

GENERAL NOTES : LIGHTING

**PROJECT : BRAHMAPUTRA
PETROCHEMICAL COMPLEX.**

**CLIENT : M/s BRAMHAPUTRA CRACKER
& POLYMER LIMITED**

0	3.9.2009	ISSUED FOR CONSTRUCTION	SMK	MKS	AKS
Rev. No	Date	Purpose	Prepared by	Checked by	Approved by

GENERAL NOTES: LIGHTING

A GENERAL

1. Lighting shall be executed in accordance with the requirements laid down in EIL Specification for Lighting Installation (6-51-0083), respective installation standards, applicable BIS codes & standards, IE Rules and other statutory regulations, specific job requirement indicated in this document and the respective lighting layout drawings.
2. In case of any contradiction between various referred standards / documents / statutory regulations the following order of priority shall govern
 - Statutory regulations
 - Cable layout drawing(s)
 - This specification
 - Installation standards
 - Standard specification
 - Codes and standardsHowever, concurrence of Engineer-in Charge shall always be obtained, before taking a decision in any such matter
3. All lighting fixtures and single phase receptacles/ sockets shall be internally earthed by using the third core of the circuit cable/ separate earth wire in case of circuit wiring, as applicable.
4. Regarding mounting heights of various electrical equipment, reference shall be made to Cl. 4.1.6 of 6-51-0083 Rev 2. In addition for the following items, not covered therein, the mounting height shall be as under: -

FLP switch socket &	:	1200 mm (top) from FFL,
Industrial switch socket.		Unless otherwise specified
5. Underground lighting cables (in paved areas) shall be laid in suitable G.I. pipes buried at a minimum depth of 300mm from FFL. For mechanical protection of such cables, G.I. pipe sleeves shall be extended to 300mm above FFL. Layout of G.I. pipes shall be decided at site to suit site conditions.

B. BUILDING LIGHTING

1. Unless specified otherwise, all lighting and power circuit wiring in buildings shall be done with 3x1.5mm² and 3x2.5mm² (Phase, Neutral & Earth) copper conductor PVC insulated wires respectively.
2. Where cable wiring is used (e.g. in units / offsite packages), wiring shall be done with 3x2.5 mm² (minimum) copper conductor PVC insulated armoured cable. 3rd core of the cable shall be used as earth conductor for earthing of the lighting fixtures
3. 25mm dia. PVC conduits shall be used for concealed conduit wiring and black enamelled conduits shall be used for surface conduit wiring.
4. 5 Amps. recess / surface mounted receptacles for exhaust fans, air circulator and wall-mounted fans etc. shall be provided near respective fan while their controlling switch shall be mounted at 1200mm above FFL under each fan/ circulator or as indicated in the layout drawing.
5. In case of conduit wiring, separate conduit shall be run for each power supply system application, i.e., Normal/ Emergency/ DC lighting/ Power sockets. However common conduit may be considered for Plant Communication and Fire Alarm System.

6. Exact conduit layout shall be decided at site based upon individual lighting layout/ Fire alarm and plant communication layout drawings. Location of drop conduits to switchboxes shall be decided considering final location of switchboxes.
7. Wherever ceiling fans are provided, lighting fixtures shall be suspended by using 3/16" BSW anchor fasteners (wherever required) with a pair of 19mm dia. G.I. pipe supports (Refer Std. 7-51-0212/ 0229) upto the bottom level of ceiling fan, unless otherwise noted in the drawing.
8. Where fan is to be provided, fan hook shall be embedded during casting of the roof slab at the locations of the fans shown in respective drawing.
9. Wherever lighting switches for normal supply and emergency supply have been shown together, these shall be installed in separate boards only. In no case, two sources of supply shall be clubbed in one switchboard.
10. In general, all switches and sockets in concealed conduit wiring system shall be recess mounted type (except for industrial metal clad sockets in control room, substation etc.), whereas for surface conduit/armoured cable system, these shall be surface mounted type.
11. In general lighting fixtures in battery rooms shall be installed on walls at approximately two third the height of ceiling.

C. PLANT LIGHTING

1. All lighting and power wiring in unit areas shall be done with 3x2.5mm² copper conductor, PVC insulated armoured cable. 3rd core of the cable shall be used as earth conductor for earthing of the lighting fixtures.
2. All lighting system cables shall be laid in perforated cable trays supported on columns/ beams, ladders and platforms. Perforated trays shall be of size 60/100 /150 mm wide. The minimum straight run shall be 3000 mm.
3. Fixtures mounted below the platforms for illumination of ladders shall be installed as close to the ladder as possible to facilitate easy replacement of lamps.
4. For fixing Zone 2 / FLP lighting fixtures RCC columns / beams, walls and ceiling, the lighting fixtures shall be installed by welding the applicable type of clamp on existing steel members/metal inserts and lighting fixtures shall be mounted on these. Wherever required, suitable anchor fasteners shall be used for fixing the clamps. In no case, lighting fixtures and Junction boxes etc. be directly welded to steel members.
5. In general, mounting height of flameproof floodlight fixtures shall be 7.5m (min.). In case height of available structure is less than 7.5m, additional structural member shall be provided for installation of the floodlight fixture at site. However, exact orientation of floodlight fixtures shall be decided at site to achieve optimum utility of these fixtures.
6. All platform poles shall be provided with 125W HPMV lamp fixture or 100/200W GLS lamp fixtures. The control gearbox for floodlight fixtures/well glass lighting fixtures shall be suitably located at site for easy access for maintenance. Cables shall be looped using control gear box or JB as per wiring requirement. Wherever applicable, control gear box shall be located in place of Junction box shown in Std. 7-51-0202.