**Solar PV Module Mounting Structures and Civil Works**

The civil works for the proposed Solar PV rooftop System shall include, the design of the Roof Top Solar PV mounting frame structures and installation. The PV modules shall be mounted on fixed metallic structures having adequate strength and as per the requirement of the site to withstand the load of the modules and high wind velocities. The mounting structure should be facing south direction tilted at 34degree and the Rooftop Module Mounting structure must be designed accordingly. It should be able to **withstand 80 km/hr** wind speed and support the installed solar PV modules, ensuring the roof remains waterproof, stable, and wind-withstanding capacity. The Contractor must provide the technical design and drawing of the PV mounting structure.

Regarding existing building structures, the contractor needs to take care of the load-bearing capacity of the roof and arrange suitable structures based on the quality of the roof. The total load of the structure (when installed with PV modules) on the terrace should be less than **60 kg/m2**. The array structure shall be grounded properly using a maintenance-free earthing kit suitable for mounting over the building terrace.

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| Galvanized support structures to be fixed on the roof of the building. The galvanization thickness  Should adhere to ASTM 123,  •Mounting structure must be designed such that it is installed to have solar PV array towards due south  around  •The support frame structure should be able to resist at least 25 years of outdoor   |  |  |  | | --- | --- | --- | | Exposure without suffering significant damage or corrosion.  •It shall support solar PV modules at a given orientation, absorb and transfer the mechanical loads to the  Ground properly. The structure should withstand a wind load of **80 KMPH**  **Supply and installation of Cold-formed galvanized steel (min galvanized 80~120mic) column channel**  **C75X35X3mm with a proper base plate including bracing, with Trusses spacing 150cm**  Including the specifications for columns, beams, purlins, bracing, brackets, etc. with connections using plates,  channels and angles, gusset plate, anchor bolt, cleats, fasteners, etc., galvanized steel (min galvanized 80~120mic))  with  a minimum yield strength of 240Mpa.  • 4Ø12mm L120mm anchor bolt.  •3Ø12mm connection bolts with 25 mm length. | | | |  |  |  |   **Supply, install and commissioning Mounting Structures** The contractor is to undertake pull-out and rebound number tests to evaluate the compressive strength  of ordinary concrete and to ensure the applicability of the design to the  **Installation site.** - The Contractor should include in his offer the costs of sampling and testing as required and  according to technical specifications and work, delivery, and installation of the system will be in PIN Kabul compound, **house no 38, PD 04, Share now, Next to blossom hospital, Kabul**  **Requirements.** The Contractor is to submit detailed shop drawings to be approved by the Engineer before the  commencement of the work, and all required materials should be supplied as specified, in the subject  To the Engineer's approval.  - All works shall be done according to the Engineer's instructions, shop drawings, and below specifications. |