounted video and audio only panel – Ikall functional with 12 buttons inc. 1210 power supply
BA2708W - Mini audio	Internal Audio Only handsets (Mini Handset)
BA6701W - Mini Handset	Internal Audio & Video handsets (Mini monitor)

Electrical Accessories – Deta Electrical Co Ltd

Deta Slimline White Wiring Accessories

Part Number	Description
S1200	1 Gang Blank Plate
S1202	1 Gang 1 Way 10a Plate Switch
S1203	1 Gang 2 Way 10a Plate Switch

Part Number	Description
S1204	2 Gang 2 Way 10a Plate Switch
S1205	3 Gang 2 Way 10a Plate Switch
S1206	1 Gang 13a Unswitched Socket
S1207	1 Gang 13a Switched Socket
S1209	2 Gang 13a Switched Socket
S1215	25a Cable Outlet
S1217	45a Cable Outlet
S1244	4 Gang 2 Way 10a Plate Switch
S1246	Intermediate Switch
S1247	Triple Pole Fan Isolator
S1264	Single Co-Axial Tv Outlet Isolated
S1299	2 gang switched and 3 USB charging ports
S1300	86 x 86 45a Dp Red Switch
S1301	146 x 86 45a Dp Tall Red Switch
S1302	45a Cooker Control Unit with Neon Power Indicator
S1305	115-230v Shaver Socket
S1325	2 Gang 2 Way 10a Intermediate Switch
S1352	Single Master Telephone Outlet
S1353	Single Secondary Telephone Outlet
S1360	13a Unswitched Connection Unit
S1370	13a Switched Spur
S1371	13a Switched Spur With Neon Power Indicator
S1373	13a Dp Switch With Flex Outlet And Neon Power Indicator
S1422	1 Gang Data Plate
S1424	2 Gang Data Plate
S1429	Blank Plate
S1390	20a Dp Switch
S1390WH	20a Dp Switch Engraved "Water Heater"
S1391	20a Dp Switch With Neon Power Indicator
S1987	Barratt Lounge Multi Media plate complete with modules Quadplexer, Co-Ax female and BT secondary built in, plus 4 blank modules
S19887	As above with Co-ax male and BT secondary built in, plus 6 blank modules

Data Grid Covers

G3301	1 Module Grid Plate Slimline White Cover
G3302	2 Module Grid Plate Slimline White Cover

G3303	3 Module Grid Plate Slimline White Cover
G3304	4 Module Grid Plate Slimline White Cover
G3305	6 Module Grid Plate Slimline White Cover
G3306	8 Module Grid Plate Slimline White Cover
G3421	1 Module Grid Plate Metalclad Cover
G3422	2 Module Grid Plate Metalclad Cover
G3423	3 Module Grid Plate Metalclad Cover
G3424	4 Module Grid Plate Metalclad Cover
G3425	6 Module Grid Plate Metalclad Cover
G3426	8 Module Grid Plate Metalclad Cover

Note: for all Décor Grid product codes add CH for polished chrome to end of product code i.e. G3426CH

Deta Traditional Polished Chrome – Décor Range

Part Number	Description
SD1200	1 Gang Blank Plate
SD1203	1 Gang 2 Way 10a Plate Switch
SD1204	2 Gang 2 Way 10a Plate Switch
SD1205	3 Gang 2 Way 10a Plate Switch
SD1207	1 Gang 13a Switched Socket
SD1209	2 Gang 13a Switched Socket
SD1360	13a Unswitched Connection Unit
SD1370	13a Switched Connection Unit
SD1371	13a Switched Spur With Neon Power Indicator
SD1373	13a Dp Switch With Flex Outlet And Neon Power Indicator
SD1244	4 Gang 2 Way 10a Plate Switch
SD1299	2 Gang switched and 3 USB charging ports
SD1300	86 X 86 45a Dp Switch
SD1301	146 X 86 45a Dp Tall Switch
SD1302	45a Cooker Control Unit With Neon Power Indicator
SD1305	115-230v Shaver Socket
SD1390	20a Dp Switch
SD1391	20a Dp Switch With Neon
SD1264	Single Co-Axial Tv Outlet Isolated
SD1246	Intermediate Switch
SD1247	Triple Pole Fan Isolator
SD1352	Single Master Telephone Outlet
SD1353	Single Secondary Telephone Outlet

