

### **Mounting System:**

The mounting structures will constitute of the main supporting structure of a suitable height in addition to the module holding sub structure with the necessary inclination in relation to the horizontal plane so as to gain the maximum of solar radiation and energy production.

In detail, the minimum specification of the mounting structure and sub structure are:

- a) Hot –Dip Galvanized steel structure / G90, minimum 2 mm thickness.
- b) Manufacturer's warranty should be at least 10 years.
- c) Durable design which is capable to withstand high-speed wind of at least 300 km/h, the contractor should provide a detailed design analysis and get approval prior the implementation.
- d) The steel structure shall be anti-corrosion, anti-rust and can withstand high humidity.
- e) The mounting structure shall be all fitted / pre-fabricated and should be assembled at the site (no welding)
- f) The Mounting structure should be fixed on ground using screw type mounting system (the Weight and Dimensions should be determined based on the Load Structural Load analysis)
- g) All bolts, nuts, and washers for the PV modules' mounting structure must be made of stainless steel. Stainless steel must not contact the PV modules' aluminum frames.
- h) All clamps in contact with the PV modules' aluminum frames must be made of aluminum.
- i) All exposed sharp edges in the mounting structure must be covered with an appropriate material.

### **Earthing protection:**

- a) A complete system for grounding the PV modules one by one and the mounting structure for safety.
- b) Each array structure of the PV system should be grounded properly.
- c) All metal casing/shielding of the plant are to be thoroughly grounded.
- d) To check the existing earthing system resistance and modify if need, the earth resistance should be 3-5 $\Omega$ .

### **Cables:**

The minimum specifications of the PV and AC cables are:

- a) PV cables shall comply with PEC standards.
- b) Operation temperature for PV cables should be up to +80 C
- c) PV cables shall be UV resistant, flame retardant, double insulated and with low smoke characteristics.
- d) PV and AC cables shall comply with PEC and international standards
- e) All external cables must be installed inside a cable basket, PVC Flexible pipes with glands shall be used between the modules and the cable basket tray
- f) PVC Flexible pipes with glands shall be used between the modules and the cable tray.

- g) The cable ties shall be black color and UV resistance.
- h) All cables shall be marked properly by means of good quality labels or by other means so that cable can be easily identified.
- i) All cables shall be marked in compliance with IEC 60446-3 category C Basic and safety principles for man-machine interface, marking and identification.
- j) Factory warranty shall be not less than 5 years.
- k) Cabling losses: the cable losses are 1-3%; from string to inverter (DC side), and from inverter unit to the load (AC side).

### **Labelling**

- a) Each item of equipment must have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place.
- b) Tags for each power cable or wire located in manholes, hand holes, and vaults shall be provided.
- c) Warning labels shall be provided and affixed in a conspicuous place.
- d) Warning Signs shall be provided and affixed in a conspicuous place in English Sign
- e. All labelling material shall be weather-resistant.

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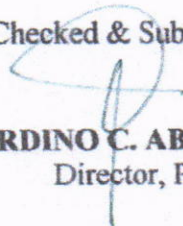
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