

S P E C I F I C A T I O N

No. 2906

For The Supply, Installation and Commissioning of-

EXIT AND EMERGENCY LIGHTING

At-

VARIOUS SCOUT HALLS

For-

**SCOUT ASSOCIATION OF AUSTRALIA
NSW BRANCH
SYDNEY NORTH REGION
2 ELLIS STREET
CHATSWOOD NSW 2067**

GENERAL DESCRIPTION OF INSTALLATION

The work consists of upgrading existing scout halls to comply with the current requirements of the Building Code of Australia, on a prescriptive or performance basis as assessed by the Scout Association's Building Code Consultant. Refer individual Fire Safety Reports.

SCOPE OF WORK

The electrical services shall consist of but not be limited to the following:

- Provision of new exit and emergency luminaires.
- Inspection and maintenance of existing exit and emergency luminaires.
- Certification of the exit and emergency lighting system upon completion.
- Provision of operating and maintenance manual and logbook.
- Instruction of scouting personnel in testing of the exit and emergency lighting system.

LOCATION

The Scout Association of Australia will provide the location plans of new and existing exit and emergency luminaires for each individual site, based on the FSR for each Hall.

STANDARDS, RULES AND REGULATIONS

The work shall be carried out strictly in accordance with the requirements of any properly constituted Authority having jurisdiction over the works, except where this Specification lays down standards and methods of work over and above such requirements.

The work shall conform to all appropriate current Australian Standards with emphasis on the following Standards:

AS/NZS 2293.1:1998 Emergency evacuation lighting for buildings
Part 1: System design, installation and operation

AS/NZS 2293.2:1995 Emergency evacuation lighting for buildings
Part 2: Inspection and maintenance

AS/NZS 3000:2000 Wiring rules

Under no circumstances shall work be carried out contrary to Standards and Authority's requirements. If questionable work is so specified seek approval before proceeding.

ELECTRICAL SAFETY

It is not a requirement of the contract that work be carried out on live switchboards. Should such work be carried out, assume all responsibility unless written approval has been obtained.

INTERRUPTION OF SUPPLY

All work in connection with the existing services shall be carried out at times to be agreed upon in order that interruption may be carried out with a minimum of inconvenience to the users of the Hall.

Confer with all affected parties whose work may be so affected.

Carry out work requiring interruptions expeditiously so that duration of interruptions is reduced to a minimum.

WIRING

Wiring shall be carried out using approved 250V grade PVC/PVC insulated and sheathed conductors of 1.5 sq mm minimum size.

Conductors shall be increased in size for reason of route change, method of installation, voltage drop and/or de-rating in accordance with AS.3008 to ensure nominated current ratings are achieved at all switchboards.

All PVC insulated cables must comply with AS.3147 and shall be unconditionally guaranteed by the manufacturer.

In all wires and cables used, the insulation/sheathing of each phase, neutral and switch wire shall be distinctively and uniformly coloured as follows:

- Actives: Red
- Neutral: Black
- Earth: Green/Yellow

Wires in which kinks or abrasions have occurred will be rejected.

The jointing of conductors shall **not** be permitted.

The spacing between Power and Data/Telephone cabling shall be not less than that specified in AS.3080. Any cross over of Power and Data cabling shall be at right angles.

All wiring is to be concealed where possible.

Wiring which can not be concealed shall be installed in a low profile white plastic ducting material. The ducting shall be concealed screw fixed and run parallel to building members along the most unobtrusive route as dictated by site.

Locate ducting only in locations where not subject to damage.

Support cables and cable enclosures at maximum intervals of:

- Cables likely to be disturbed: 0.3m
- Horizontally: 2.0m
- Vertically: 0.5m

Provide a separate active and neutral conductor to each exit and emergency luminaire emanating from the adjacent lighting sub-circuit and bypassing local switching and contactors.

Carry out insulation and continuity tests of the wiring during the progress of the work.

INSTALLATION

All materials, plant and equipment supplied shall be new and of first quality and installed to a high standard of workmanship.

Allow for and include all labour, and materials required for the installation and mounting of all fittings in accordance with the types indicated.

The work shall be complete in all respects. Fittings and accessories necessary for the proper functioning of the installation are to be supplied and installed. Such fittings, etc shall be of approved type.

All fixings shall be carried out using approved fasteners. Fixing shall be adequately sized to suit weight, size, shape and location of equipment fixed thereto.

Holes for plugs and masonry anchors shall be drilled 6mm deeper than required for plug or anchor to allow stud projection.

Ensure that fittings hang in a true and vertical plane and are firmly attached to walls or ceilings.

Light fittings shall be fixed in an approved manner using proprietary supports. Supply and install suitable timber noggings, roses, metal brackets, battens, packing material or other approved methods of fixing which will carry the weight of the fitting.