Part Number	Description
SD1422	1 Gang Data Plate
SD1424	2 Gang Data Plate
S1217	45a Cable Outlet
SD1977CH/SC/ CH/SS	Barratt Lounge Multi Media Plate complete with modules Quadplexer , Co-ax female BT Secondary and 2 blank modules (new stainless steel finish)
SD1978SC/CH/ SS	Barratt Lounge Multi Media Plate complete with modules Co-Ax male, BT Secondary and 4 blank modules
S1440	Quadplexer Module (Sky x2, TV + Radio to apartments only)
S1435	Co-ax male
S1431	BT Secondary
S1434	Cat6 Module
S1429	Blank Plate (x 3 houses and x1 apartments)

Data Ceiling Accessories Including Bulkheads

Part Number	Description
S106/6T2	6" Safety Pendant Set with decorators cover
S96/HO/T2	Safety Batten Holder with decorators cover
L1021CH	Chrome Bulkhead Light
L1021WH	White Bulkhead Light
V1297	6a 1 Way Ceiling Switch

Data Back Boxes

Part Number	Description
DB162	25mm Flush Metal Single Back Box
DB163	25mm Flush Metal Double Back Box
DB167	47mm Flush Metal Single Back Box
DB168	47mm Flush Metal Double Back Box
DB171	6/8g Flush Metal Grid Back Box
DB184	40mm Media Plate Metal Back Box

Deta Multigrid items for Appliance Control Panels

Part Number	Description
G3511	20a Dp Switch
G3544	Blank Module
G3401	1 Module Grid Yoke
G3402	2 Module Grid Yoke
G3402	3 & 4 Module Grid Yoke
G3560	20a Dp Switch - Cooker Hood
G3556	20a Dp Switch - Dishwasher
G3553	20a Dp Switch - Extractor Hood
G3562	20a Dp Switch - Fridge Freezer
G3557	20a Dp Switch - Fridge
G3558	20a Dp Switch - Freezer
G3561	20a Dp Switch - Microwave
G3555	20a Dp Switch - Tumble Dryer
G3554	20a Dp Switch - Washing Machine

Deta Smoke Alarms

Part Number	Description
1163	230v Ac Mains Optical Alarm
1165	230v Ac Heat Alarm
1171	230v Ac Combined Smoke and Heat Alarm with 10 year lithium sealed battery
1190	Wireless Test Switch for remotely located alarm.

Deta Carbon Dioxide Detector

Part Number	Description
1142	Carbon Dioxide Detector

Delta Downlighters

Part Number	Description
L1701CH3	LED Low Energy Fire Rated IP65 Dimmable Downlight - Chrome With LED Lamp
L1701SC3	LED Low Energy Fire Rated IP65 Dimmable Downlight - Satin Chrome With LED Lamp
L1701WH3	LED Low Energy Fire Rated IP65 Dimmable Downlight - White With LED Lamp
L1701CH4	LED Low Energy Fire Rated IP65 Dimmable Downlight - Chrome With LED Lamp
L1701SC4	LED Low Energy Fire Rated IP65 Dimmable Downlight - Satin Chrome With LED Lamp
L1701WH4	LED Low Energy Fire Rated IP65 Dimmable Downlight - White With LED Lamp

Note – After WH/CH/SC the reference ‘3’ refers to warm white lamp type 2800K brightness and ‘4’ refers to cool white lamp type 4000K brightness.

TRADE SPECIFICATION**ELECTRICAL**

This Specification Agreement relates specifically to the Company's development at
.....

I confirm that I have read and understood the foregoing Specification and any necessary associated documentation referenced, such as standard specifications, drawings or quoted details and that my prices include for all items contained therein and will "Remain Fixed" for a period of:..... as outlined in the Enquiry letter.

SIGNED:

FOR AND ON BEHALF OF:

.....

DATE:

N.B. The Contractor is to sign this Agreement and return it with their Quotation. Any prices received without this Agreement will be excluded from consideration.

Revised: Rev AU – 1 January 2025