

TRANSNET NATIONAL PORTS AUTHORITY

SPECIFICATION FOR LIGHTING ON EQUIPMENT

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Note: Only the latest amendments and/or additions are reflected in italics in the body of the document.



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1. SCOPE

- 1.1 This Specification covers TPT's requirements for lighting equipment required on equipment and must be read in conjunction with the main Specification.
- 1.2 The following fixed lighting shall be provided in each part of the machine to provide safe operation and maintenance at all times: -
 - 1.2.1 Bulkhead type luminaires over all access ways, stair ways, walkways, maintenance platforms, electrical equipment and similar locations to give a minimum level of maintained illuminance of 50 Lux with emergency lighting facilities to provide lighting for at least 30 minutes in the event of a power failure.
 - 1.2.2 Flood lights of suitable type provided on booms, bridges, fixed structures etc. to provide over the ship's hold and the quay at all operating points below the equipment at ± 6 meters around the equipment a minimum level of maintained illuminance of 50 Lux at quay level;
 - 1.2.3 In addition, floodlights shall be fitted to the operator's cabin to illuminate the operator's furthest/deepest working area to a minimum level of maintained illuminance of 100 Lux;
 - 1.2.4 Fluorescent luminaires for all electrical and machinery house's, operator's cabins, external electrical panels etc. to give a minimum level of maintained illuminance of 200 Lux at floor level, with emergency lighting facilities to provide emergency lighting for at least 30 minutes in the event of a power failure.
 - 1.2.5 Red aircraft warning lights at the highest point of the fixed structure of the equipment and on the seaward end of the hinged section of the boom (if the boom is higher than the highest point of the fixed structure when raised), with emergency backup facilities.

2. FLUORESCENT LUMINAIRES AND CONTROL GEAR

- 2.1 All fluorescent luminaires shall comply with SABS 1119.
- 2.2 Luminaires in machinery houses etc. must be so arranged to avoid stroboscopic effect on rotating equipment.

3. FLOODLIGHTS

- 3.1 All floodlights shall comply fully to SABS 1279.
- 3.2 High pressure sodium vapour discharge types is preferred.
- 3.3 The control gear shall be an integral part of the floodlight but be placed external to the luminaire in a housing separate to that of the lamp. All floodlights shall be fitted with power factor correction equipment.

4. AIRCRAFT WARNING LIGHTS

- 4.1 Aircraft warning lights are to be controlled by a twilight switch with override from the operator's cabin and shall be supplied from a low voltage DC power supply with an emergency power pack (Nickel-cadmium batteries) with sufficient capacity to keep the lamp/s burning for approximately 12 hours in the event of mains power failure.
- 4.2 Warning lights with two lamps and automatic switch over facilities to the second lamp in the event of lamp failure, with alarm indication in the operator's cabin is preferred.



5. GENERAL

- 5.1 All luminaries shall be mounted such that as little light as possible is "spilled" beyond the wharf or ship's edge, since any light falling on the water surface is likely to cause reflected glare difficulties and glare interference with harbour navigation. Details of all lighting must be stated by tenderers at tender stage.
- 5.1.1 All the flood lighting on booms etc. which are raised at some stage, shall be automatically switched off when the boom is raised.
- 5.1.2 Access lighting shall be controlled by two-way switches from the main operator's cabin and from ground level.
- 5.1.3 Self contained luminaires incorporating Nickel-cadmium batteries and charger is preferred for emergency lighting. Emergency lighting will only switch on when the respective luminaires were energized before the break in electricity supply occurred.
- 5.1.4 All fixed lighting shall be supplied from an adequately rated 400/231V double wound air cooled transformer with the centre point of the 231 V winding solidly earthed to the structure.
- 5.1.4.1 Primary and secondary fuses or circuit breakers must be provided in the transformer housing or electrical control cabinet.
- 5.1.5 All luminaires must be wired in PVC, armoured cable to a connection through box and from there to the luminaire with Silicon or other approved heat resistant cable.
- 5.1.6 All luminaires shall be provided with a glass visor of 4mm, heat tempered, clear armoured glass. Plastic light fittings and fittings having plastic refractors, diffusers or covers are not acceptable.
- 5.1.7 It must be stressed that all the luminaire bodies, diffusers, brackets, control gear housings etc. shall be manufactured from either stainless steel grade 304 or die-cast aluminium.
- 5.1.8 All luminaires shall be installed in positions that is readily accessible for lamp replacement and maintenance.
- 5.1.9 All luminaires shall be resiliently mounted to avoid ill effects from vibration.
- An anti-vibration/stabilizing support bracket is to be provided to support all luminaire which can be adjusted.
- 5.1.10 Tenderers are to state whether igniters, control gear, etc. will be suitable for all makes of British, Continental and American lamps available in South Africa.