Surface mounted fittings shall be provided with 2 fixings at each end of the fitting.

EXISTING EXIT AND EMERGENCY LUMINAIRES

Existing exit and emergency luminaires are to be reused.

The existing light emitting, light reflecting and diffusers of exit and emergency luminaires are to be cleaned as per AS/NZS 2293.2 APPENDIX B.

Existing damaged diffusers are to be replaced where required.

Existing exit and emergency luminaires are to be refixed where in the opinion of the Scout Association of Australia there existing mounting method is insecure.

The existing exit and emergency luminaires are to be visually inspected to ensure correct operation in relationship to normal general lighting.

NEW EMERGENCY LUMINAIRES

Emergency luminaires shall be of the self contained type with the battery, battery charger and any controls necessary contained within the luminaire body.

Emergency luminaires are to be of the non-maintained type.

NEW ILLUMINATED EXIT SIGNS

Illuminated exit signs shall be of the self-contained type with the battery, battery charger and any controls necessary contained within the luminaire body.

Illuminated exit signs are to be of the sustained or non-maintained type.

Illuminated exit signs are to be mounted directly above or immediately adjacent to the required exit.

Illuminated exit signs are to be mounted between 2 metres and 2.4 metres.

Where viewing distances exceed 24 metres the exit legend shall be increased by the factor $d/24$ where d = viewing distance in metres.

MANUFACTURE

Illuminated exit signs and emergency luminaires shall be of the following manufactures:

- Pierlite
- Legrand Minitronics
- Stanilite

PROTECTION AGAINST DAMAGE

Illuminated exit signs and emergency luminaires installed in areas where they are likely to be damaged are to be provided with mechanical protection.

The protection is to consist of proprietary wire guards to surface mounted luminaires or polycarbonate covers to recess mounted luminaires.

LABELLING

Every device which, if turned off or removed, will cause the operation of the emergency lighting shall have the following notice clearly and durably affixed on or immediately adjacent to the device –

WARNING: INTERRUPTING SUPPLY WILL DISCHARGE EMERGENCY LIGHTING BATTERIES.

The manual discharge test facility shall be clearly and durably labelled "Emergency Lighting Test Facility"

ARRANGEMENT AND CONTROL

Emergency lighting shall be arranged to operate upon failure of the electricity supply to the normal general lighting in the designated area.

Where the normal general lighting is of the type which will not immediately restrike provide provision of a time delay to maintain the operation of the exit and emergency lighting system for the period necessary to allow normal general lighting lamps to restrike.

DISCHARGE TEST FACILITY

Provide a manual discharge facility complying with AS/NZS 2293.1 Section 4 for the exit and emergency lighting system to control all existing and new exit and emergency luminaires.

The manual discharge test facility shall comply with the following:

- Capable of simulating a failure of the electricity supply without interruption to the normal general lighting.
- Capable of being manually reset at any time during test.
- Automatically revert to normal state at the conclusion of the discharge test.
- Be located on or adjacent to the switchboard supplying the normal general lighting.
- Be key operated or located in a secure location.
- Be clearly labelled "Emergency Lighting Test Facility"

OPERATING AND MAINTENANCE MANUAL

Provide an operating and maintenance manual in a durable hardbound cover for each exit and emergency lighting system.

The manual is to include the following:

- Description of the maintenance procedure for inspection and maintenance for single point exit and emergency lighting systems as detailed in AS/NZS 2293.2 Section 3 at each nominated interval.
- As-installed plans showing the location of all new and existing exit and emergency luminaires.
- Details of the supply circuits to all new and existing exit and emergency luminaires.
- Luminaire numbering system to identify location of individual exit and emergency luminaires.
- Connection diagram showing details of external connections for each type of exit and emergency luminaires.

- Luminaire data giving full technical data including lamp information make and model No of each exit and emergency luminaire and source of supply.

The operating and maintenance manual shall be kept on the premises or at a location approved by the regulatory authority.

LOGBOOK

Provide a logbook in a durable hardbound cover for the recording of maintenance information.

The logbook is to include the following:

- Provision for recording details of tests carried out as detailed in AS/NZS 2293.2 Section 3 at each nominated interval.
- Provision for recording details of any corrective action taken.
- Provision for recording details of the names of the persons responsible for carrying out the maintenance work and the date of the completion of the work.

The logbook shall be kept on the premises or at a location approved by the regulatory authority.

COMMISSIONING

Upon completion the entire exit and emergency lighting system operation shall be tested. New and existing exit and emergency luminaires are to be included in the test.

