

**C.L.A.W. ELECTRICAL SPECIFICATION SECTION ED DATA / TELECOMMUNICATIONS
INSTALLATIONS
2008 ISSUE**

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ED.01.0 GENERAL

ED.01.01 The whole of the work detailed in this section shall be carried out in compliance with BS.6701:2004, BS 4505-1:1981, BS ISO 2110:1989, AMD 7165:1992, BS 7083:1996, BS ISO/IEC 2382-25:1992, 96/216286 DC, BS EN 50173:2007, 01/637057 DC.

ED.02.0 MATERIALS

ED.02.01 Due to constant technology changes any material and equipment offered, as alternatives to the Specification, shall be of the highest quality, compliant with the current British Standards, and be as far as practicable of British or E.E.C. manufacture and subject to the approval of the Contract Administrator.

ED.02.02 Orders for all materials required for the execution of the contract shall be made at such a time to ensure delivery to site before such items are actually required to avoid any possible delay in the progress of the works.

ED.03.0 SPECIALIST INSTALLER

ED.03.01 The Electrical Services Installer shall engage the services of a specialist IT networking installer to assist with the pre-documentation, carry out the wiring, termination and all testing.

ED.03.02 Within this section any reference to the Electrical Services Installer or the specialist IT networking installer shall be taken to mean the same person.

ED.04.0 DOCUMENTATION PRIOR TO INSTALLATION

ED.04.01 Prior to commencement of the installation of the data / telecommunication cabling the Electrical Services Installer shall submit for approval the schedule of cables to be laid complete with all lengths and identification notation.

ED.04.02 The Electrical Services Installer shall ensure that all horizontal cable lengths shall not exceed 90 metres from patch panel to outlet N.B. joints in cables **will not be accepted**.

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ED.05.0 INSTALLATION OF BACKBONE CABLING

- ED.05.01 The Electrical Services Installer shall supply and install Backbone cabling where indicated on the drawings with all cabling from the central patch panel in the Main Distribution Cabinet to the patch panels in the Intermediate Distribution Cabinets.
- ED.05.02 Backbone Cables shall be Single Mode, Multimode Fibre, UTP Category 6 or UTP Category 5e as specified in Section EL of the Specification Document.
- ED.05.03 All cables shall be installed in wire basket in accordance with Section EC of the Specification Document. Care shall be taken at bends and Tees to avoid undue cable stress.
- ED.05.04 Care shall be taken to ensure that bends do not exceed 8 times the cable overall diameter as a minimum radius.
- ED.05.05 Cables shall be fixed to the wire basket by means of Velcro straps.

ED.06.0 INSTALLATION OF HORIZONTAL CABLING

- ED.06.01 Horizontal cables shall be installed **strictly** in accordance with EIA/TIA – 568B standards for horizontal cabling and all cables shall be properly labelled at each end to enable ease of identification.
- ED.06.02 All terminations are to be effected and tested strictly in accordance with the aforementioned standards.
- ED.06.03 Horizontal Cables shall be UTP Category 6 or UTP Category 5e as specified in Section EL of the Specification Document.
- ED.06.04 All cables shall be installed in wire basket and plastic conduit together with plastic dado trunking, as specified in Section EL of the Specification Document, in accordance with Section EC of the Specification Document.
- ED.06.05 Care shall be taken over bends and Tees to avoid undue cable stress. **Never** pull / stretch Category 6 or Category 5e cables with more than 25 pounds (3.456kgs) of force.
- ED.06.06 Care shall be taken to ensure that bends do not exceed 4 times the cable overall diameter or 25mm as a minimum radius.
- ED.06.07 The dado trunking shall be supplied with radius bends to ensure correct installation and shall be complete with emc cable dividers

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ED.06.0 INSTALLATION OF HORIZONTAL CABLING (Cont'd)

- ED.06.08 Care shall be taken to ensure that bends do not exceed 4 times the cable overall diameter or 25mm as a minimum radius and that conduits do not exceed 40% capacity.
- ED.06.09 Where main cable runs are located above suspended ceilings or below floors, basket or tray fixed to the building structure will be used. This will also apply to cable run between building floor levels. Under floor installations in particular must be adequately protected from attack by vermin. Baskets / trays should not be more than 60% full initially. Under no circumstances will cables be loose-laid.
- ED.06.10 Cables shall be fixed to the wire basket by means of Velcro straps in such a manner to avoid 'pinching', provided at 0.5m intervals on vertical runs and 1.5m intervals on horizontal runs.
- ED.06.11 During installation the Electrical Services Installer shall ensure that no undue stress is placed upon any cables. Cables shall not be left coiled trailing from cable baskets on to the floor where they may be trodden upon or otherwise damaged. Any cable found to be in a degraded condition will be rejected.

ED.07.0 INSTALLATION OF PATCH PANEL CABINETS

- ED.07.01 The patch panel cabinet/s shall be sited as indicated on the contract drawings, complete with patch racks and mounting racks, cable supports, power outlets and fan together with glass door and shall be wall mounted or floor mounted specified in Section EL of the Specification Document.
- ED.07.02 No substitution of materials or equipment specified in Section EL of the Specification Document will be permitted except by the written consent of the Contract Administrator.

ED.08.0 INSTALLATION OF DATA OUTLETS

- ED.08.01 Data outlets shall be RJ 45 single or double gang as indicated on the contract drawings or as specified in Section EL of the Specification Document. Where single gang outlets are specified the Electrical Services Installer shall supply and install outlet plates suitable for later modification to dual outlets

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ED.08.0 INSTALLATION OF DATA OUTLETS (Cont'd)

ED.08.02 Each individual cable shall be marked with an identification ferrule securely attached to the outer sheath of the cable 25mm from the termination at each end of the cable.

ED.08.03 The annotation of the cable identities shall be agreed with the Contract Administrator at the submission of the working drawings.

ED.08.04 The 2 wires in a single pair shall not be untwisted for more than 15mm to make a connection (the twists are critical to cancel out interference between the wires).

ED.08.05 Following termination all outlet plates shall be labelled with the agreed outlet number as Clause ED.04.01 of the Specification Document.

ED.09.0 TESTS ON COMPLETION

ED.09.01 All tests, as laid down in the appropriate standards previously referred to, shall be carried out in the presence of the Contract Administrator.

ED.09.02 All test instruments for the purpose of testing shall be provided by the Electrical Services Installer.

ED.10.0 TEST CERTIFICATES

ED.10.01 On completion of the tests, all test certificates shall be provided, both in printed and electronic formats, by the Electrical Services Installer to the Contract Administrator.

ED.11.0 TUITION OF STAFF

ED.11.01 Allowance shall be made for the instruction of Employers' staff in the operating of the equipment, and the presence of the Employers' staff may be arranged throughout the Contract Administrator.

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ED.12.0 SERVICE AND MAINTENANCE MANUALS

ED.12.01 The Telecommunications Installer shall supply three hard cover 4 ring bound manuals containing the following information:-

1. Description of the installation itemising all the equipment used together with identifying catalogue numbers.
2. Description of how the equipment operates will full design details, together with contacts etc in the case of malfunction of the equipment.
3. As installed record drawings indicating the size and routes of all cables together with the location of all equipment.
4. As the aforementioned information contained on CD-ROM.