

8 ELECTRICAL WORKS

8.1 General

In the following are outlined the minimum requirements for the Electrical Works for Wastewater Treatment Plant.

8.1.1 System of Units

All measurements must be in accordance with the International Systems of Units (SI), with the exception of temperature, which will be expressed in degrees Celsius.

8.1.2 Design Temperature

The Contractor shall in this design account for the temperature rise deriving from installed equipment and from solar radiation in such a way that the rated performance and stability of the plant is guaranteed under the prevailing climatic conditions.

Attention shall be given to the design of panels.

The maximum temperature inside the panel should not exceed 30°C or the maximum temperature for any electrical part in the panel.

8.1.3 Degree of Protection

All terminal boxes, cabinets, lighting fixtures, etc. shall have degrees of protection by enclosure, as follows:

Protection	Panels	Terminal Box	Lighting	Interior Socket	Cable gland	Combinet box	Other material	Local Control Box	Outdoor Lighting Local Panel
Indoor	IP54	IP54	IP65*	IP40	IP65	IP54	IP54	IP65	IP54
Outdoor	IP65	IP65	IP67	IP65	IP65	IP65	IP65	IP65	IP65

Other requirements are as specified in the relevant chapters.

*Protection class of lighting equipment to be used in offices of Administration Building and Guard House shall be IP 40.

8.1.4 Condensation

All enclosures shall be designed to avoid condensation with provision for ventilation and drainage as appropriate. Openings for ventilation and drainage must not give access to vermin.

All surface mounted boards will have IP65 gland, there will not be inlet with brush or sponge.

All MCC panels will be air conditioned such that room temperature does not exceed 30°C. Calculation for air conditioning will be submitted for approval. (It should be added to mechanical part, design section).

Main Distribution and all MCC panel rooms will be air conditioned by air handling unit. (It should be added to mechanical part, design section).