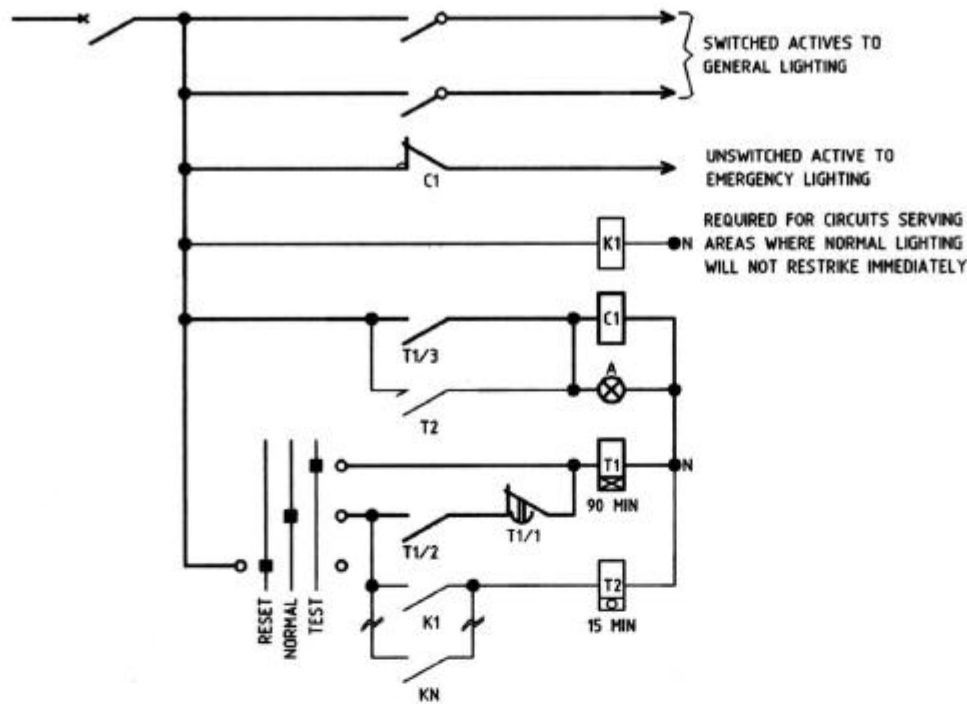
The duration test of the exit and emergency luminaires shall be 120 minutes for new exit and emergency luminaires and 90 minutes for existing exit and emergency luminaires.

CERTIFICATION

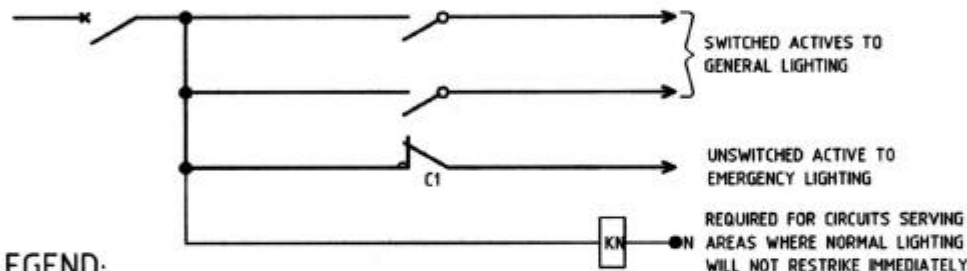
Provide **Certificate of Compliance**, Design and Installation of exit and emergency lighting system to the Scout Association of Australia.

INSTRUCTION

Provide instruction in the testing and maintenance of the exit and emergency lighting system to personnel nominated by the Scout Association of Australia.



FIRST LIGHTING CIRCUIT



TYPICAL LIGHTING CIRCUIT

LEGEND:

- CIRCUIT BREAKER
- NORMALLY OPEN CONTACTOR
- NORMALLY OPEN CONTACT
- PASSING MAKE CONTACT
- NORMALLY CLOSED CONTACT TIME DELAY TO OPEN
- MAKE BEFORE BREAK THREE POSITION KEY SWITCH WITH SPRING RETURN TO CENTRE
- AMBER INDICATING LIGHT
- RELAY COIL INSTANTANEOUS AND TIME DELAY TO OPEN

- INTERVAL TIMER RELAY COIL
- CONTACTOR/RELAY COIL

NOTES:

1. DASHED LINES INDICATE EQUIPMENT REQUIRED WHEN ALL NORMAL LIGHTING IN A ROOM WILL NOT RESTRIKE (REFER CLAUSE 2.4.1)
2. ALTERNATIVELY, THE USE OF FULLY SELF CONTAINED AUTOMATIC TESTING FACILITIES ARE ACCEPTABLE (REFER CLAUSE 4.4.2). NOTE THAT THE RESTRIKE INTERVAL TIMER MAY STILL BE REQUIRED.

EMERGENCY LIGHTING TESTING FACILITIES.
AS2293.1-1998 (CLAUSE 4.3)

STANDARD No	ISSUE
WSE-12	3

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